Anaesthesia Collection

Question Bank with Answers & Explanations

Generated on April 18, 2026

30 Topics • 421 Questions

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Q1: Which of the following is true regarding spinal, epidural, and local anesthesia? (Q846680)

A. Epidural anesthesia is performed by injecting anesthetic into the intrathecal space.

B. Local anesthetics work by blocking calcium channels, preventing nerve impulse propagation.

C. Spinal anesthesia is commonly used for procedures above the umbilicus.

D. The absolute contraindication for local anesthesia is an allergy to the anesthetic.

See Answer in Part B → Q1

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Q2: A 65-year-old male patient with a history of severe aortic stenosis is scheduled for elective hip replacement surgery. Which of the following is an absolute contraindication for general anesthesia in this patient? (Q846681)

A. Patient refusal

B. Severe aortic stenosis

C. Mallampati class IV airway

D. All of the above

See Answer in Part B → Q2

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Q3: Which of the following is true regarding the history and development of anesthesia? (Q846682)

A. Ether was introduced by Dr. Joseph O'Dwyer in 1842.

B. Chloroform was first used by Dr. Crawford Long in 1847.

C. William Morton demonstrated the use of ether as a general anesthetic in 1846.

D. Propofol was first introduced as an anesthetic in 1932.

See Answer in Part B → Q3

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Q4: A 45 year old man with a history of obesity and obstructive sleep apnea presents for elective hernia repair under general anesthesia. The newly joined Junior resident was given a chance to intubate but he could not succeed. Which of the following Mallampati classes is most likely to indicate the above scenario? (Q846683)

A. Class II

B. Class I

C. Class 0

D. Class III or IV

See Answer in Part B → Q4

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Q5: A 45 year old male presents for a preoperative evaluation before a scheduled elective surgery. During the airway assessment, the base of the uvula is visible, with the soft palate and hard palate clearly seen. Based on this finding, which Mallampati

classification is most appropriate for this patient? (Q846685)

A. Class I

B. Class II

C. Class III

D. Class I or II

See Answer in Part B → Q5

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Q6: Which interincisor distance in centimeters is considered an indicator of potential difficulty for intubation? (Q846686)

A. 3 cm or less

B. 5 cm or more

C. 6 cm or more

D. 8 cm or less

See Answer in Part B → Q6

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Q7: What position should the patient's head be in to measure the sternomental distance accurately? (Q846690)

A. Neck flexed, chin down

B. Neck extended, mouth open

C. Neck fully extended, mouth closed

D. Neutral neck position

See Answer in Part B → Q7

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Q8: A 2 year old child is scheduled for an elective surgery requiring general anesthesia. The child last had a bottle of breast milk 3 hours ago. According to current fasting guidelines for pediatric patients, what is the appropriate next step regarding the child's fasting status before anesthesia? (Q846693)

A. The child can be taken for surgery immediately since it has been 3 hours since the last feed.

B. The child should wait at least 4 hours from the last breast milk feed before undergoing anesthesia.

C. The child should not have anything to eat or drink for at least 8 hours before the procedure.

D. The child is allowed clear liquids until 4 hours prior to the surgery.

See Answer in Part B → Q8

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Q9: Which of the following conditions is least likely to be associated with an increased risk of aspiration despite fasting in general anesthesia? (Q846695)

A. Hiatal hernia

B. Cerebral palsy

C. Multiple sclerosis

D. Patient after Nissen fundoplication surgery

See Answer in Part B → Q9

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Q10: Which of the following medications is NOT typically discontinued prior to general anesthesia? (Q846696)

A. Metformin

B. Sulfonylureas

C. SGLT2 inhibitors

D. Calcium channel blockers

See Answer in Part B → Q10

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Q11: A 68 year old male with atrial fibrillation, on chronic warfarin therapy for stroke prevention, is scheduled for elective hip replacement surgery. How many days prior to the surgery should the warfarin be stopped? (Q846697)

A. 2-5 days

B. 1 day

C. 7 days

D. 10 days

See Answer in Part B → Q11

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Q12: Which of the following drugs can be continued perioperatively? (Q846698)

A. Antithyroid

B. Antiepileptic

C. Antidepressants

D. All of the above

See Answer in Part B → Q12

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Q13: A 30 year old primigravida is scheduled for elective cholecystectomy. Which ASA category does she belong to? (Q846699)

A. Class 1

B. Class 2

C. Class 3

D. Class 4

See Answer in Part B → Q13

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Q14: A 30 year old female patient is undergoing routine laparoscopic appendectomy under general anesthesia. During laryngoscopy, the anesthesiologist can visualize the entire laryngeal aperture. What is the Cormack-Lehane grading of this laryngoscopic view? (Q846700)

A. Grade 1

B. Grade 2

C. Grade 3

D. Grade 4

See Answer in Part B → Q14

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Q1: A 68-year-old patient scheduled for elective total hip replacement is taking aspirin, enalapril, a multivitamin, and metoprolol. Surgery is planned in 5 days. What is the most appropriate perioperative medication management for this patient? (Q852455)

A. Stop enalapril 24 hours before surgery

B. Stop aspirin to minimize perioperative bleeding risk

C. Stop metoprolol to increase cardiac output

D. Increase aspirin dosage for additional analgesic benefit

See Answer in Part B → Q1

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Q2: Which of the following comes under ASA grade 1? (Q860368)

A. Healthy patient

B. Mild disease

C. Moderate disease

D. Morbid patient

See Answer in Part B → Q2

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Q3: Which of the following corresponds to ASA grade III? (Q857322)

A. Moribund patient

B. Patient having systemic illness which is under control or without any functional limitations

C. Patient having systemic illness which is not under control or with functional limitations

D. Patient having systemic illness which is a constant threat to life

See Answer in Part B → Q3

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Q4: Which of the following is the drug of choice for preoperative antibiotic prophylaxis in a patient undergoing cardiac surgery? (Q855613)

A. Penicillin G

B. Erythromycin

C. Azithromycin

D. Cefazolin

See Answer in Part B → Q4

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Q5: In a 45-year-old patient undergoing a preoperative assessment for a surgical procedure, which classification of Mallampati score is assigned based on the following description: Hard palate, soft palate, uvula, tip of the uvula, and tonsil pillars are visible. No oropharyngeal structures are obstructing the view. (Q857819)

A. Grade I

B. Grade II

C. Grade III

D. Grade IV

See Answer in Part B → Q5

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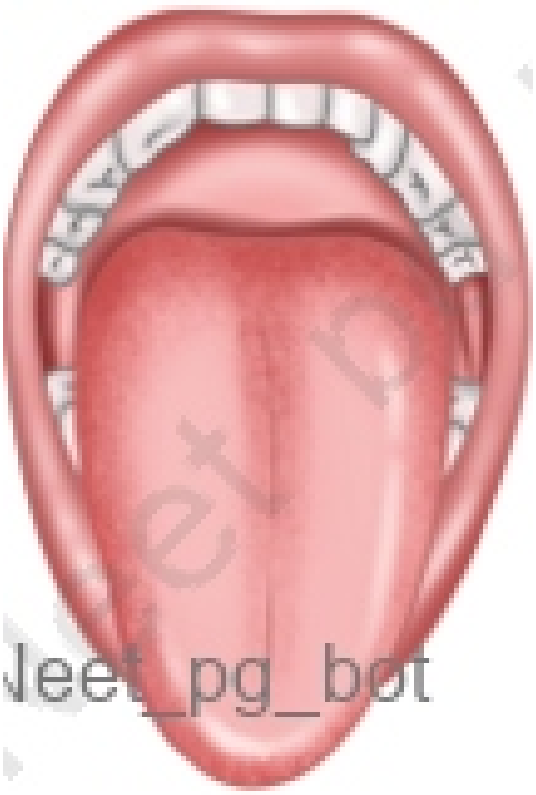
Q6: A patient undergoing airway assessment is asked to fully open their mouth. Using the image shown, determine the Mallampati classification observed. (Q857045)

A. Mallampati class IV

B. Mallampati Class II

C. Mallampati class III

D. Mallampati class I



See Answer in Part B → Q6

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Q7: Preoperative assessment of oral cavity for endotracheal intubation in an adult is done by: (Q857067)

A. Mallampatti score

B. Conmack lehane

C. ASA grading

D. AHA grading

See Answer in Part B → Q7

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Q8: How long should elective surgery be deferred for a patient who had a cough and fever, after he has recovered from COVID-19, and has not required any hospitalization? (Q856585)

A. 6 weeks

B. 8-10 weeks

C. 12 weeks

D. 4 weeks

See Answer in Part B → Q8

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Q9: What is the purpose of using glycopyrrolate as a pre-anesthetic agent? (Q857025)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

See Answer in Part B → Q9

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Q10: Which investigation yields the most precise prognostic information for predicting the risk of perioperative cardiac complications among the options provided? (Q854891)

A. Exercise ECG testing

B. Dobutamine stress echocardiography

C. Myocardial perfusion scintigraphy

D. Coronary angiography

See Answer in Part B → Q10

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Q11: Preoperative assessment of oral cavity for endotracheal intubation in an adult is done by: (Q859741)

A. Mallampatti score

B. Conmack lehane

C. ASA grading

D. AHA grading

See Answer in Part B → Q11

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Q12: In a 45-year-old patient undergoing a preoperative assessment for a surgical procedure, which classification of Mallampati score is assigned based on the following description: Hard palate, soft palate, uvula, tip of the uvula, and tonsil pillars are visible. No oropharyngeal structures are obstructing the view. (Q820224)

A. Grade I

B. Grade II

C. Grade III

D. Grade IV

See Answer in Part B → Q12

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Q13: What is the appropriate preoperative fasting recommendation? (Q793415)

A. 4 hours for solids in adults

B. 2 hours for liquids in adults

C. 2 hours for breast milk in infants

D. 4 hours for solids in infants

See Answer in Part B → Q13

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Q13 (p. 38)

Q1: Which of the following drugs is not metabolized by plasma esterases? (Q846724)

A. Procaine

B. Chloroprocaine

C. Tetracaine

D. Cocaine

See Answer in Part B → Q1

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Q2: A patient with known alcoholic liver disease is scheduled for a dental extraction. Which of the following local anaesthetics can be safely administered to this patient? (Q846725)

A. Lignocaine

B. Articaine

C. Bupivacaine

D. Mepivacaine

See Answer in Part B → Q2

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Q3: What is the mechanism of action of the given drug? (Q846727)

A. Blocks Na + channels

B. Blocks K + channels

C. Both (1) & (2)

D. Blocks Cl - channels



See Answer in Part B → Q3

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Q4: All among the following are true about adding Adrenaline with Lignocaine except: (Q846731)

A. Increases the duration of action

B. Decreases blood loss

C. Contraindicated in patients with cardiovascular disease

D. Increases the rate of systemic absorption

See Answer in Part B → Q4

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Q5: A patient following an RTA presented with multiple lacerations over the forearm and knee regions, which were sutured under LA. A few minutes after suturing, he complained of lightheadedness and dizziness, which was followed by an episode of seizure. On examination, his vitals were: HR- 58 bpm; BP- 88/50 mmHg. What is the definitive management for this patient? (Q846734)

A. Perform urgent CT head

B. Administer IV Lorazepam

C. Give 20% intralipid solution

D. Airway management and ventilation

See Answer in Part B → Q5

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Q6: Anesthetist decides to administer Lignocaine with adrenaline for epidural analgesia. Choose the correct pair of concentration of Lignocaine and the concentration ratio when used with adrenaline. (Q846741)

A. 1% - 1:100,000

B. 1% - 1:200,000

C. 5% - 1:200,000

D. 5% - 1:100,000

See Answer in Part B → Q6

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Q7: Cocaine exerts its local anesthetic action by blocking which ion channel? (Q846743)

A. Potassium channels

B. Calcium channels

C. Sodium channels

D. Chloride channels

See Answer in Part B → Q7

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Q8: What is the major concern associated with bupivacaine toxicity? (Q846745)

A. Liver toxicity

B. Nephrotoxicity

C. Cardiotoxicity

D. Neurotoxicity

See Answer in Part B → Q8

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Q9: What is the primary function of pseudocholinesterase? (Q846746)

A. Breaks down acetylcholine at neuromuscular junctions

B. Hydrolyzes ester-based compounds in the plasma

C. Converts succinylcholine into its active form

D. Metabolizes amide local anesthetics

See Answer in Part B → Q9

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Q10: In comparison to the retrobulbar block, which statement is true regarding the peribulbar block? (Q846748)

A. It is performed deeper than the retrobulbar block.

B. It has a higher risk of optic nerve injury.

C. It generally provides a wider area of anesthesia.

D. It is more likely to cause complications compared to the retrobulbar block.

See Answer in Part B → Q10

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Q11: What are the two active ingredients in EMLA cream? (Q846749)

A. 2.5% Lidocaine and 2.5% Procaine

B. 3.5% Prilocaine and 3.5% Tetracaine

C. 2.5% Lidocaine and 2.5% Prilocaine

D. 4.5% Bupivacaine and 4.5% Lidocaine

See Answer in Part B → Q11

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Q12: A 50 year old female patient is undergoing a minor surgical procedure on her left forearm using intravenous regional anesthesia (IVRA) for pain control. During the procedure, the patient suddenly develops seizures and exhibits signs of cardiovascular instability. Which of the following is the most appropriate immediate management step for this patient? (Q846750)

A. Administer intravenous calcium gluconate

B. Administer intravenous magnesium sulphate

C. Initiate lipid emulsion therapy

D. Give an additional bolus of lidocaine

See Answer in Part B → Q12

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Q13: Which of the following is the correct order of susceptibility of nerve fibers to local anesthetics (LA)? (Q846751)

A. A alpha = A beta > A gamma = A delta > B > C

B. B > A alpha = A beta > A gamma = A delta > C

C. A gamma = A delta > A alpha = A beta > B > C

D. A gamma = A delta > B > A alpha = A beta > C

See Answer in Part B → Q13

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Q7 (p. 42) *Q8 (p. 42)* *Q9 (p. 42)* *Q10 (p. 43)*

Q1: Which of the following is true regarding the image provided? (Q844108)

A. EMLA contains ropivacaine and ligocaine

B. EMLA can lead to methemoglobinemia

C. EMLA contains 5% lignocaine

D. EMLA acts within 15 mins



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See Answer in Part B → Q1

Q2: Which of the following topical local anesthetics is commonly used in cataract surgery? (Q860062)

A. Proparacaine 0.5%

B. Bupivacaine 0.5%

C. Halothane

D. Nitrous Oxide

See Answer in Part B → Q2

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Q3: Which of the following is the mechanism of action of Local anesthetics? (Q860108)

A. Blocks Na + channels

B. Stimulate Ca + Channels

C. Block Cl - Channels

D. Stimulate K + channels

See Answer in Part B → Q3

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Q4: Which neuromuscular blocking agent undergoes Hofmann elimination? (Q830820)

A. Pancuronium

B. Rocuronium

C. Vecuronium

D. Atracurium

See Answer in Part B → Q4

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Q5: Which of the following local anesthetics causes hypertension? (Q854959)

A. Cocaine

B. Lignocaine

C. Bupivacaine Prilocaine

D. Prilocaine

See Answer in Part B → Q5

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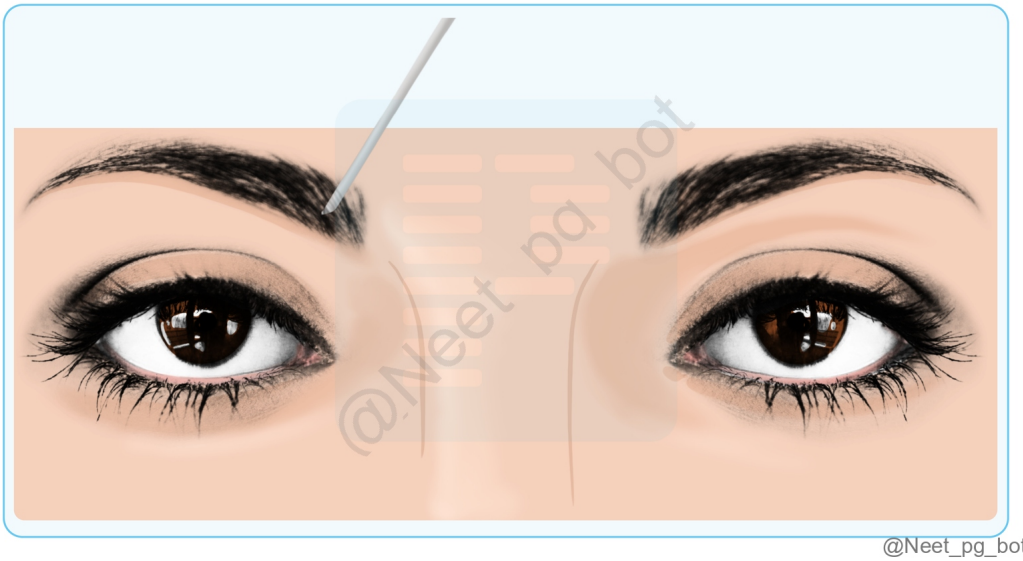
Q6: What is the nerve blocked in the following local anaesthesia technique? (Q858053)

A. Supratrochlear nerve

B. Anterior ethmoidal nerve

C. Sphenopalatine nerve

D. Greater palatine nerve



See Answer in Part B → Q6

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Q7: What is the mechanism of action of local anesthetics? (Q858066)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

See Answer in Part B → Q7

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Q8: During resuscitation, a patient received a 20% intralipid injection. What could have been the most probable diagnosis? (Q858068)

A. Local anaesthesia toxicity

B. Asphyxia due to drowning

C. Electrocution

D. Pulseless electrical activity

See Answer in Part B → Q8

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Q9: A young male patient was given a regional block with 0.25% bupivacaine for a minor surgical procedure. Shortly after the injection, the patient suddenly became unresponsive, and the pulse was not recordable. Which of the following would be the best course of management for this patient? (Q856032)

A. CPR with 20% intralipid

B. CPR with sodium bicarbonate

C. CPR with dobutamine

D. CPR with calcium

See Answer in Part B → Q9

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Q10: Which is the anesthesia of choice in a daycare dental surgery? (Q859322)

A. General anesthesia

B. Spinal anesthesia

C. Epidural anesthesia

D. Infiltration anesthesia

See Answer in Part B → Q10

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• [03_Regional Anaesthesia] 005 Regional Anaesthesia Spinal Epidural And Caudal

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Q1: When performing caudal anaesthesia in a neonate, the needle should not be advanced beyond which level to prevent accidental dural puncture and total spinal anaesthesia? (Q885242)

A. S1

B. S3

C. S2

D. L5

See Answer in Part B → Q1

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Q2: A 3-year-old boy is scheduled for circumcision and is undergoing a pre-anaesthesia evaluation. Which type of anaesthesia is most preferred for this procedure? (Q846820)

A. Spinal anaesthesia

B. General anaesthesia

C. Local anaesthesia

D. Caudal anaesthesia

See Answer in Part B → Q2

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Q3: A 2-year-old child weighing 10 kg is scheduled for a procedure that requires caudal anaesthesia. The anaesthetist plans to use a 0.1% lidocaine solution, with the recommended dose set at 0.5 mL/kg. What total volume of lidocaine should be administered? (Q846821)

A. 3 mL

B. 4 mL

C. 7 mL

D. 5 mL

See Answer in Part B → Q3

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Q4: A 35-year-old man is set to undergo a hemorrhoidectomy, and the anaesthetist intends to utilise a saddle block for anaesthesia. Which of the following is the main benefit of employing a saddle block in this procedure? (Q846822)

A. Provides deep sedation

B. Longer duration of action

C. Complete motor blockade.

D. Rapid recovery of motion

See Answer in Part B → Q4

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Q5: A 43-year-old man with scoliosis is scheduled for inguinal hernia mesh repair. During the pre-anaesthetic assessment, spinal anaesthesia was chosen. What would be the most appropriate approach for inducing anaesthesia in this patient? (Q846823)

A. Midline approach

B. Paramedian approach

C. Caudal approach

D. Taylor's approach

See Answer in Part B → Q5

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Q6: A 71-year-old man with COPD, atrial fibrillation, and osteoporosis is admitted for revision hip surgery. The surgical team chooses continuous spinal anaesthesia (CSA) to manage pain and reduce respiratory risks, considering his desire to stay awake. Which of the following is most commonly associated with CSA? (Q846824)

A. Conus medullaris syndrome

B. Lumbar spinal stenosis

C. Syringomyelia

D. Cauda equina syndrome

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 68-year-old male undergoing elective orthopaedic surgery under spinal anaesthesia suddenly becomes unresponsive. The anesthesiologist suspects total spinal anaesthesia. Which of the following set of statements is true? Sensory loss typically follows the caudal spread Profound motor weakness due to cephalad spread Respiratory depression Severe hypotension and bradycardia due to sympathetic blockade. (Q846825)

A. 1,2,3

B. 2,3,4

C. 1,3,4

D. 1,2,3,4

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 3-month-old infant is scheduled for a surgical procedure requiring spinal anaesthesia. To perform the procedure safely, the anesthesiologist must remember that in an infant, the spinal cord conus medullaris typically ends at which level? (Q885239)

A. Lower border of L1

B. Upper border of L1

C. Lower border of L3

D. Lower border of S2

See Answer in Part B → Q8

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Q9: During a lumbar puncture in an adult, at which vertebral level does the dural sac (subarachnoid space) typically terminate? (Q885240)

A. L1

B. L3

C. S1

D. S2

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A 37-year-old male is undergoing inguinal hernia repair with spinal anaesthesia. Immediately after administering the anesthesia, the patient goes into cardiac arrest. Which anaesthetic drug is likely responsible for this? (Q846819)

A. Ropivacaine

B. Lidocaine

C. Chloroprocaine

D. Bupivacaine

See Answer in Part B → Q10

@Neet_pg_bot

Q11: Tuffier's Line generally corresponds to which vertebral level or interspace? (Q885243)

A. L2-L3

B. L3

C. L4-L5

D. L5-S1

See Answer in Part B → Q11

@Neet_pg_bot

Q12: During the onset of a subarachnoid block, which of the following sensations is typically the very first to be lost? (Q885244)

A. Pain sensation

B. Cold temperature discrimination

C. Proprioception

D. Voluntary motor function

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A patient is in the recovery room after a transurethral resection of the Prostate performed under spinal anaesthesia. In what order will the following functions return as the block wears off? (Q885245)

A. Motor → Touch → Pain → Cold → Sympathetic

B. Sympathetic → Cold → Pain → Touch → Motor

C. Pain → Motor → Touch → Sympathetic → Cold

D. Motor → Cold → Touch → Pain → Sympathetic

See Answer in Part B → Q13

@Neet_pg_bot

Q14: According to current safety guidelines ASRA/AAGBI, what is the preferred antiseptic agent for skin preparation before a central neuraxial block? (Q885248)

A. 10% Povidone-iodine aqueous solution

B. 0.5% - 2% Chlorhexidine in 70% Alcohol

C. 70% Isopropyl alcohol alone

D. Hydrogen peroxide

See Answer in Part B → Q14

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Q15: During the administration of spinal anaesthesia via a midline approach, which of the following structures is NOT pierced? (Q885251)

A. Supraspinous ligament

B. Ligamentum flavum

C. Posterior longitudinal ligament

D. Dura mater

See Answer in Part B → Q15

@Neet_pg_bot

Q16: During the performance of a subarachnoid block, the needle must traverse several layers to reach the target space. Between which two layers is the local anaesthetic actually deposited to achieve a successful block? (Q885252)

A. Dura mater and Ligamentum flavum

B. Dura mater and Arachnoid mater

C. Arachnoid mater and Pia mater

D. Pia mater and the Spinal cord

See Answer in Part B → Q16

@Neet_pg_bot

Q17: In a normal-sized adult, which of the following patient-related factors has the least influence on the final level of a spinal block? (Q885253)

A. Patient Height

B. Patient Age

C. CSF Volume

D. Pregnancy

See Answer in Part B → Q17

@Neet_pg_bot

Q18: A 37-year-old man is on the surgical table for inguinal hernia repair. At what level of the spinal cord is spinal anaesthesia administered to achieve the preferred level of the block? (Q846790)

A. L1 - L2

B. L5 - S1

C. S1 - S2

D. L3 - L4

See Answer in Part B → Q18

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Q19: A 48-year-old male is undergoing an open inguinal hernia repair. The anesthesiologist decides to use epidural anaesthesia instead of spinal anaesthesia for better postoperative pain management. What is an additional advantage of epidural anaesthesia over spinal in this patient? (Q846806)

A. Complete sensory and motor block

B. Less volume of anaesthesia is required

C. Immediate onset of anaesthesia

D. Longer duration of anaesthesia

See Answer in Part B → Q19

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Q20: A 67-year-old female with a history of osteoarthritis, significantly affecting her quality of life, is scheduled for knee replacement surgery. After exploring her options, she decides to opt for epidural anaesthesia. All of the following are the disadvantages of epidural anaesthesia, except? (Q846804)

A. High risk of post-dural headache

B. Late onset of anaesthesia

C. Patchy level of blockade

D. Difficult technique

See Answer in Part B → Q20

@Neet_pg_bot

Q21: A 75-year-old male with osteoarthritis is undergoing hip replacement surgery. After obtaining proper consent and following necessary precautions, the catheter was successfully inserted. What is the most likely factor that could hinder the administration of epidural anaesthesia in this patient? (Q846803)

A. Increase in epidural venous pressure

B. Decrease in epidural venous pressure

C. Narrowing of epidural space

D. Widening of epidural space

See Answer in Part B → Q21

@Neet_pg_bot

Q22: A 30-year-old primigravida presents to the hospital with progressively intense contractions over the past few hours. After discussing her pain management options, she chooses epidural anaesthesia for labour. What is the dermatome level associated with the first stage of labour? (Q846802)

A. S2 to S4

B. T10 to L1

C. L1 to S4

D. T10 to S1

See Answer in Part B → Q22

@Neet_pg_bot

Q23: A 25-year-old primigravida is scheduled for a caesarean section. After discussing the risks, she chooses epidural anaesthesia. Which sign is not seen in correct placement of the epidural needle in the epidural space? (Q846801)

A. CSF drops following guidewire removal

B. Loss of resistance

C. Aspiration of solution in the needle hub.

D. Absence of knee-jerk

See Answer in Part B → Q23

@Neet_pg_bot

Q24: A 52-year-old male is scheduled for a prostatectomy under regional anaesthesia. The anesthesiologist decides to perform epidural anaesthesia for postoperative pain control. Which of the following needles is typically used for administering epidural anaesthesia? (Q846800)

See Answer in Part B → Q24

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Q25: A 65-year-old male with a history of aortic stenosis, hypertension, and recent cerebral venous thrombosis on anticoagulant therapy is scheduled for lower limb surgery. The anesthesiology team is evaluating the use of spinal anaesthesia. Which of the following is not a contraindication for spinal anaesthesia in this patient? (Q846799)

A. Aortic stenosis

B. Cerebral venous thrombosis

C. Hypertension

D. Vertebral osteomyelitis

See Answer in Part B → Q25

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Q26: A 65-year-old male scheduled for foot and ankle surgery under spinal anaesthesia is unable to raise his leg or move his knee but can move his feet. To ensure adequate sensory block, at which dermatomal level should the spinal anaesthesia be achieved, and what is his motor blockade score according to the Modified Bromage Scale? (Q846798)

A. L2-L3, Score: 2

B. L4-L5, Score: 1

C. L2-L3, Score: 3

D. L4-L5, Score: 2

See Answer in Part B → Q26

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Q27: A 40-year-old male undergoing hernia repair under spinal anaesthesia is being assessed by the anesthesiologist for factors influencing the level of anaesthesia. Which of the following factors is least likely to affect the level of spinal anaesthesia? (Q846797)

A. Baricity of the local anaesthetic

B. Volume of cerebrospinal fluid

C. Age of the patient

D. Type of spinal needle

See Answer in Part B → Q27

@Neet_pg_bot

Q28: A 30-year-old female undergoes spinal anaesthesia for a caesarean section. Twenty hours later, she develops a severe occipital headache that worsens when standing up and improves on lying down. Which of the following is the most definitive treatment for her condition? (Q846796)

A. Oral caffeine

B. Supine positioning

C. Epidural blood patch

D. Intravenous fluids

See Answer in Part B → Q28

@Neet_pg_bot

Q29: A 45-year-old woman undergoes a caesarean section under spinal anaesthesia. During her recovery, she is monitored for potential complications associated with the anaesthesia. Which of the following is not related to spinal anaesthesia? (Q846795)

A. Transient Neurologic Symptoms

B. Post-Dural Puncture Headache

C. Respiratory Depression

D. Malignant Hyperthermia

See Answer in Part B → Q29

@Neet_pg_bot

Q30: A 58-year-old man undergoing urological surgery under spinal anaesthesia develops hypotension that does not improve with fluid resuscitation. Which of the following should be administered to manage his hypotension? (Q846794)

A. Metoprolol

B. Atropine

C. Pethidine

D. Ephedrine

See Answer in Part B → Q30

@Neet_pg_bot

Q31: A 63-year-old man with benign prostatic hyperplasia (BPH) is scheduled for prostate surgery. During the pre-anaesthesia evaluation, spinal anaesthesia is selected. To ensure adequate anaesthesia for this procedure, what is the required level of the sensory block? (Q846793)

A. Block till L1

B. Block till L2

C. Block till T4

D. Block till T10

See Answer in Part B → Q31

@Neet_pg_bot

Q32: A 32-year-old woman is on the surgical table for a lower segment caesarean section (LSCS). During the administration of spinal anaesthesia, the anaesthetist suddenly feels a "snap." Which structure is most likely responsible for this sensation? (Q846792)

A. Arachnoid mater

B. Infraspinatus Ligament

C. Supraspinous Ligament

D. Ligamentum Flavum

See Answer in Part B → Q32

@Neet_pg_bot

Q33: A 27-year-old male diagnosed with testicular torsion is scheduled for emergency surgery. During the pre-anesthesia assessment, the type of anaesthesia was decided. Which of the following about the needle (in the image below) used for administering the necessary anaesthesia is incorrect? (Q846791)

A. It creates a smaller puncture

B. Less chances of Post dural puncture headache

C. Used commonly in spinal anaesthesia

D. It is a dura-cutting needle



See Answer in Part B → Q33

@Neet_pg_bot

• [03_Regional Anaesthesia] 006 Previous Year Questions

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[03_Regional Anaesthesia] 006 Previous Year Questions — Quick Jump

Q1 (p. 58) *Q2 (p. 58)* *Q3 (p. 58)* *Q4 (p. 59)* *Q5 (p. 59)* *Q6 (p. 60)*
Q7 (p. 60) *Q8 (p. 61)* *Q9 (p. 62)*

Q1: Which of the following is false regarding Lumbar puncture (Q865390)

A. PDPH is commonly seen in young females

B. Meningitis is not a common complication of lumbar puncture

C. Lumbar puncture must be done in patients with SAH with normal NCCT

D. Lumbar puncture is safe in thrombocytopenia<10k

See Answer in Part B → Q1

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Q2: A female following an RTA injured her chest. On X-ray, fracture of 3rd to 5th ribs was noted. Pain was not responsive to analgesics. Which block will be given to reduce the pain? (Q852832)

A. Cervical block

B. Thoracic epidural block

C. Supra-clavicular block

D. Lumbar epidural block

See Answer in Part B → Q2

@Neet_pg_bot

Q3: In epidural anesthesia, which of the following layers is least likely to be punctured during the procedure? (Q860370)

A. Arachnoid mater

B. Ligamentum flavum

C. Supraspinous

D. Infraspinous

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Which of the following is most suitable local anesthetic for intravenous regional anesthesia? (Q857814)

A. Bupivacaine

B. Mepivacaine

C. Procaine

D. Lidocaine

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which drug is most likely responsible for the occurrence of hyperthermia and muscle rigidity in a patient undergoing surgery while being administered anesthesia with halothane? (Q856020)

A. D-curare

B. Suxamethonium

C. Cis-atracurium

D. Rocuronium

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A patient presented with headache, vomiting, and fever. Meningitis was suspected. While performing a lumbar puncture, which is the last structure you will pierce just before entering the lumbar cistern? (Q856025)

A. Ligamentum flavum

B. Dura mater

C. Arachnoid membrane

D. Pia mater

See Answer in Part B → Q6

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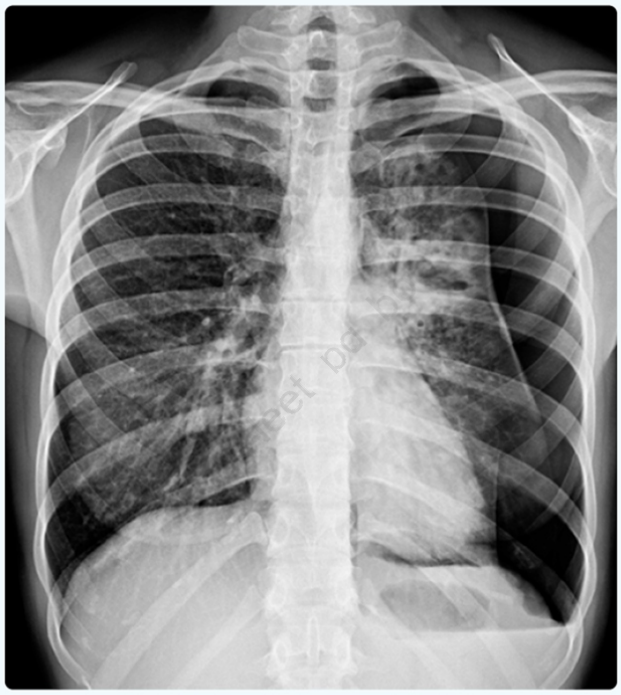
Q7: A smoker who underwent an interscalene block for an arthroscopic acromioclavicular joint reconstruction 2 days ago presents for a follow-up. A chest X-ray is performed, which shows an abnormality. The patient is asymptomatic and is resting comfortably in bed. What is the next step in management? (Q859335)

A. Insert chest drain as soon as possible

B. Do thoracostomy

C. Elective intubation and IPPV

D. Wait and watch and give supplementary oxygen if needed



Chest X-ray : Left pneumothorax

See Answer in Part B → Q7

@Neet_pg_bot

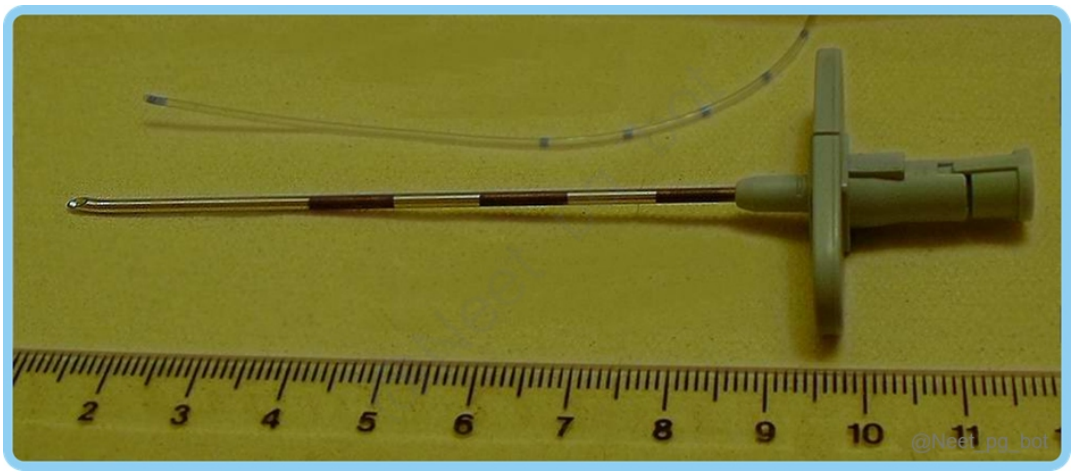
Q8: What is the needle shown in the picture? (Q859735)

A. Whitacre needle

B. Sprotte needle

C. Tuohy needle

D. Quincke-Babcock needle



See Answer in Part B → Q8

@Neet_pg_bot

Q9: Identify the nerve block shown in the given image: (Q879122)

A. Inferior alveolar

B. Anterior ethmoidal

C. Maxillary

D. Greater palatine



See Answer in Part B → Q9

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• [04_Neuromuscular Blockade] 007 Muscle Relaxants

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[04_Neuromuscular Blockade] 007 Muscle Relaxants — Quick Jump

Q1 (p. 64)	*Q2 (p. 64)*	*Q3 (p. 65)*	*Q4 (p. 65)*	*Q5 (p. 65)*	*Q6 (p. 66)*
Q7 (p. 66)	*Q8 (p. 66)*	*Q9 (p. 67)*	*Q10 (p. 67)*	*Q11 (p. 68)*	*Q12 (p. 68)*
Q13 (p. 69)	*Q14 (p. 69)*	*Q15 (p. 69)*			

Q1: A patient undergoing rapid sequence induction of anaesthesia receives succinylcholine as a muscle relaxant. Shortly after administration, the anesthesiologist notices muscle fasciculations followed by flaccid paralysis. What is the mechanism responsible for these observed effects? (Q846704)

A. Prolonged depolarization of the muscle membrane

B. Competitive inhibition of Ach at the neuromuscular junction

C. Rapid hydrolysis by acetylcholinesterase

D. Blockade of presynaptic nicotinic receptors

See Answer in Part B → Q1

@Neet_pg_bot

Q2: Which muscle is the first to regain function after muscle relaxation? (Q846705)

A. Triceps

B. Adductor pollicis

C. Quadriceps

D. Diaphragm

See Answer in Part B → Q2

@Neet_pg_bot

Q3: What type of muscle relaxant works by blocking acetylcholine at the neuromuscular junction? (Q846706)

A. Depolarizing muscle relaxant

B. Non-depolarizing muscle relaxants

C. Centrally acting muscle relaxants

D. Cholinesterase inhibitor

See Answer in Part B → Q3

@Neet_pg_bot

Q4: During surgery, a patient receives a long-acting steroidal non-depolarizing muscle relaxant that is mainly excreted by the kidneys. Which drug is likely used? (Q846708)

A. Vecuronium

B. Rocuronium

C. Pancuronium

D. Gallamine

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A patient undergoing prolonged surgery is given the most effective muscle relaxant that undergoes Hofmann elimination. Which of the following benzylisoquinolinium muscle relaxant has been administered? (Q846709)

A. Alcuronium

B. d-Tubocurarine

C. Atracurium

D. Cisatracurium

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 45-year-old woman with a known history of myasthenia gravis is undergoing an emergency appendicectomy. The anesthesiologist plans to use muscle relaxants for rapid tracheal intubation. The patient is currently on pyridostigmine. Which of the following is the most appropriate muscle relaxant of choice for this patient? (Q846711)

A. Succinylcholine at a standard dose

B. Rocuronium with sugammadex available for reversal

C. Succinylcholine at a reduced dose

D. Pancuronium for longer paralysis duration

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 30-year-old male is brought to the emergency department after a motor vehicle accident and requires rapid tracheal intubation. The patient has a history of spinal cord injury from a previous accident 6 months ago. Which of the following muscle relaxants should be used with utmost caution? (Q846712)

A. Rocuronium

B. Suxamethonium

C. Vecuronium

D. Atracurium

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 40 y/o man undergoes surgery and receives suxamethonium for rapid sequence induction. After surgery, he experiences prolonged apnea. Genetic testing reveals he has a homozygous atypical pseudocholinesterase enzyme. What is the most likely explanation for his prolonged apnea? (Q846713)

A. Increased acetylcholinesterase activity

B. Increased sensitivity to suxamethonium due to genetic predisposition

C. Interaction with a non-depolarizing muscle relaxant

D. Hyperkalemia caused by suxamethonium

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 45-year-old male is undergoing surgery and is given repeated doses of suxamethonium for muscle relaxation. After some time, his muscle response starts to fade despite continuous stimulation. This is most likely due to the development of a phase II block. Which of the following is not a characteristic feature of phase II block with suxamethonium? (Q846714)

A. It is associated with a fade in muscle response during repetitive nerve stimulation

B. It can be influenced by prolonged exposure to suxamethonium

C. It responds predictably to cholinesterase inhibitors like neostigmine

D. Fast-twitch muscle fibres are more susceptible to phase II block than slow-twitch fibres

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A 30-year-old male with a history of extensive burns sustained two weeks ago requires rapid sequence intubation for surgery. The anaesthetist considers using suxamethonium for muscle relaxation. Which of the following is the most appropriate reason to avoid using suxamethonium in this patient? (Q846715)

A. Risk of increased intracranial pressure

B. Risk of phase II block

C. Risk of hyperkalemia

D. Risk of myalgia

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 28-year-old man with a history of asthma is undergoing elective surgery. He is induced with isoflurane and given succinylcholine for muscle relaxation. Within minutes, the surgical team observes that he has developed severe muscle rigidity, a rapid heart rate, and a notable increase in body temperature. Which drug/s is/are most likely responsible for the onset of these symptoms in this patient? (Q846716)

A. Isoflurane only

B. Succinylcholine only

C. Both isoflurane and succinylcholine

D. Neither isoflurane nor succinylcholine

See Answer in Part B → Q11

@Neet_pg_bot

Q12: During a routine orthopaedic surgery, a 35-year-old female patient develops muscle rigidity, tachycardia, and elevated body temperature shortly after being administered halothane and succinylcholine. Which of the following actions should the anesthesiologist take first to manage this patient's condition? (Q846717)

A. Administer dantrolene and bicarbonate immediately.

B. Stop halothane and succinylcholine, and hyperventilate with 100% oxygen.

C. Administer dantrolene and continue the surgery with halothane only.

D. Administer cold IV fluids with dantrolene.

See Answer in Part B → Q12

@Neet_pg_bot

Q13: Which of the following factors will not potentiate the effect of neuromuscular blockade? (Q846718)

A. Hypercalcemia, Alkalosis

B. Hypermagnesemia, Hypothermia

C. Lithium, Tetracycline

D. Local anesthetics, Clindamycin

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 45-year-old female presents to the emergency department with altered mental status, flushed skin, and tremors after starting a new antidepressant. On examination, there is hyperreflexia in the lower extremities, muscle rigidity, and clonus. Which syndrome should be considered in her case? (Q846719)

A. Malignant Hyperthermia

B. Serotonin Syndrome

C. Neuroleptic Malignant Syndrome

D. Heat Exhaustion

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A 30-year-old female patient is scheduled for laparoscopic cholecystectomy under daycare anaesthesia. Which muscle relaxant would be appropriate to ensure rapid recovery while minimising residual effects? (Q846721)

A. Succinylcholine

B. Cisatracurium

C. Rocuronium with Sugammadex

D. Pancuronium

See Answer in Part B → Q15

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• [04_Neuromuscular Blockade] 008 Previous Year Questions

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[04_Neuromuscular Blockade] 008 Previous Year Questions — Quick Jump

Q1 (p. 71) *Q2 (p. 71)* *Q3 (p. 72)* *Q4 (p. 72)* *Q5 (p. 72)* *Q6 (p. 73)* *Q7 (p. 73)*

Q1: A 50-year-old male patient underwent lower abdominal surgery under general anaesthesia. Vecuronium was administered as a muscle relaxant during the procedure. At the end of the surgery, which of the following is the most appropriate agent to reverse the effects of vecuronium? (Q865383)

A. Neostigmine

B. Baclofen

C. Atropine

D. Drotaverine

See Answer in Part B → Q1

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Q2: Which of the following conditions is not reversed with the administration of atropine? (Q852519)

A. Bradycardia

B. Muscle weakness due to neuromuscular blockade

C. Excessive salivation

D. Bronchoconstriction

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A patient who received a supraclavicular brachial plexus block with 0.5% bupivacaine develops hypotension and arrhythmias. What is the first-line treatment for this situation? (Q860371)

A. Invasive ventilation

B. 20% intralipid infusion

C. Sodium bicarbonate

D. Cardiopulmonary resuscitation

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 45-year-old patient undergoing surgery was administered 85 mg of rocuronium to induce anesthesia, but the induction failed. Which drug should be administered for immediate reversal of the rocuronium? (Q839916)

A. Neostigmine

B. Sugammadex

C. Glycopyrrolate

D. Edrophonium

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A patient is given a nicotinic receptor antagonist as a muscle relaxant. Which drug is given postoperatively to recover from muscle weakness? (Q854895)

A. Physostigmine

B. Neostigmine

C. Carbachol

D. Succinylcholine

See Answer in Part B → Q5

@Neet_pg_bot

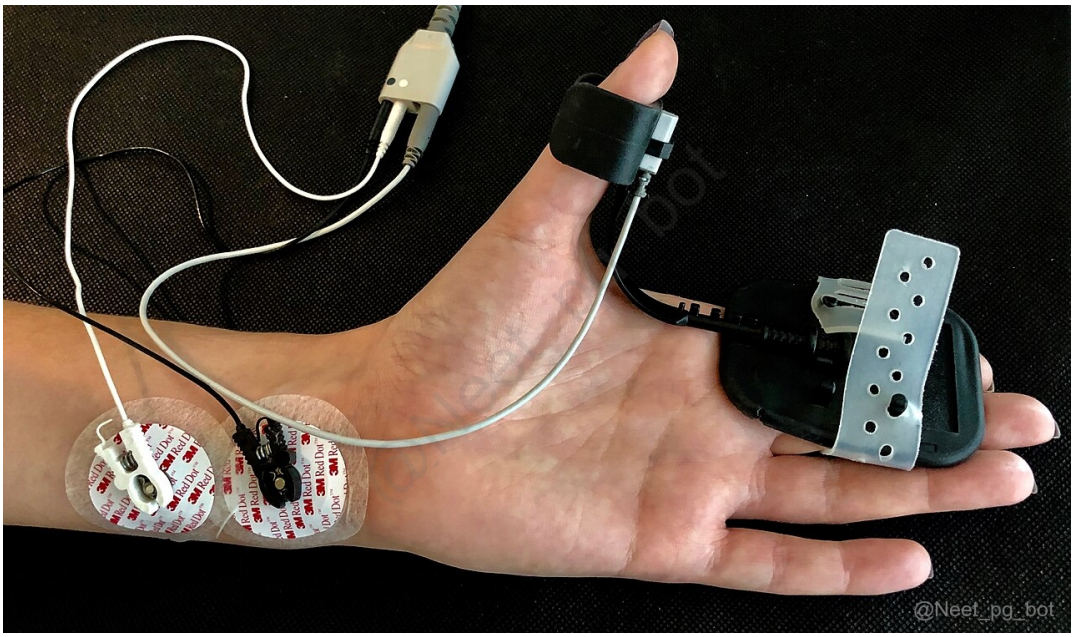
Q6: The image given below shows neuromuscular monitoring of the patient after anesthesia. What is the most commonly used nerve for monitoring? (Q855547)

A. Ulnar nerve

B. Median nerve

C. Radial nerve

D. Metacarpal nerve



See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which method is considered the most effective for evaluating the extent of muscle relaxation? (Q793429)

A. Tetanic stimulation

B. Double-burst stimulation

C. Train of four

D. Electromyography

See Answer in Part B → Q7

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• [05_General Anaesthesia] 009 Previous Year Questions

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[05_General Anaesthesia] 009 Previous Year Questions — Quick Jump

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Q7 (p. 77)	*Q8 (p. 77)*	*Q9 (p. 78)*	*Q10 (p. 78)*	*Q11 (p. 78)*	*Q12 (p. 79)*
Q13 (p. 79)	*Q14 (p. 79)*	*Q15 (p. 80)*			

Q1: Which drug is used to reverse the muscle relaxant effects of vecuronium when renal function is normal? (Q844119)

A. Sugammadex

B. Neostigmine

C. Atropine

D. Physostigmine

See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 25-year-old patient undergoing orthopedic surgery who underwent general anesthesia suddenly developed a rise in EtCO2, temperature, and also muscle rigidity. Which of the following drugs leads to such complications? (Q844125)

A. Propofol

B. Nitrous oxide

C. Etomidate

D. Halothane

See Answer in Part B → Q2

@Neet_pg_bot

Q3: Arrange the following agents on the basis of their potency. Nitrous Oxide Halothane Isoflurane Methoxyflurane (Q854960)

A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

B. Methoxyflurane > Isoflurane > Halothane > Nitrous Oxide

C. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

D. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Glycopyrrolate is used as a preanesthetic agent for: (Q856455)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

See Answer in Part B → Q4

@Neet_pg_bot

Q5: What is the most frequent reason for hospital admission following daycare surgery? (Q856576)

A. Respiratory distress

B. Post-surgical pain

C. Postoperative nausea and vomiting

D. Bleeding

See Answer in Part B → Q5

@Neet_pg_bot

Q6: What is the most likely cause of a young patient experiencing desaturation and bilateral basal crepitations shortly after undergoing surgery with general anesthesia using 02, Nitrous oxide, and Desflurane? (Q857032)

A. ARDS

B. Pleural effusion

C. Negative pressure pulmonary oedema

D. Atelectasis

See Answer in Part B → Q6

@Neet_pg_bot

Q7: The following are non depolarizing muscle relaxants except? (Q857063)

A. Pancuronium

B. Rocuronium

C. Suxamethonium

D. Vecuronium

See Answer in Part B → Q7

@Neet_pg_bot

Q8: Which of the following structures are not pierced during epidural anesthesia? (Q857789)

A. Supraspinous ligament

B. Interspinous ligament

C. Ligamentum flavum

D. Dura

See Answer in Part B → Q8

@Neet_pg_bot

Q9: Inhalational induction of choice in children is: (Q857812)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

See Answer in Part B → Q9

@Neet_pg_bot

Q10: Which of the following can be used for induction of anesthesia, maintenance and can be safely used in endotracheal intubation? (Q858069)

A. Halothane

B. Desflurane

C. Sevoflurane

D. Isoflurane

See Answer in Part B → Q10

@Neet_pg_bot

Q11: During recovery from anesthesia, a patient started experiencing hallucinations and vivid dreams. Which inducing agent is most likely responsible? (Q859315)

A. Ketamine

B. Propofol

C. Thiopentone

D. Etomidate

See Answer in Part B → Q11

@Neet_pg_bot

Q12: How do local anesthetics work? (Q859318)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

See Answer in Part B → Q12

@Neet_pg_bot

Q13: Which of the following drugs is used for the reversal of anesthesia? (Q860083)

A. Neostigmine

B. Atropine

C. Glycopyrrolate

D. Midazolam

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 35-year-old male undergoing abdominal surgery under general anesthesia develops sudden generalized muscle rigidity, rapid increase in body temperature, and tachycardia shortly after administration of sevoflurane and succinylcholine. His

end-tidal CO■ is rising despite controlled ventilation. What is the most appropriate immediate treatment? (Q866521)

A. Dantrolene

B. Diazepam

C. Pancuronium

D. Vecuronium

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A55 y/o man is undergoing general anaesthesia for abdominal pain and surgery. Shortly after administration of a non-depolarising neuromuscular blocker, he develops bronchospasm, hypotension and flushing of the face. Which of the following skeletal muscle relaxants is most likely responsible for this reaction? (Q866524)

A. Atracurium

B. Cisatracurium

C. Vecuronium

D. Pancuronium

See Answer in Part B → Q15

@Neet_pg_bot

• [06_Anaesthesia for Co-existing Medical Conditons] 010 Anaesthesia For Special Conditions And Fluid Management

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[06_Anaesthesia for Co-existing Medical Conditons] 010 Anaesthesia For Special Conditions And Fluid Management — Quick Jump

Q1 (p. 81) *Q2 (p. 81)* *Q3 (p. 82)* *Q4 (p. 82)* *Q5 (p. 82)* *Q6 (p. 83)*
Q7 (p. 83) *Q8 (p. 84)* *Q9 (p. 84)* *Q10 (p. 84)* *Q11 (p. 85)* *Q12 (p. 85)*
Q13 (p. 86)

Q1: A 65 y/o male with coronary artery disease (CAD) is scheduled for an elective laparoscopic cholecystectomy. The patient is stable on medications with no recent chest pain or dyspnea. The anesthesiologist selects anaesthetic agents for the patient. Which of the following options is false regarding the choice of agents? (Q846862)

A. Propofol is used in CAD patients as the intravenous anaesthetic agent of choice.

B. Isoflurane is used as an inhalational agent for patients with good myocardial contractility.

C. Vecuronium is used as a muscle relaxant for cardiac patients.

D. Etomidate is used as an intravenous anaesthetic agent.

See Answer in Part B → Q1

@Neet_pg_bot

Q2: Which of the following is the IV induction agent of choice in a patient with decompensated Cirrhosis? (Q846863)

A. Thiopentone

B. Propofol

C. Etomidate

D. Ketamine

See Answer in Part B → Q2

@Neet_pg_bot

Q3: Which of the following anaesthetic agents should be avoided in patients undergoing neurosurgery who are at risk for developing pneumocephalus? (Q846864)

A. Propofol

B. Nitrous Oxide

C. Fentanyl

D. Mannitol

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A pregnant patient with pre-eclampsia is scheduled for a cesarean section. The anaesthesiologist opts for general anaesthesia. Which drug commonly used in general anaesthesia may have a prolonged effect in a patient receiving magnesium sulphate? (Q846865)

A. Bupivacaine

B. Fentanyl

C. Lidocaine

D. Succinylcholine

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 60-year-old obese patient with a history of ischemic heart disease is scheduled for surgery. The anesthesiologist decides to use Propofol for intravenous induction and Desflurane for maintenance. What is a crucial consideration for this anaesthetic management? (Q846866)

A. The need to keep the patient in a supine position during induction.

B. The potential for increased intraocular pressure with Desflurane.

C. The likelihood of respiratory depression with Propofol.

D. The requirement for a ramped position during induction.

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A pediatric anesthesiologist is evaluating the best practice for inducing anaesthesia in a 5-year-old child with a history of asthma. Which of the following is the most appropriate choice for inhalational induction? (Q846867)

A. Isoflurane

B. Sevoflurane

C. Nitrous oxide

D. Halothane

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 70-year-old patient with a history of hypertension is scheduled for cataract surgery under local anaesthesia. Which of the following is true regarding anaesthesia considerations in ocular procedures? (Q846868)

A. The use of ketamine as the induction agent to prevent complications.

B. Atropine is preferred to treat bradycardia due to the oculocardiac reflex.

C. Nitrous oxide is the preferred analgesic agent during vitreoretinal surgeries.

D. Retrobulbar block for anaesthesia is preferred due to its least side effects.

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 35 y/o asthmatic patient is scheduled for a minor surgical procedure. Which induction agent and muscle relaxant combination is safest for this patient? (Q846888)

A. Propofol and Succinylcholine

B. Ketamine and d-tubocurarine

C. Ketamine and Vecuronium

D. Thiopental and Rocuronium

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 50-year-old patient is scheduled for a short elective procedure in a daycare setting. The anesthesiologist needs to ensure rapid induction, short-term muscle relaxation, and quick recovery to facilitate early discharge. Which muscle relaxant would be the most suitable for this scenario? (Q846889)

A. Vecuronium

B. Succinylcholine

C. Mivacurium

D. Pancuronium

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A 70 kg patient is scheduled for elective open-heart surgery that is expected to last over 4 hours. According to fluid replacement guidelines, which of the following is the most appropriate additional fluid replacement rate to compensate for the third space volume loss for this patient? (Q846890)

A. 140 mL/hr

B. 280 mL/hr

C. 560 mL/hr

D. 1000 mL/hr

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 45 y/o male undergoes abdominal surgery and requires fluid replacement. The patient has a history of chronic kidney disease. Which of the following fluids is most appropriate for maintenance during surgery to avoid the risk of hyperchloremic metabolic acidosis? (Q846891)

A. 0.9% Normal Saline

B. Ringer's Lactate

C. 3% NaCl

D. 5% Dextrose in Water

See Answer in Part B → Q11

@Neet_pg_bot

Q12: A 6 y/o child weighs 20 kg and requires maintenance fluid based on the Holliday-Segar formula. What is the correct amount of fluid the child should receive in 24 hours? (Q846892)

A. 1500 mL

B. 1600 mL

C. 1800 mL

D. 2000 mL

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 50 kg patient has been fasting for 6 hours before surgery. If the maintenance fluid rate is 1.2 mL/kg/h, what is the total maintenance fluid requirement? (Q846893)

A. 360 mL

B. 420 mL

C. 500 mL

D. 720 mL

See Answer in Part B → Q13

@Neet_pg_bot

• [06_Anaesthesia for Co-existing Medical Conditons] 011 Previous Year Questions

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[06_Anaesthesia for Co-existing Medical Conditons] 011 Previous Year Questions — Quick Jump

Q1 (p. 87)	*Q2 (p. 87)*	*Q3 (p. 87)*	*Q4 (p. 88)*	*Q5 (p. 88)*	*Q6 (p. 89)*
Q7 (p. 89)	*Q8 (p. 89)*	*Q9 (p. 90)*	*Q10 (p. 90)*	*Q11 (p. 90)*	*Q12 (p. 91)*
Q13 (p. 91)	*Q14 (p. 91)*	*Q15 (p. 92)*	*Q16 (p. 92)*	*Q17 (p. 93)*	*Q18 (p. 93)*
Q19 (p. 93)	*Q20 (p. 94)*	*Q21 (p. 94)*			

Q1: Which of the following drugs is used for the reversal of anesthesia? (Q860083)

A. Neostigmine

B. Atropine

C. Glycopyrrolate

D. Midazolam

See Answer in Part B → Q1

@Neet_pg_bot

Q2: How do local anesthetics work? (Q859318)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

See Answer in Part B → Q2

@Neet_pg_bot

Q3: During recovery from anesthesia, a patient started experiencing hallucinations and vivid dreams. Which inducing agent is most likely responsible? (Q859315)

A. Ketamine

B. Propofol

C. Thiopentone

D. Etomidate

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Glycopyrrolate is used as a preanesthetic agent for: (Q856455)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

See Answer in Part B → Q4

@Neet_pg_bot

Q5: What is the most frequent reason for hospital admission following daycare surgery? (Q856576)

A. Respiratory distress

B. Post-surgical pain

C. Postoperative nausea and vomiting

D. Bleeding

See Answer in Part B → Q5

@Neet_pg_bot

Q6: Which of the following can be used for induction of anesthesia, maintenance and can be safely used in endotracheal intubation? (Q858069)

A. Halothane

B. Desflurane

C. Sevoflurane

D. Isoflurane

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which of the following structures are not pierced during epidural anesthesia? (Q857789)

A. Supraspinous ligament

B. Interspinous ligament

C. Ligamentum flavum

D. Dura

See Answer in Part B → Q7

@Neet_pg_bot

Q8: The following are non depolarizing muscle relaxants except? (Q857063)

A. Pancuronium

B. Rocuronium

C. Suxamethonium

D. Vecuronium

See Answer in Part B → Q8

@Neet_pg_bot

Q9: What is the most likely cause of a young patient experiencing desaturation and bilateral basal crepitations shortly after undergoing surgery with general anesthesia using 02, Nitrous oxide, and Desflurane? (Q857032)

A. ARDS

B. Pleural effusion

C. Negative pressure pulmonary oedema

D. Atelectasis

See Answer in Part B → Q9

@Neet_pg_bot

Q10: Arrange the following agents on the basis of their potency. Nitrous Oxide Halothane Isoflurane Methoxyflurane (Q854960)

A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

B. Methoxyflurane > Isoflurane > Halothane > Nitrous Oxide

C. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

D. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

See Answer in Part B → Q10

@Neet_pg_bot

Q11: Inhalational induction of choice in children is: (Q857812)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

See Answer in Part B → Q11

@Neet_pg_bot

Q12: Which of the following drugs causes adrenal suppression? (Q852833)

A. Thiopental

B. Ketamine

C. Etomidate

D. Propofol

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 25-year-old patient undergoing orthopedic surgery who underwent general anesthesia suddenly developed a rise in EtCO2, temperature, and also muscle rigidity. Which of the following drugs leads to such complications? (Q844125)

A. Propofol

B. Nitrous oxide

C. Etomidate

D. Halothane

See Answer in Part B → Q13

@Neet_pg_bot

Q14: Which drug is used to reverse the muscle relaxant effects of vecuronium when renal function is normal? (Q844119)

A. Sugammadex

B. Neostigmine

C. Atropine

D. Physostigmine

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A55 y/o man is undergoing general anaesthesia for abdominal pain and surgery. Shortly after administration of a non-depolarising neuromuscular blocker, he develops bronchospasm, hypotension and flushing of the face. Which of the following skeletal muscle relaxants is most likely responsible for this reaction? (Q866524)

A. Atracurium

B. Cisatracurium

C. Vecuronium

D. Pancuronium

See Answer in Part B → Q15

@Neet_pg_bot

Q16: A 35-year-old male undergoing abdominal surgery under general anesthesia develops sudden generalized muscle rigidity, rapid increase in body temperature, and tachycardia shortly after administration of sevoflurane and succinylcholine. His end-tidal CO■ is rising despite controlled ventilation. What is the most appropriate immediate treatment? (Q866521)

A. Dantrolene

B. Diazepam

C. Pancuronium

D. Vecuronium

See Answer in Part B → Q16

@Neet_pg_bot

Q17: Which surgery should be avoided in a patient with a fibroma and moderate to severe cardiac disease? (Q859740)

A. Laparoscopic hysterectomy

B. Abdominal hysterectomy

C. Total hysterectomy

D. Subtotal hysterectomy

See Answer in Part B → Q17

@Neet_pg_bot

Q18: Which of the following is contraindicated in patients with acute intermittent porphyria? (Q859720)

A. Thiopentone

B. Propofol

C. Etomidate

D. Ketamine

See Answer in Part B → Q18

@Neet_pg_bot

Q19: Which of the following induction agents is most appropriate for a patient with cardiac disease? (Q857058)

A. Ketamine

B. Etomidate

C. Propofol

D. Thiopentone

See Answer in Part B → Q19

@Neet_pg_bot

Q20: A 35 y/o asthmatic patient is scheduled for a minor surgical procedure. Which induction agent and muscle relaxant combination is safest for this patient? (Q852743)

A. Propofol and Succinylcholine

B. Ketamine and d-tubocurarine

C. Ketamine and Vecuronium

D. Thiopental and Rocuronium

See Answer in Part B → Q20

@Neet_pg_bot

Q21: Which of the following is incorrect regarding thiopentone? (Q852834)

A. It is lipid soluble

B. It achieves maximum concentration in the brain after an IV infusion

C. Redistribution to adipose tissue and muscle is seen

D. Rapid decline in its effect is due to renal excretion

See Answer in Part B → Q21

@Neet_pg_bot

• [07_Monitoring in Anaesthesia] 012 Monitoring During Anaesthesia - I

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[07_Monitoring in Anaesthesia] 012 Monitoring During Anaesthesia - I — Quick Jump

Q1 (p. 96) *Q2 (p. 97)* *Q3 (p. 97)* *Q4 (p. 98)* *Q5 (p. 98)* *Q6 (p. 99)*
Q7 (p. 100) *Q8 (p. 100)* *Q9 (p. 101)* *Q10 (p. 102)* *Q11 (p. 103)*

Q1: Refer to the readings depicted in the image. Which statement is inaccurate based on these readings? (Q846679)

A. 76% is due to shivering

B. 76% is due to Methemoglobinemia

C. 76% is due to Carboxyhemoglobinemia

D. 76% is due to Peripheral Vasoconstriction



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See Answer in Part B → Q1

@Neet_pg_bot

Q2: Which combination of ECG leads is considered the best for diagnosing intraoperative myocardial ischemia? (Q846684)

A. Leads I, II, and III

B. Leads II, V4, and V5

C. Leads V1, V2, and V3

D. Leads aVR, aVL, and aVF

See Answer in Part B → Q2

@Neet_pg_bot

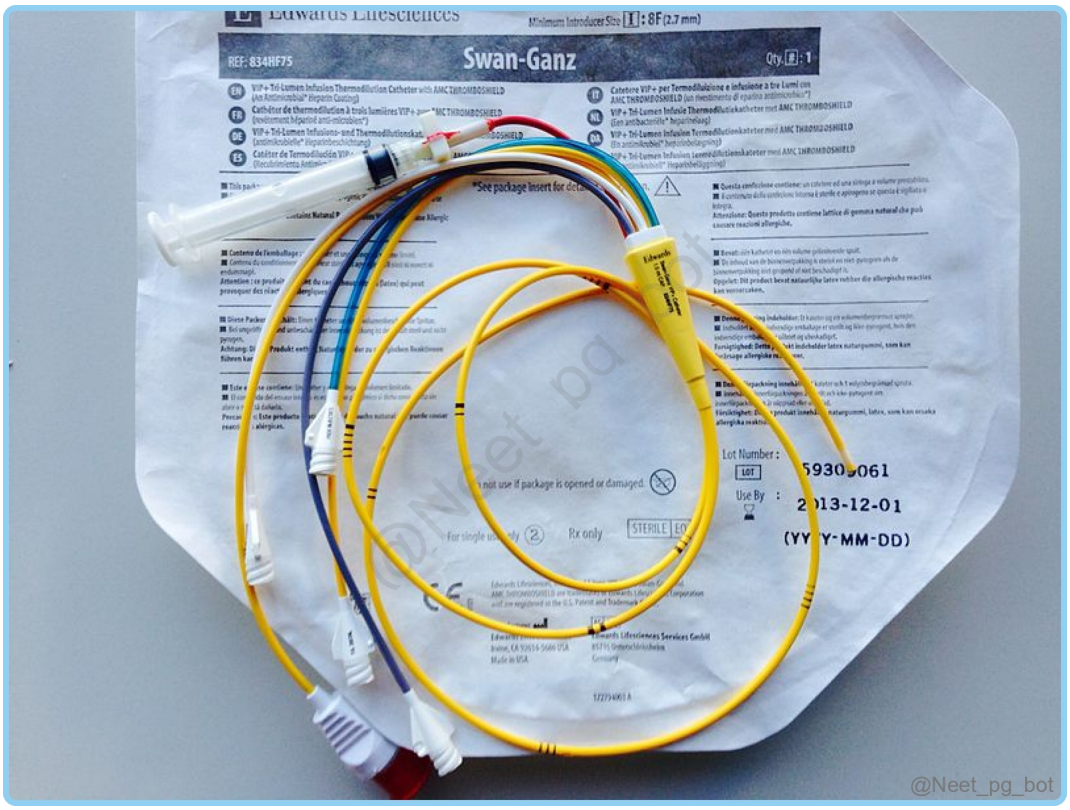
Q3: Which of the following is the correct function of the shown image? (Q846687)

A. Monitor Intracardiac pressures

B. Infuse solutions

C. Measure Temperature

D. All of the above



See Answer in Part B → Q3

@Neet_pg_bot

Q4: Postoperatively, a patient reports feeling pain and recalling specific details from the operating room, during the procedure. Which of the following has no relevance to prevent this issue in the future? (Q846688)

A. Patient state analyzer

B. Visual Evoked Potentials

C. Evan's Score

D. Anxiolytics before anesthesia induction

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following is an incorrect statement for the image below? (Q846689)

A. The higher the value, the lower the awareness

B. Elevated EEG is seen in Ketamine

C. Depressed EEG is seen in COPD

D. Nitrous oxide shows elevated EEG



See Answer in Part B → Q5

@Neet_pg_bot

Q6: Which of the following is the most common nerve-muscle combination tested? (Q846691)

A. Ulnar Nerve & Adductor Pollicis Muscle

B. Ulnar Nerve & Abductor Pollicis Muscle

C. Radial Nerve & Adductor Pollicis Muscle

D. Radial Nerve & Abductor Pollicis Muscle



See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 65-year-old male patient is undergoing major abdominal surgery under general anesthesia. After induction of anesthesia, the patient's CVP is measured at 3 cm H 2 O. The patient’s heart rate is 110/min, blood pressure is 80/50 mmHg. Which of the following is the most appropriate initial management step based on the CVP and clinical findings? (Q846692)

A. Administer vasopressors

B. Administer a fluid bolus

C. Transfuse blood

D. Increase the anesthetic depth

See Answer in Part B → Q7

@Neet_pg_bot

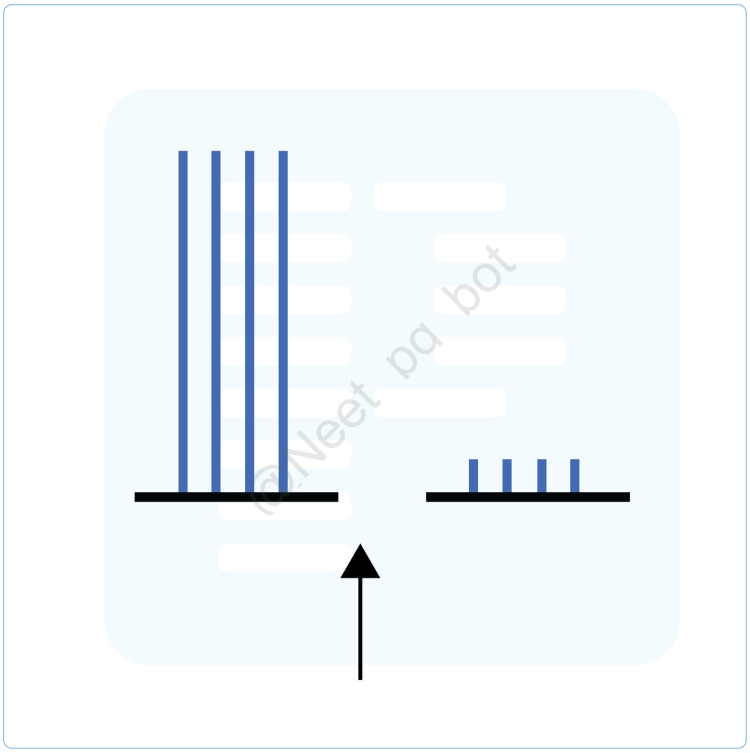
Q8: A 40-year-old female patient is undergoing a thyroidectomy under general anesthesia. A Train of Four (TOF) stimulation is performed to monitor neuromuscular function, the result of which is shown below. Which neuromuscular blocking agent was most likely administered? (Q846694)

A. Succinylcholine

B. Rocuronium

C. Vecuronium

D. Cisatracurium



See Answer in Part B → Q8

@Neet_pg_bot

Q9: Which stimulation pattern is specifically designed to assess deep neuromuscular blockade? (Q846701)

A. Train-of-Four (TOF) stimulation

B. Single-Twitch stimulation

C. Post Tetanic Count (PTC) stimulation

D. Double-Burst stimulation (DBS)

See Answer in Part B → Q9

@Neet_pg_bot

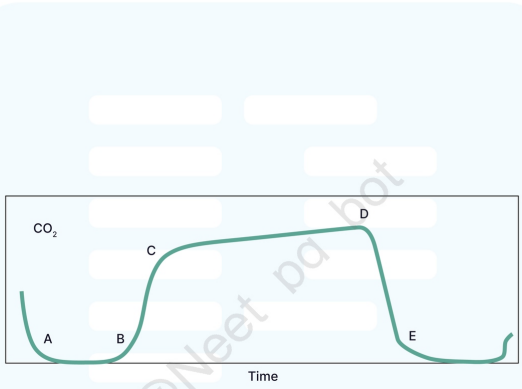
Q10: Which of the following is incorrect about the given image? (Q846702)

A. D represents the best reflection of the alveolar CO2

B. B to C represents CO2 of alveoli mixing with upper airway

C. A to B represents Dead space ventilation

D. E is the value seen on the monitor



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See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 62-year-old male with asthma presents to the emergency department with worsening shortness of breath and wheezing. He is placed on supplemental oxygen and bronchodilators. What is the most likely Capnographic waveform for this patient? (Q846703)

See Answer in Part B → Q11

@Neet_pg_bot

• [07_Monitoring in Anaesthesia] 013 Previous Year Questions

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[07_Monitoring in Anaesthesia] 013 Previous Year Questions — Quick Jump

Q1 (p. 104) *Q2 (p. 104)* *Q3 (p. 105)* *Q4 (p. 106)* *Q5 (p. 106)* *Q6 (p. 107)*

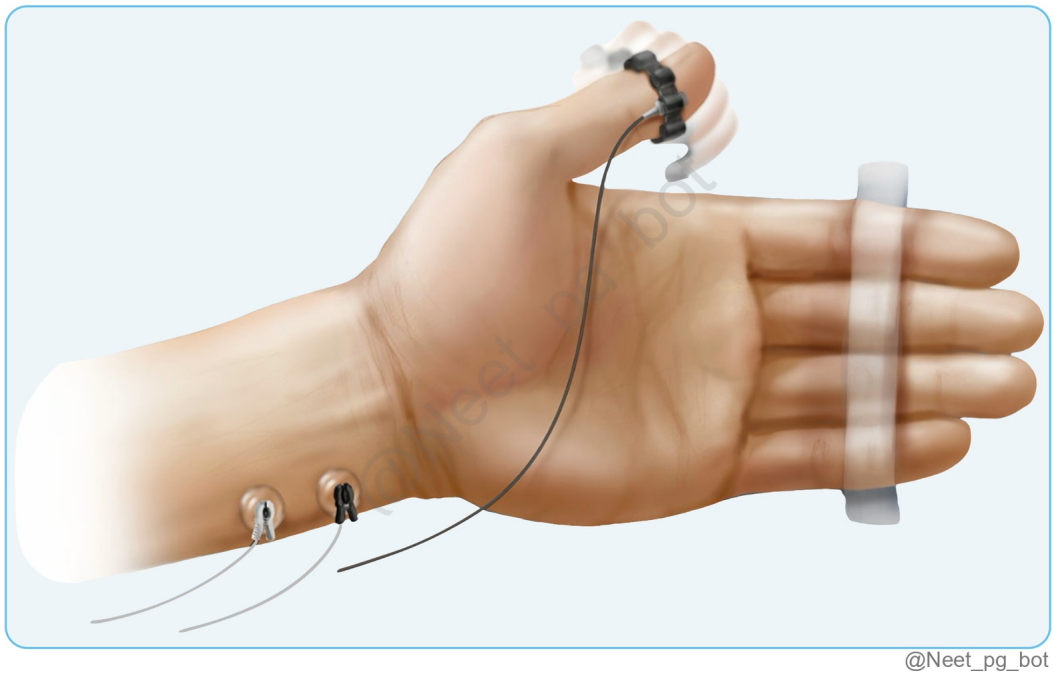
Q1: During general anesthesia, which nerve is commonly monitored using a nerve stimulator to assess neuromuscular blockade? (Q866917)

A. Radial nerve

B. Ulnar nerve

C. Median nerve

D. Tibial nerve



See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 60-year-old male patient is undergoing laparoscopic cholecystectomy. During the surgery, a sudden decrease in etCO2 to 8 mm Hg was observed. The patient's SpO2 was 90% and peak airway pressure was 18 mm Hg. His blood pressure also dropped to 80/50 mm Hg. Which of the following is the most probable diagnosis? (Q857319)

A. Pneumothorax

B. CO 2 embolism

C. Endobronchial intubation

D. Bronchospasm

See Answer in Part B → Q2

@Neet_pg_bot

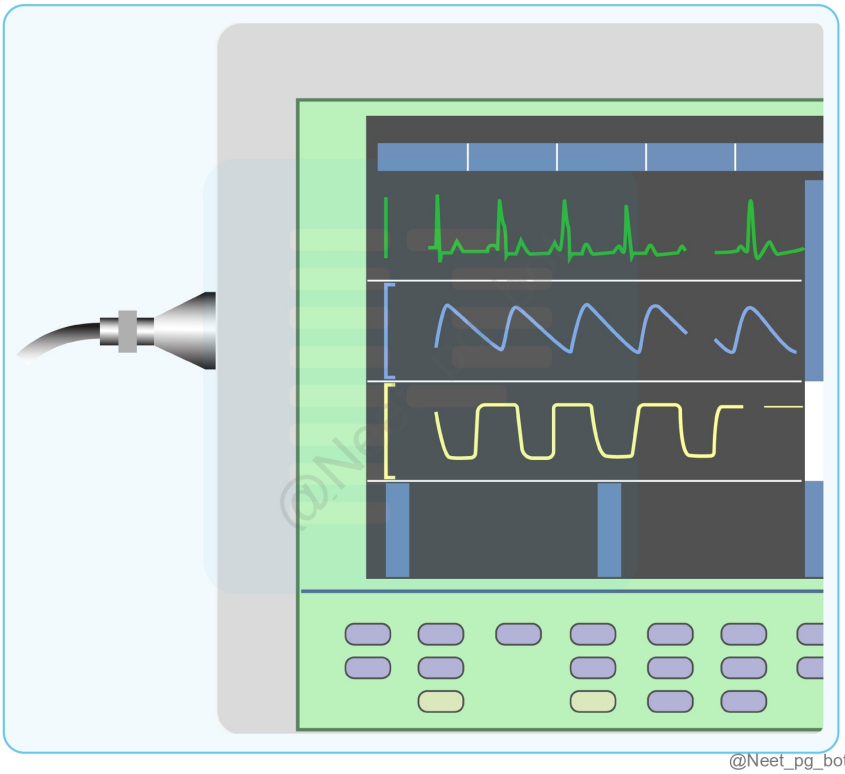
Q3: You are in the operating room and notice the tracing in yellow colour on this device. What does it indicate? (Q858062)

A. Capnography

B. Airway pressure

C. O2 pressure in inhaled air

D. O2 pressure in exhaled air



See Answer in Part B → Q3

@Neet_pg_bot

Q4: What is the frequency of tetanic stimulation used in neuromuscular monitoring? (Q856581)

A. 0.2 Hz

B. 2 Hz

C. 20 Hz

D. 50 Hz

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following methods cannot be used to determine cardiac output? (Q856772)

A. Thermal dilution technique

B. Capnography

C. Esophageal doppler

D. Echocardiography

See Answer in Part B → Q5

@Neet_pg_bot

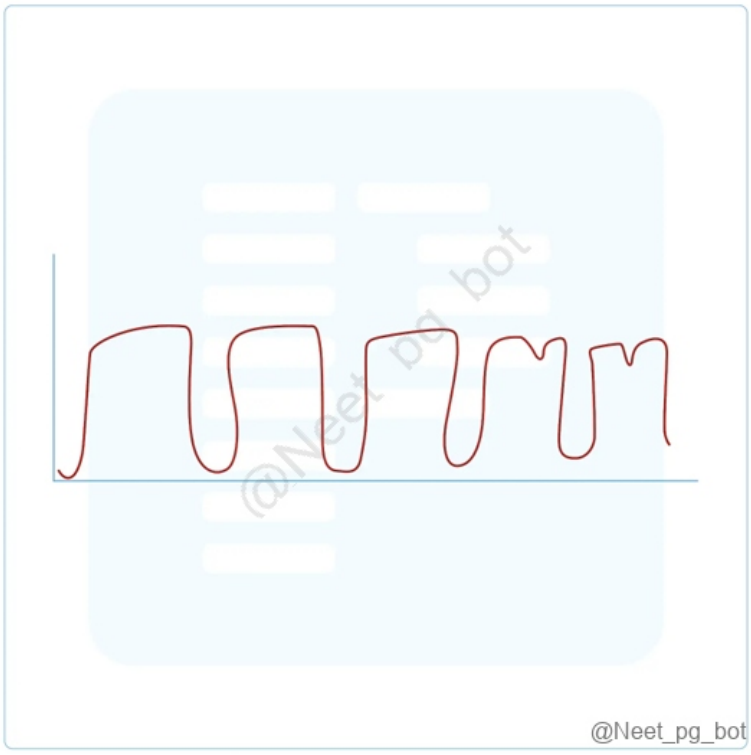
Q6: What could be the probable reason for the observed result in the capnograph of a patient who is intubated and undergoing controlled ventilation? (Q854893)

A. Esophageal intubation

B. Inspiration with cardiac oscillations

C. Bronchospasm

D. Spontaneous respiratory effort



See Answer in Part B → Q6

@Neet_pg_bot

• [08_Cardiopulmonary Cerebral Resuscitation] 014 Cpcr

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[08_Cardiopulmonary Cerebral Resuscitation] 014 Cpcr — Quick Jump

Q1 (p. 109) *Q2 (p. 109)* *Q3 (p. 110)* *Q4 (p. 110)* *Q5 (p. 110)* *Q6 (p. 111)*
Q7 (p. 111) *Q8 (p. 112)* *Q9 (p. 112)* *Q10 (p. 112)* *Q11 (p. 113)* *Q12 (p. 114)*
Q13 (p. 115) *Q14 (p. 115)* *Q15 (p. 116)*

Q1: A 30-year-old man collapses and is unresponsive. After tapping his shoulders and getting no response, what is your next step? (Q846894)

A. Check his pulse

B. Start high-quality CPR

C. Start rescue breaths

D. Shout for help

See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 30-year-old man is found unconscious after a motorcycle accident. There are no signs of external bleeding, but you suspect a possible head or neck injury. You need to open his airway to check for breathing. What is the preferred method for opening the airway in this situation? (Q847267)

A. Head tilt-chin lift

B. Jaw thrust

C. Head tilt-neck lift

D. Avoid opening the airway

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A 55-year-old man collapses at a shopping mall, and bystanders begin performing CPR. An automated external defibrillator (AED) is brought to the scene. After applying the pads, the AED begins analyzing the heart rhythm. You are assisting with the resuscitation. What action should you take during the AED's analysis? (Q847268)

A. Check the pulse.

B. Continue chest compressions.

C. Give rescue breaths only.

D. Stand clear of the victim.

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 60-year-old female is brought to emergency after being found unresponsive at home. Cardiopulmonary resuscitation (CPR) is initiated, and she is found to be in asystole. After several minutes of resuscitation efforts, her rhythm converts to ventricular fibrillation. Which of the following is most likely associated with improved survival in this case? (Q847269)

A. Defibrillation after the conversion to a shockable rhythm

B. Administration of high-dose epinephrine

C. Immediate initiation of therapeutic hypothermia

D. Continuous chest compressions without defibrillation

See Answer in Part B → Q4

@Neet_pg_bot

Q5: In pediatric Basic Life Support (BLS), which of the following is the most recent modification recommended by the American Heart Association (AHA) to improve resuscitation outcomes in children? (Q847270)

A. Starting with Airway, Breathing, Chest Compressions

B. Pulse check for 30 seconds before initiating CPR

C. Delivering chest compressions at a depth of 1 cm for infants

D. Shifting the resuscitation sequence to Chest Compressions, Airway, Breathing

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 55-year-old male is found unresponsive and without a pulse. Emergency responders are activated, and advanced cardiac life support (ACLS) protocols are initiated. Which of the following steps should be prioritized immediately after confirming cardiac arrest? (Q847271)

A. Administer epinephrine (1 mg every 3-5 minutes)

B. Ensure proper airway management using bag-mask ventilation

C. Initiate high-quality chest compressions at a rate of 100-120 per minute

D. Deploy an Automated External Defibrillator (AED)

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A healthcare provider is managing a patient with cardiac arrest due to pulseless ventricular tachycardia. Which of the following is a key advantage of using manual defibrillators in this scenario? (Q847272)

A. They are easier to operate than Automated External Defibrillators (AEDs).

B. Manual defibrillators can allow the users to adjust energy levels based on their clinical judgement.

C. They can be used by bystanders.

D. They are used independently, without ECG monitoring.

See Answer in Part B → Q7

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Q8: A 60-year-old man presents to the emergency department after being resuscitated from cardiac arrest. The medical team suspects a reversible cause and starts assessing possible factors. Which of the following pairs do not represent causes to be prioritized for immediate treatment based on their roles in causing cardiac arrest? (Q847273)

A. Hypovolemia and Tension Pneumothorax

B. Hyperkalemia and Acidosis

C. Drug Overdose and Cardiac Tamponade

D. Hyperglycemia and alkalosis

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 60-year-old male patient presents to the emergency department with palpitations and shortness of breath. Upon assessment, he is found to have narrow-complex tachycardia at a rate of 180 beats per minute. He reports no chest pain or hypotension. What is the most appropriate initial management for this stable patient? (Q847274)

A. Synchronized cardioversion

B. Administration of amiodarone

C. Administration of adenosine

D. Observation and reassurance

See Answer in Part B → Q9

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Q10: A 68-year-old man presents to the emergency department with palpitations, dizziness, and chest discomfort. His vital signs are blood pressure 75/50 mmHg, heart

rate 190 beats per minute, and oxygen saturation 94% on room air. He appears pale and diaphoretic. ECG is shown below. What is the most appropriate next step in the management of this patient? {{caption_text}} (Q847275)

A. Administer IV amiodarone 150 mg over 10 minutes

B. Perform immediate unsynchronized defibrillation

C. Perform immediate synchronized cardioversion

D. Administer intravenous adenosine 6 mg



See Answer in Part B → Q10

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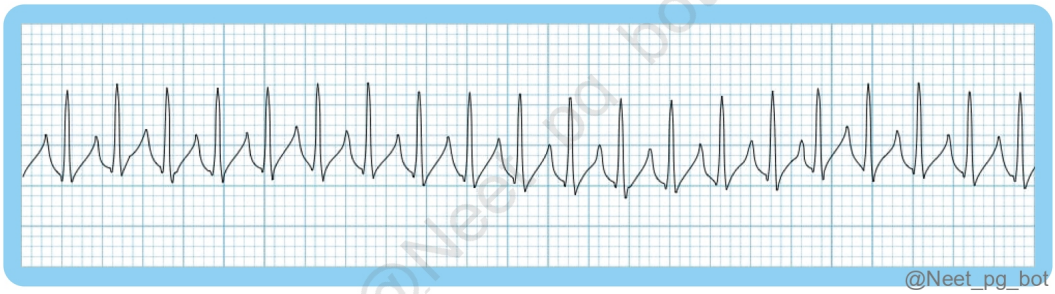
Q11: A 35-year-old woman presents to the emergency department with palpitations that started suddenly 30 minutes ago. She reports feeling lightheaded but denies chest pain or shortness of breath. Her vital signs show a heart rate of 180 beats per minute, blood pressure of 120/80 mmHg, and oxygen saturation of 96% on room air. ECG is shown below. What is the most appropriate initial management? {{caption_text}} (Q847276)

A. Immediate synchronized cardioversion

B. Intravenous adenosine 6 mg push

C. Intravenous amiodarone 150 mg over 10 minutes

D. Perform carotid sinus massage



See Answer in Part B → Q11

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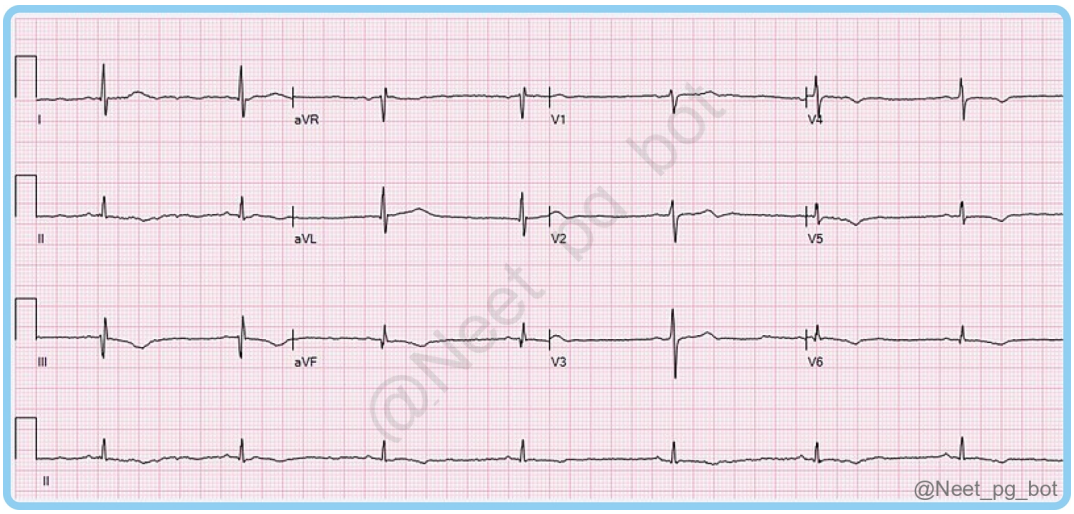
Q12: A 65-year-old man with a history of coronary artery disease and heart failure presents to the emergency department after experiencing lightheadedness and near syncope. On examination, he is alert but pale, with a heart rate of 43 beats per minute and a blood pressure of 80/50 mmHg. The ECG is shown below. He remains hypotensive and symptomatic despite the IV administration of a maximum dose of atropine. What is the most appropriate next step in the management of this patient? {{caption_text}} (Q847277)

A. Epinephrine IV bolus

B. Amiodarone IV infusion

C. Dopamine IV infusion

D. Digoxin IV bolus



See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 58-year-old man is found unresponsive and pulseless at home. Paramedics initiate CPR and provide bag-mask ventilation. Upon arrival at the emergency department, the patient is intubated. IV access is delayed due to difficult peripheral access, and intraosseous access is not immediately available. The decision is made to administer drugs via the endotracheal tube. Which of the following drugs is appropriate for endotracheal administration during cardiac arrest? (Q847278)

A. Amiodarone

B. Epinephrine

C. Adenosine

D. Atropine

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 70-year-old man with a history of ischemic cardiomyopathy (ejection fraction 25%) and a previous history of myocardial infarction presents to the emergency department with dizziness, palpitations, and mild breathlessness. On arrival, his heart rate is 130 beats per minute, and his blood pressure is 100/64 mmHg. His ECG is

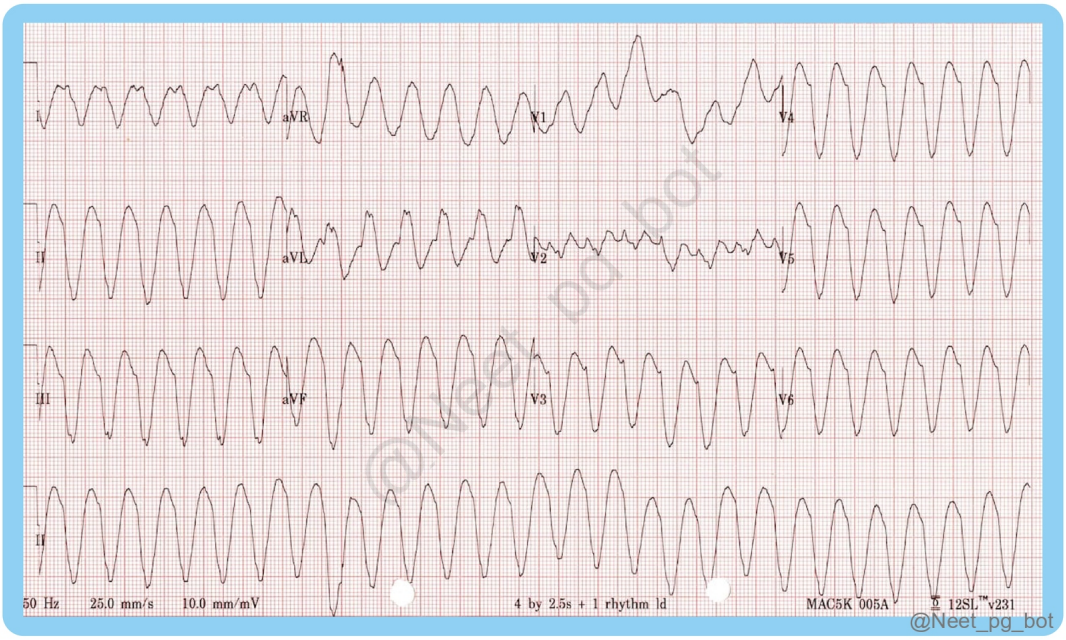
shown below. Which among the following options is the most appropriate in the management of this patient? {{caption_text}} (Q847279)

A. Intravenous amiodarone 150 mg over 10 minutes

B. Adenosine 12 mg IV push

C. Intravenous lidocaine 1 mg/kg

D. Intravenous magnesium sulfate 2 g



See Answer in Part B → Q14

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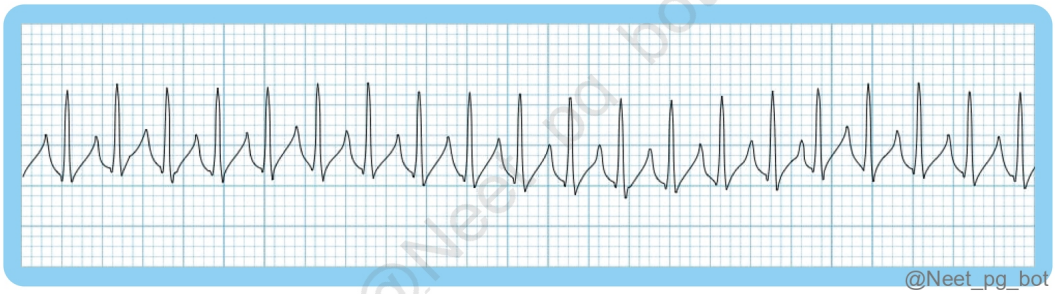
Q15: A 54-year-old woman presents to the emergency department with palpitations, dizziness, and mild shortness of breath. Her vital signs are heart rate of 150 bpm, blood pressure of 124/80 mmHg, and oxygen saturation of 95% on room air. The rhythm strip of the ECG is shown below. Vagal maneuvers are attempted without success. You decide to administer adenosine. Which of the following is the most appropriate initial dose of adenosine, and what is the mechanism of its action? {{caption_text}} (Q847280)

A. 6 mg IV push, briefly depresses sinus node and AV node conduction

B. 12 mg IV push, briefly depresses sinus node and AV node conduction

C. 6 mg IV push, increases AV node conduction and depresses sinus node

D. 12 mg IV push, decreases AV node conduction and increases sinus node rate



See Answer in Part B → Q15

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• [08_Cardiopulmonary Cerebral Resuscitation] 015 Previous Year Questions

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[08_Cardiopulmonary Cerebral Resuscitation] 015 Previous Year Questions — Quick Jump

Q1 (p. 118)	*Q2 (p. 119)*	*Q3 (p. 119)*	*Q4 (p. 119)*	*Q5 (p. 120)*	*Q6 (p. 121)*
Q7 (p. 121)	*Q8 (p. 121)*	*Q9 (p. 122)*	*Q10 (p. 122)*	*Q11 (p. 123)*	*Q12 (p. 123)*
Q13 (p. 124)	*Q14 (p. 124)*	*Q15 (p. 124)*	*Q16 (p. 125)*	*Q17 (p. 126)*	*Q18 (p. 126)*
Q19 (p. 127)	*Q20 (p. 127)*	*Q21 (p. 128)*	*Q22 (p. 129)*	*Q23 (p. 129)*	

Q1: What is the specific action being demonstrated in the provided image? (Q856034)

A. Head tilt, chin lift

B. Jaw thrust

C. Head extension

D. In line manual stabilisation



See Answer in Part B → Q1

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Q2: In an emergency setting you encounter three patients simultaneously. Which of the following should you attend first? (Q879114)

A. 40 years old unconscious noisy breathing

B. 25 years old woman rapidly breathing and sweating

C. 40 year old male conscious with trousers soaked in blood

D. Girl crying loudly and inconsolably

See Answer in Part B → Q2

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Q3: A patient has a road traffic accident and is now bleeding profusely. He is hypotensive and needs large volume replacement with IV fluids. What cannula gauge will you use in this patient? (Q859308)

A. 14 G

B. 13 G

C. 16 G

D. 18 G

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Which of the following is required for the cannulation of a newborn? 24G needle 16G needle 5-mL syringe Adhesive tape Normal saline (Q855260)

A. 1, 3, 4, 5

B. 2, 3, 4, 5

C. 2, 4

D. 1, 4

See Answer in Part B → Q4

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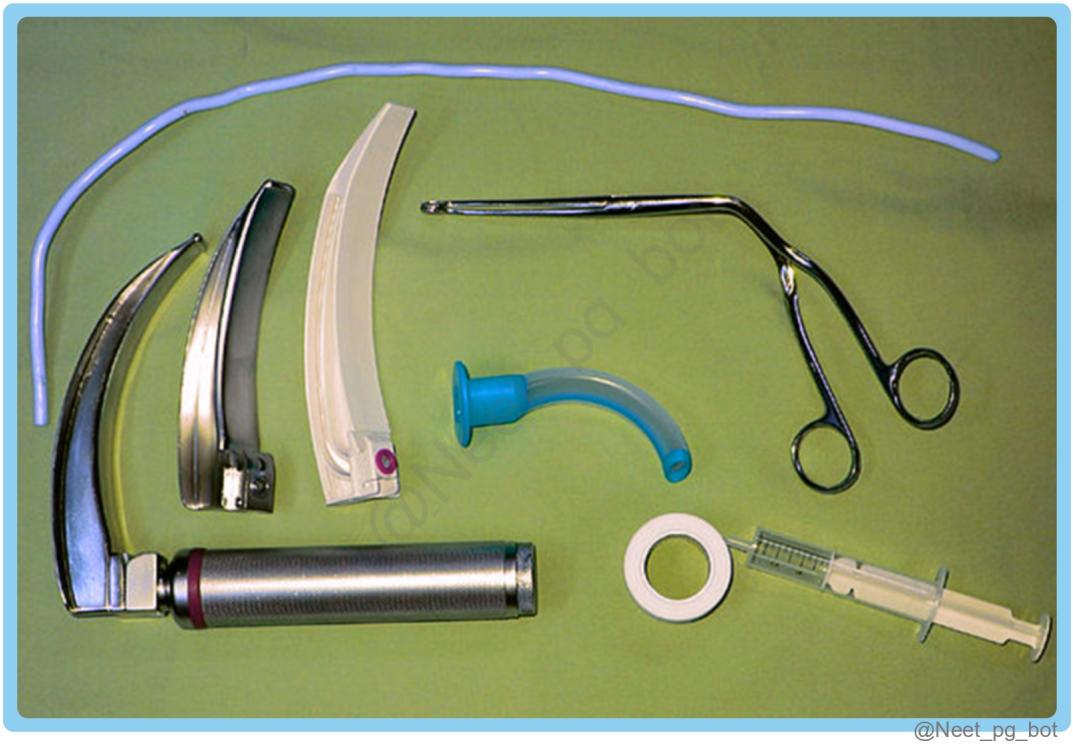
Q5: These instruments are utilized for: (Q856462)

A. Central line insertion

B. Arterial line insertion

C. Airway management

D. Umbilical catheter insertion



See Answer in Part B → Q5

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Q6: An 18-year-old boy is rushed to the emergency room after choking on a bone while eating. He is conscious and responsive, but unable to speak. What is the next appropriate step in management? (Q857564)

A. Bag and mask ventilation

B. Endoscopic removal

C. Deliver 5 back slaps and 5 chest compressions

D. Perform Heimlich maneuver

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which statement in rapid sequence intubation is incorrect ? (Q855266)

A. Preoxygenation with 100% oxygen for 3 minutes is done

B. High–volume, low-pressure cuff is used

C. It is the first choice of treatment in cardiac arrest patients

D. The induction agent and muscle relaxant are given simultaneously

See Answer in Part B → Q7

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Q8: After a building collapse, a patient presents with airway obstruction and mouth filled with concrete debris. BP is 90/60 mmHg, HR 105/min. The given procedure is performed (image shown). Which of the following statements regarding this procedure is true? (Q866525)

A. It provides adequate ventilation for up to 6 hours

B. It must be followed by a formal tracheostomy

C. It allows for removal of large foreign bodies from the airway

D. It can be safely used for prolonged airway management without further intervention



See Answer in Part B → Q8

@Neet_pg_bot

Q9: A patient undergoing surgery develops sudden deranged vitals following a failed attempt at subclavian vein catheterization. On examination, the trachea is shifted to one side and breath sounds are absent on the same side. What is the most likely diagnosis? (Q866921)

A. Bronchospasm

B. Tension pneumothorax

C. Pulmonary embolism

D. Aspiration pneumonitis

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A patient under anesthesia is found to be in a “cannot intubate, cannot ventilate” (CICV) scenario. What is the next best step in management? (Q866919)

A. Insert nasopharyngeal airway

B. Perform a cricothyroidotomy

C. Insert a laryngeal mask airway

D. Perform a tracheostomy

See Answer in Part B → Q10

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Q11: Which of the following can be considered effective CPR? 1. Respiratory rate: 20-24 breaths per minute 2. Chest compressions: 100-120/min 3. Allow complete chest recoil 4. 5-6cm deep compression (Q856466)

A. 1,2,3 and 4

B. 1,2 and 4

C. 2,3 and 4

D. 1 and 2 only

See Answer in Part B → Q11

@Neet_pg_bot

Q12: While taking your morning stroll in the park, you come across an individual who is unconscious and lying on the ground. What would be the most appropriate course of action to take next from the given choices? (Q856776)

A. Check carotid pulse, start CPR, and call for help; Defibrillate if no pulse

B. Call for help, check pulse, do CPR, defibrillate if no pulse

C. Observe

D. Ignore and continue to walk

See Answer in Part B → Q12

@Neet_pg_bot

Q13: Which of the following must be avoided in post cardiac arrest resuscitation care? (Q852835)

A. Maintain MAP over 65

B. Maintain SpO2 above 94%

C. Revascularisation procedure if patient develops ST elevation post resuscitation

D. Bring the body temperature down to below 32 degrees, therapeutic hypothermia if unresponsive

See Answer in Part B → Q13

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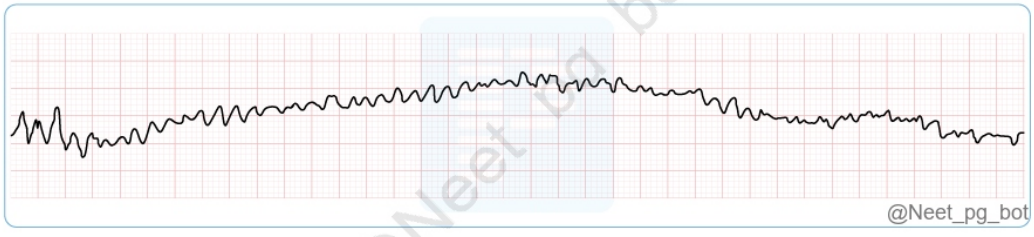
Q14: An unresponsive patient in ambulance on attachment of monitors showed following rhythm. What should be done immediately? (Q857061)

A. Check for pulse and breathing

B. Chest compressions and defibrillation

C. Put the patient in left lateral position

D. Cardioversion



See Answer in Part B → Q14

@Neet_pg_bot

Q15: When should the indicated position be used during resuscitation? (Q855615)

A. Unconsciousness with pulse absent and breathing absent

B. Unconsciousness with pulse present and breathing absent

C. Unconsciousness with pulse and breathing present

D. Unconsciousness with pulse absent and breathing present



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See Answer in Part B → Q15

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Q16: Please identify the manoeuvre being executed in the image provided. (Q855612)

A. Head tilt, chin lift

B. Jaw thrust

C. Head extension

D. In-line manual stabilization



See Answer in Part B → Q16

@Neet_pg_bot

Q17: In a 60-year-old patient who has just experienced a cardiac arrest, which of the following interventions is not a part of the Advanced Cardiovascular Life Support (ACLS) protocol? (Q820226)

A. Amiodarone

B. Defibrillation

C. Adrenaline

D. Soda Bicarbonate

See Answer in Part B → Q17

@Neet_pg_bot

Q18: Which of the following statements given below is incorrect regarding CPR in adults? (Q857324)

A. Depth of chest compression up to 5-6 cm

B. Allow adequate chest recoil

C. Ventilation: 22-25 breaths/min

D. Chest compression rate 100-120/min

See Answer in Part B → Q18

@Neet_pg_bot

Q19: Which of the following is not an ideal step for effective CPR in adults? (Q839910)

A. 100 -120 compressions per minute

B. Depth of compression 2-3 cm

C. Compression to ventilation ratio - 30:2

D. Allow complete recoil in between compressions

See Answer in Part B → Q19

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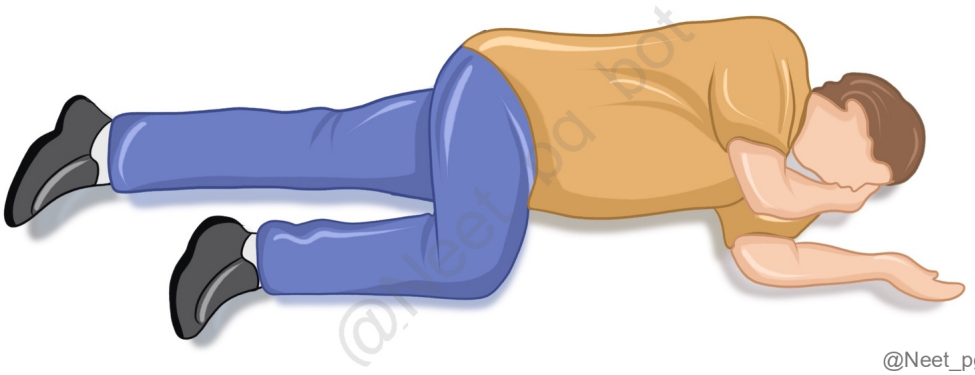
Q20: When do you put a victim in the following position? (Q844128)

A. Conscious patient with pulse & breathing present.

B. Unconscious patient with pulse & breathing present.

C. Unconscious patient with pulse present but no breathing.

D. Unconscious patient without pulse but breathing present.



See Answer in Part B → Q20

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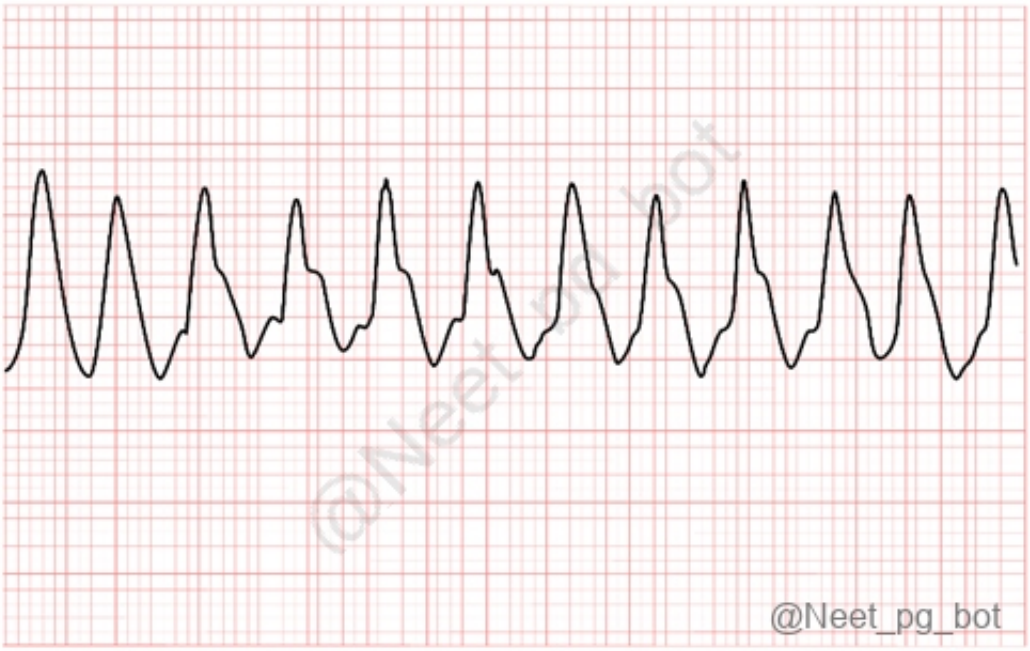
Q21: A patient presents with no pulse, and the ECG shows the following rhythm. What is the next appropriate step? (Q844103)

A. Defibrillate, check pulse and then perform CPR

B. Cardioversion

C. Defibrillate, perform CPR, and then check the pulse

D. Administer epinephrine



See Answer in Part B → Q21

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Q22: According to the American Heart Association (AHA), what is the 6th link added to the chain of survival? (Q852507)

A. Rapid defibrillation

B. Recovery and rehabilitation

C. High-quality CPR

D. Advanced airway management

See Answer in Part B → Q22

@Neet_pg_bot

Q23: What should be done after immediate defibrillation is performed on a young male patient who was brought to the emergency department unconscious after collapsing at a railway station, with no pulse felt and a monitor showing ventricular fibrillation? (Q793442)

A. Check for a pulse

B. Resume chest compressions

C. Epinephrine 1 mg IV

D. Amiodarone 300 mg IV bolus

See Answer in Part B → Q23

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• [09_Anaesthesia Machine _ Workstation] 016 Anaesthesia Machine

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[09_Anaesthesia Machine _ Workstation] 016 Anaesthesia Machine — Quick Jump

Q1 (p. 130)	*Q2 (p. 130)*	*Q3 (p. 131)*	*Q4 (p. 131)*	*Q5 (p. 132)*	*Q6 (p. 132)*
Q7 (p. 133)	*Q8 (p. 133)*	*Q9 (p. 133)*	*Q10 (p. 134)*	*Q11 (p. 134)*	*Q12 (p. 135)*
Q13 (p. 136)	*Q14 (p. 136)*	*Q15 (p. 137)*	*Q16 (p. 140)*	*Q17 (p. 140)*	*Q18 (p. 141)*

Q1: Schimmelbusch mask is an equipment used in the past to deliver liquid volatile anesthetics. What kind of breathing system is this? (Q846851)

A. Open

B. Closed

C. Semi -open

D. Semi-closed

See Answer in Part B → Q1

@Neet_pg_bot

Q2: While performing panretinal photocoagulation for diabetic retinopathy in an elderly male patient, the patient's airway caught sudden fire. All of the following steps can be done in the immediate management of this airway fire except: (Q846861)

A. Continue ventilation

B. Flood area with 0.9% saline

C. Stop using laser

D. Remove the tube and extinguish in water

See Answer in Part B → Q2

@Neet_pg_bot

Q3: All of the following are components of Baralyme except? (Q846858)

A. Ca(OH) 2

B. NaOH

C. KOH

D. Ba(OH) 2

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 40-year-old male was undergoing laparoscopic cholecystectomy, in the middle of surgery, he developed tachypnoea with increased sweating, HR - 120 bpm, SpO 2 - 92%. An anesthetist observed the change and promptly responded by adding a CO 2 absorber substance as shown in the image below, following which the signs and symptoms reverted back to normal limits. Which among the following inhalational agents is completely safe to be administered with the added substance? {{caption_text}} (Q846857)

A. Desflurane

B. Halothane

C. Sevoflurane

D. Trilene



See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following is the CO 2 absorption capacity of soda lime? (Q846856)

A. 50L CO 2 per 100 gram

B. 10L CO 2 per 100 gram

C. 36L CO 2 per 100 gram

D. 23L CO 2 per 100 gram

See Answer in Part B → Q5

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Q6: How is a circle system made into a fully closed system? (Q846855)

A. APL valve is opened

B. APL valve is closed

C. APL valve is closed and the fresh gas flow is set equal to the uptake by the patient

D. None of the above

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which of the following is a standard breathing system for pediatric patients up to 25 kg? (Q846854)

A. Mapleson A

B. Mapleson B

C. Mapleson C

D. Mapleson F

See Answer in Part B → Q7

@Neet_pg_bot

Q8: Which of the following is not a feature of the Bain system? (Q846853)

A. Fresh gas flow at patient end

B. Valve at at machine end

C. Bag at the machine end

D. None of the above

See Answer in Part B → Q8

@Neet_pg_bot

Q9: Which of the following statements is false regarding Magill breathing system? (Q846852)

A. Efficient for spontaneous ventilation

B. Inefficient for controlled ventilation

C. Semi-open system

D. Suitable for pediatrics

See Answer in Part B → Q9

@Neet_pg_bot

Q10: Which of the following safety features of Boyle's anesthesia machine reduces the supply of other gases in response to a drop in oxygen pressure? (Q846816)

A. Second stage pressure regulator

B. Oxygen supply failure alarm

C. Oxygen failure safety device

D. All of the above

See Answer in Part B → Q10

@Neet_pg_bot

Q11: You notice the following vaporizer being used in OT. What is the likely anesthetic agent that could be used here? {{caption_text}} (Q846850)

A. Desflurane

B. Isoflurane

C. Sevoflurane

D. Halothane



See Answer in Part B → Q11

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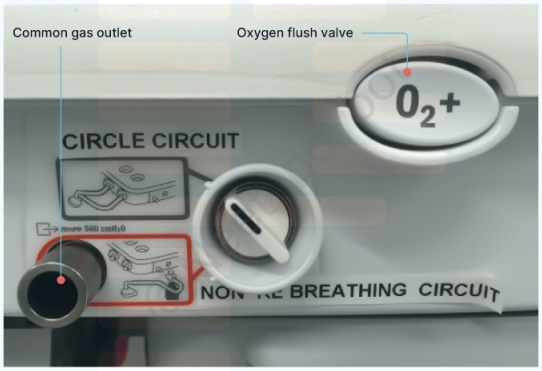
Q12: A 60 year old female patient posted for some surgery under general anesthesia, was maintaining saturation but suddenly got desaturated. Now the clinician decided to supply oxygen via a device shown below. What is the ideal pressure to be maintained for delivering O2 in this scenario? (Q846849)

A. 2000 psi

B. 400 psi

C. 40 psi

D. 20 psi



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See Answer in Part B → Q12

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Q13: Choose the correct set of true statements regarding the central supply line and Diameter index safety system (DISS) 1) DISS is used for preventing wrong attachment of cylinder to machine 2) White color hoses are used for Oxygen 3) Part of low pressure system 4) Ideal pressure of gasses is fixed at 45psi (Q846848)

A. 1, 2

B. 2, 4

C. 1, 3

D. 2, 3

See Answer in Part B → Q13

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Q14: Mark the correct option regarding the scale reading of circular and cylindrical bobbin in the following device {{caption_text}} (Q846847)

A. Circular - from top ; cylindrical - parallel with the equator

B. Circular - parallel with the equator ; cylindrical - from top

C. Both to be read from top

D. Both to be read from side, parallel with the equator



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See Answer in Part B → Q14

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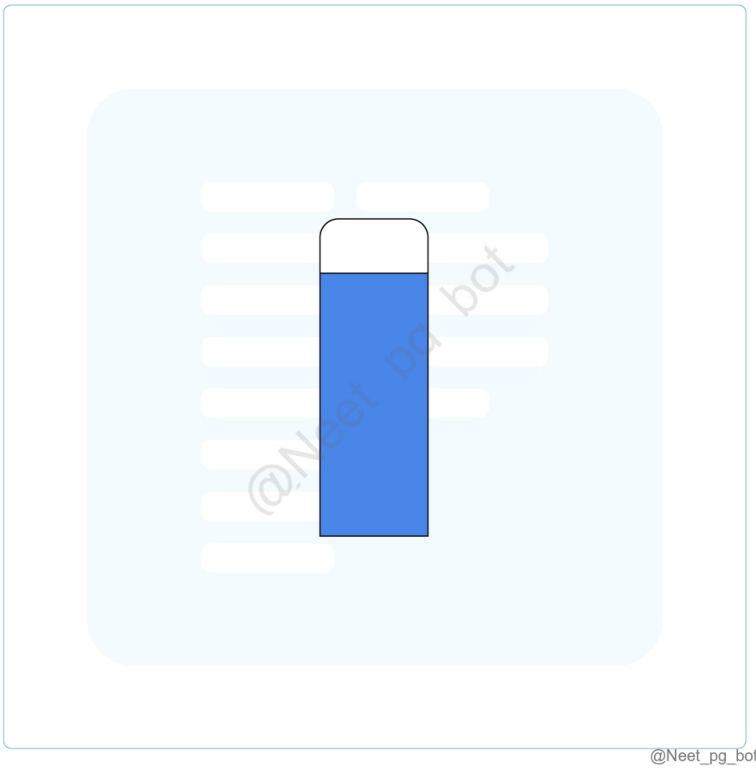
Q15: Match Column A with Column B appropriately: Column A (Cylinder color) Column B (Pin index) 1) a) 1, 5 2) b) 2, 5 3) c) 3, 5 4) d) 1, 6 e) 7 (Q846846)

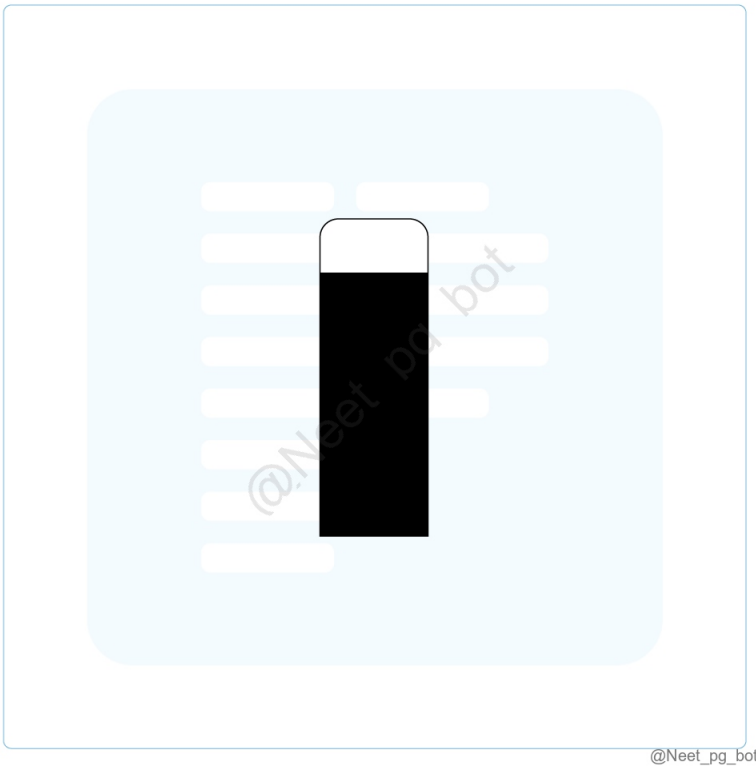
A. 1-c; 2-b; 3-d; 4-e

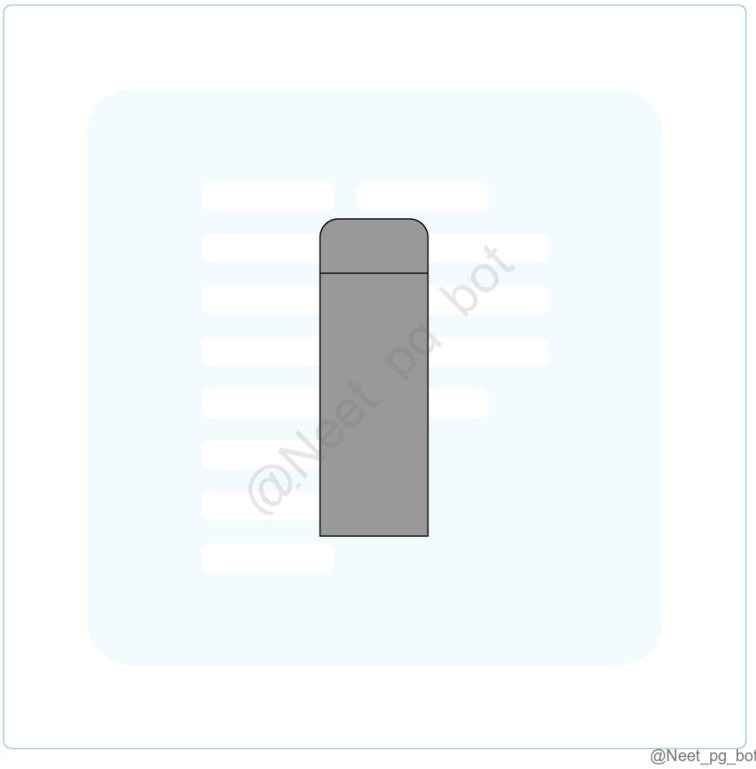
B. 1-c; 2-a; 3-d; 4-e

C. 1-e; 2-b; 3-d; 4-c

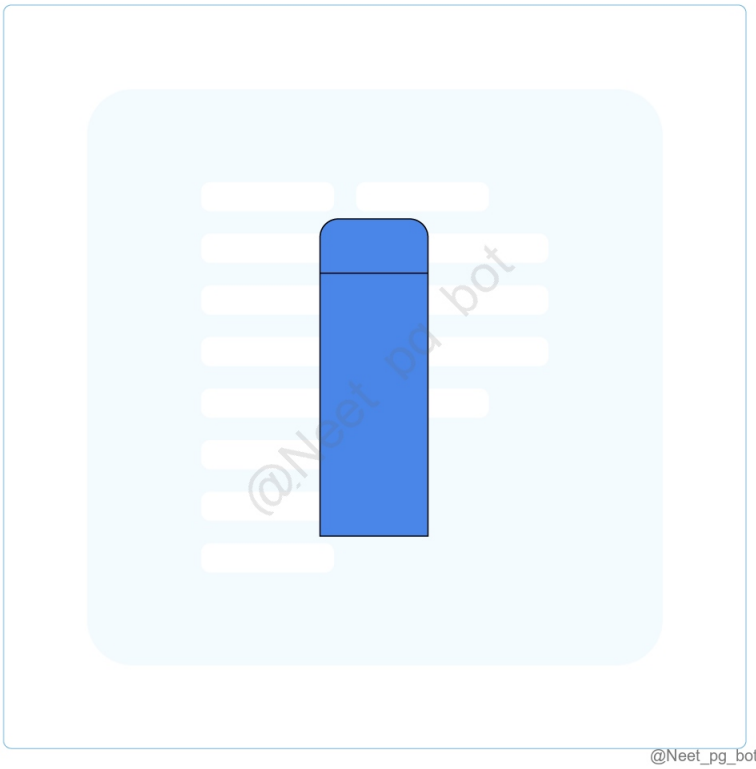
D. 1-e; 2-a; 3-d; 4-c


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See Answer in Part B → Q15

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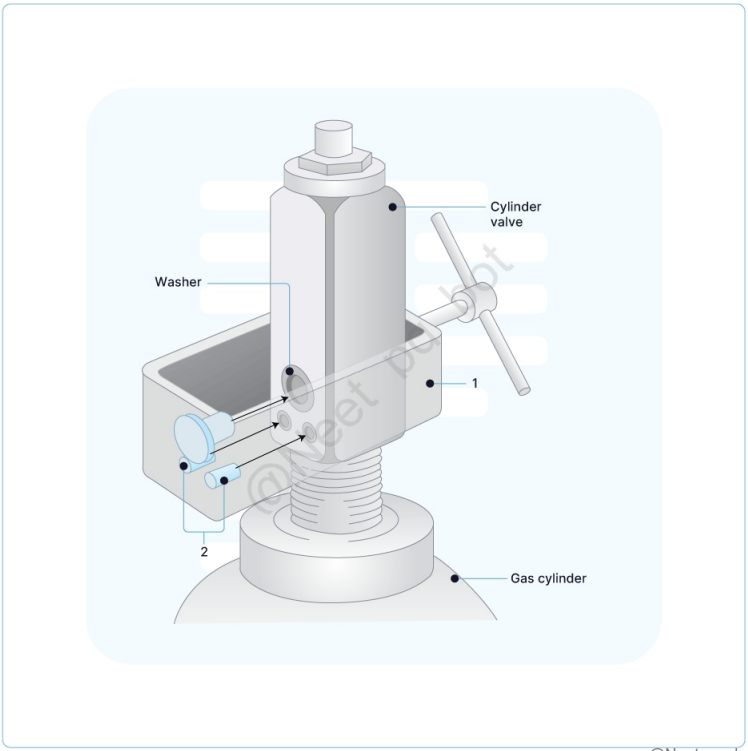
Q16: Label the following image appropriately (Q846845)

A. 1 - Hanger yoke assembly; 2 - DISS

B. 1 - DISS; 2 - Hanger yoke assembly

C. 1 - PIN Index system; 2 - Hanger yoke assembly

D. 1 - Hanger yoke assembly; 2 - PIN Index system



See Answer in Part B → Q16

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Q17: Match the gas to its respective cylinder body and shoulder colors. Column A (Gas) Column B (Body Color) Column C (Shoulder Color) 1. Oxygen a) Black i) White 2. N2O b) Blue ii) Blue 3. Nitrogen c) Black iii) Black 4. Carbon dioxide d) Gray iv) Gray 5. Entonox e) Blue v) White & blue 6. Air f) Grey vi) Black & white (Q846818)

A. 1-a-i ; 2-b-ii ; 3-c-iii; 4-d-iv ; 5-e-v ; 6-f-vi

B. 1-a-vi ; 2-b-ii ; 3-c-iii; 4-d-iv ; 5-d-v ; 6-f-i

C. 1-a-i ; 2-b-v ; 3-c-iii; 4-d-iv ; 5-d-ii ; 6-f-vi

D. 1-a-i ; 2-b-ii ; 3-d-iv; 4-c-iii ; 5-d-v ; 6-f-vi

See Answer in Part B → Q17

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Q18: Mark the cylinder used in MRI rooms and its corresponding wall thickness. (Q846817)

A. Steel cylinders; 3mm

B. Aluminum cylinders; 3mm

C. Steel cylinders; 6mm

D. Aluminum cylinders; 6mm

See Answer in Part B → Q18

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• [09_Anaesthesia Machine _ Workstation] 017 Previous Year Questions

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[09_Anaesthesia Machine _ Workstation] 017 Previous Year Questions — Quick Jump

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Q7 (p. 145) *Q8 (p. 146)* *Q9 (p. 146)*

Q1: Ambu aura 40 is an example of? (Q852836)

A. Supraglottic laryngeal airway generation 1

B. Supraglottic laryngeal airway generation 2

C. Supraglottic laryngeal airway generation 3

D. Supraglottic laryngeal airway generation 4

See Answer in Part B → Q1

@Neet_pg_bot

Q2: What is the typical pressure setting for the valve in a Mapleson circuit? (Q844122)

A. 30–40 cm H■O,

B. 30–40 mm Hg

C. 10–20 cm H■O

D. 10–20 mm Hg

See Answer in Part B → Q2

@Neet_pg_bot

Q3: Which of the following instrument is shown in the image below? (Q820222)

A. Veress needle

B. Hasson Cannula

C. Large Bore Cannula

D. Small bore cannula



See Answer in Part B → Q3

@Neet_pg_bot

Q4: Resistance of the tube shown below is primarily because of: (Q857817)

A. Curvature

B. Circumference

C. Length

D. Diameter



See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following gases is delivered through the blue pipeline in the operation theatre? (Q856762)

A. Oxygen

B. Nitrous oxide

C. Air

D. Vacuum

See Answer in Part B → Q5

@Neet_pg_bot

Q6: Identify the equipment shown in the image below (Q856459)

A. Mechanical ventilator

B. Infusion pump

C. CPAP machine

D. Nasal cannula



See Answer in Part B → Q6

@Neet_pg_bot

Q7: The colour of the nitrous oxide cylinder is? (Q859743)

A. Blue

B. Blue body with white shoulder

C. White

D. Black

See Answer in Part B → Q7

@Neet_pg_bot

Q8: Jackson Rees circuit is used for? (Q852831)

A. Pediatric anaesthesia

B. Cardiac anaesthesia

C. Neuro anaesthesia

D. Obstetric anaesthesia

See Answer in Part B → Q8

@Neet_pg_bot

Q9: In the operating theater, you observe the utilization of a particular vaporizer. Which of the listed gases would you anticipate it to comprise? (Q793427)

A. Desflurane

B. Sevoflurane

C. Halothane

D. Isoflurane



See Answer in Part B → Q9

@Neet_pg_bot

• [10_Oxygen Therapy_ Mechanical Ventilation and Airway] 018 Previous Year Questions

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[10_Oxygen Therapy_ Mechanical Ventilation and Airway] 018 Previous Year Questions — Quick Jump

Q1 (p. 148)	*Q2 (p. 148)*	*Q3 (p. 149)*	*Q4 (p. 150)*	*Q5 (p. 150)*	*Q6 (p. 151)*
Q7 (p. 152)	*Q8 (p. 152)*	*Q9 (p. 153)*	*Q10 (p. 154)*	*Q11 (p. 155)*	*Q12 (p. 155)*
Q13 (p. 156)	*Q14 (p. 156)*	*Q15 (p. 157)*	*Q16 (p. 157)*	*Q17 (p. 158)*	*Q18 (p. 159)*
Q19 (p. 159)	*Q20 (p. 159)*	*Q21 (p. 160)*	*Q22 (p. 161)*	*Q23 (p. 161)*	

Q1: In conventional oxygen therapy, which device will deliver the highest FiO 2 ? (Q856584)

A. Venturi mask

B. Hudson mask

C. Non-rebreathing mask

D. High Flow Nasal Cannula

See Answer in Part B → Q1

@Neet_pg_bot

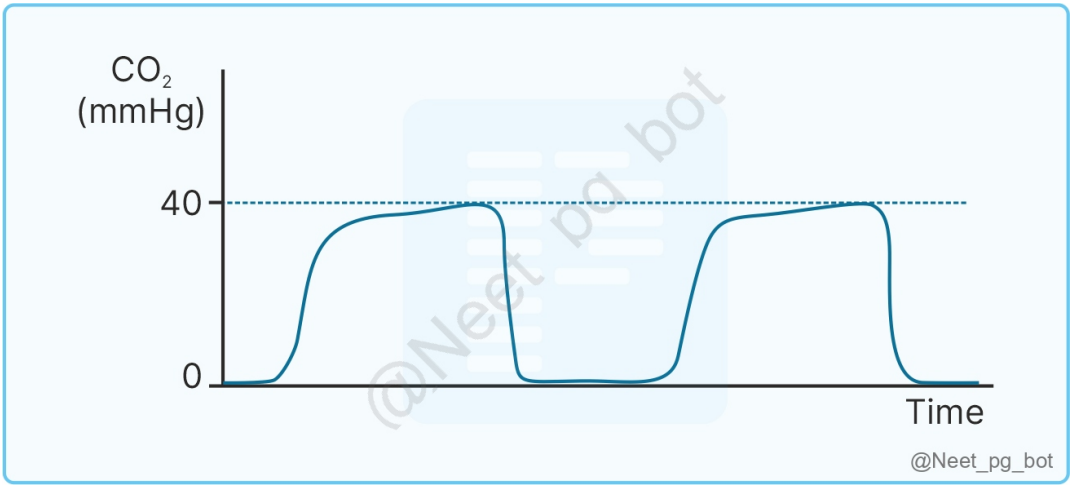
Q2: The waveform shown in the image represents which of the following physiological parameters? (Q866897)

A. Arterial oxygen saturation

B. End-tidal carbon dioxide

C. Functional residual capacity

D. Tidal volume



See Answer in Part B → Q2

@Neet_pg_bot

Q3: In the image shown, identify the function of the marked structure on the endotracheal tube. (Q866891)

A. Facilitation of vocal cord visualization

B. Monitoring airway pressure

C. Prevention of air leakage and aspiration

D. Suctioning of lower respiratory tract secretions



@Neet_pg_bot

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Which of the following conditions is a contraindication for the use of bi-level positive airway pressure? (Q860376)

A. Obstructive sleep apnea

B. Unconscious/ sedation

C. High oxygen levels

D. Low partial pressure of oxygen

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Identify the given instrument? (Q859731)

A. Guedel airway

B. Laryngeal mask airway

C. Endotracheal tube

D. Nasogastric tube



See Answer in Part B → Q5

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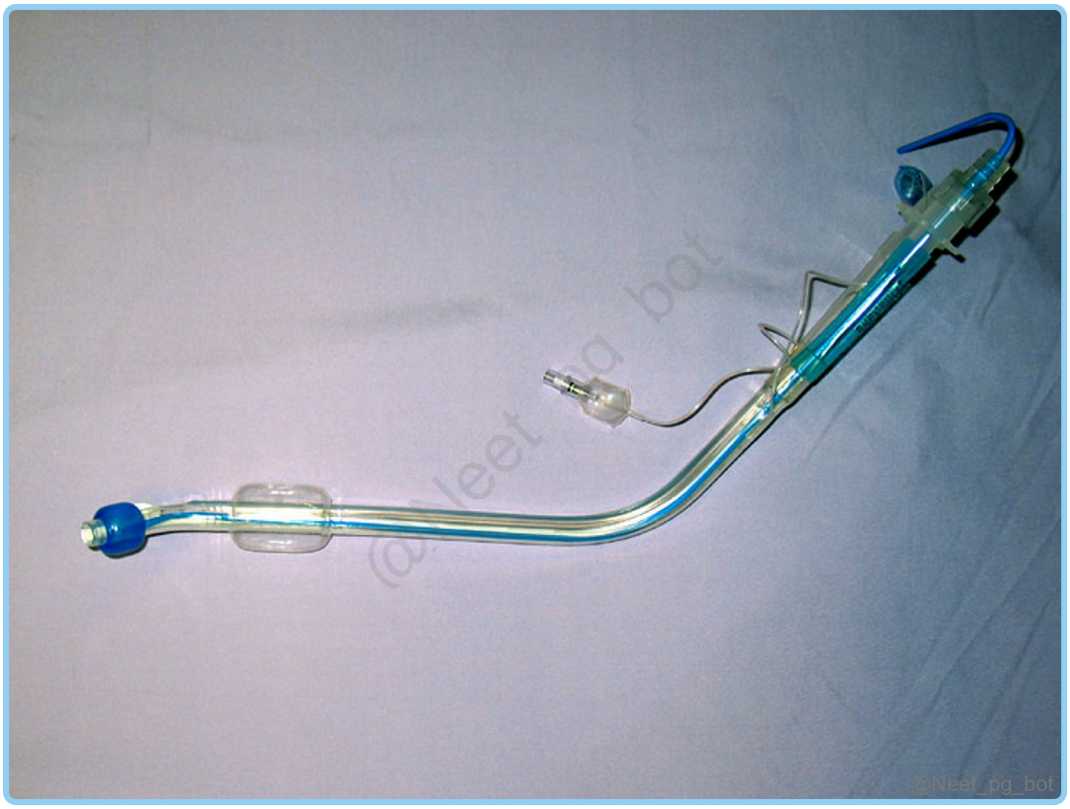
Q6: What is this device called? (Q859725)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

C. Ring-adair-elwin type

D. Endotracheal tubes equipped with bronchial blockers



See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which of the following post-bronchodilator pulmonary function test (PFT) results would indicate airflow obstruction requiring further evaluation in a 50-year-old male with ASA Grade III status? (Q858067)

A. FEV1<0.85 and FEV1/FVC<0.8

B. FEV1<0.85 and FEV1/FVC<0.75

C. FEV1<0.85 and FEV1/FVC<0.7

D. FEV1<0.8 and FEV1/FVC<0.75

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A patient in the ICU with an endotracheal tube now needs a tracheostomy tube. Which type of tube will you use? (Q857815)

A. Uncuffed tracheostomy tube

B. Cuffed tracheostomy tube

C. Metallic tracheostomy tube

D. Endotracheal tube

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A COVID patient required oxygen therapy. Which of the following cylinders should be used to provide oxygen for this patient? [(Q857562)

A. 1

B. 2

C. 3

D. 4



See Answer in Part B → Q9

@Neet_pg_bot

Q10: The mask given below works on which of the following principles? (Q857036)

A. Bohr effect

B. Boyle's principle

C. Bernoulli principle

D. Mapleson's circuit



See Answer in Part B → Q10

@Neet_pg_bot

Q11: Which of the following is not a clear benefit of using high-pressure oxygen via nasal cannula (Q857027)

A. Decreases the need for intubation

B. Reduces nasopharyngeal dead space

C. Heating and humidification

D. PEEP

See Answer in Part B → Q11

@Neet_pg_bot

Q12: A 32-year-old man with blunt chest trauma following a high-speed motor vehicle collision is intubated in the emergency department for worsening respiratory distress. Mechanical ventilation is initiated. Which of the following initial ventilator settings is INCORRECT for this patient? (Q856769)

A. Respiratory rateof 12 breaths/min

B. PEEP of 5 cm H■O

C. FIO of 100%

D. Tidal volume of 12ml/kg of actual BW

See Answer in Part B → Q12

@Neet_pg_bot

Q13: What is the maximum rate of oxygen flow that can be maintained using a traditional oxygen mask? (Q856582)

A. 5 L/min

B. 15 L/min

C. 10 L/min

D. 20 L/min

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 42-year-old man who was under home isolation after testing positive for COVID-19 develops breathing difficulty and is brought to the ER. The patient is alert and responsive but is breathing rapidly. SpO 2 is measured to be 86%. He is administered oxygen via a face mask with a reservoir bag with a flow rate of 10 L/min. After a trial of one hour, his SpO 2 is 88%. What is the next step in management? (Q856569)

A. Increase flow rate to 15 L/min

B. High-flow nasal cannula oxygen therapy

C. Endotracheal intubation

D. No specific intervention is necessary

See Answer in Part B → Q14

@Neet_pg_bot

Q15: What is the most effective way to verify the placement of the endotracheal tube in a 30-year-old male patient who has been intubated for surgery by a final-year resident? (Q856169)

A. X-ray chest

B. Auscultation

C. End-tidal CO■ concentration

D. Chest rise

See Answer in Part B → Q15

@Neet_pg_bot

Q16: Identify the mask in the image used for patients with COVID-19 infection. (Q855539)

A. Venturi mask

B. Hudson mask

C. Nebuliser

D. Non-rebreathing mask



See Answer in Part B → Q16

@Neet_pg_bot

Q17: What should be the next course of action in managing a patient with pneumonia who is on a ventilator, weighs 50 kg, has a respiratory rate of 14 breaths per minute, a bicarbonate level of 18, a pH of 7.33, a paCO2 level of 48 mmHg, a Pao2 level of 110 mmHg, a PEEP of 12 cm H■O, a tidal volume of 420 mL, and a SpO2 level of 100% with an FiO2 of 90%? (Q854618)

A. Increase PEEP

B. Decrease FiO■

C. Decrease RR

D. Increase tidal volume

See Answer in Part B → Q17

@Neet_pg_bot

Q18: A neonate is brought to the pediatric ER in acute respiratory distress. On examination, the abdomen is scaphoid. Which of the following should not be performed in this patient? (Q854615)

A. PPV

B. Bag and mask ventilation

C. Oxygen therapy

D. Intubation

See Answer in Part B → Q18

@Neet_pg_bot

Q19: A child was being delivered oxygen by nasal cannula at 3L/min. What is the FiO2 being delivered? (Q854611)

A. 24%

B. 30%

C. 44%

D. 40%

See Answer in Part B → Q19

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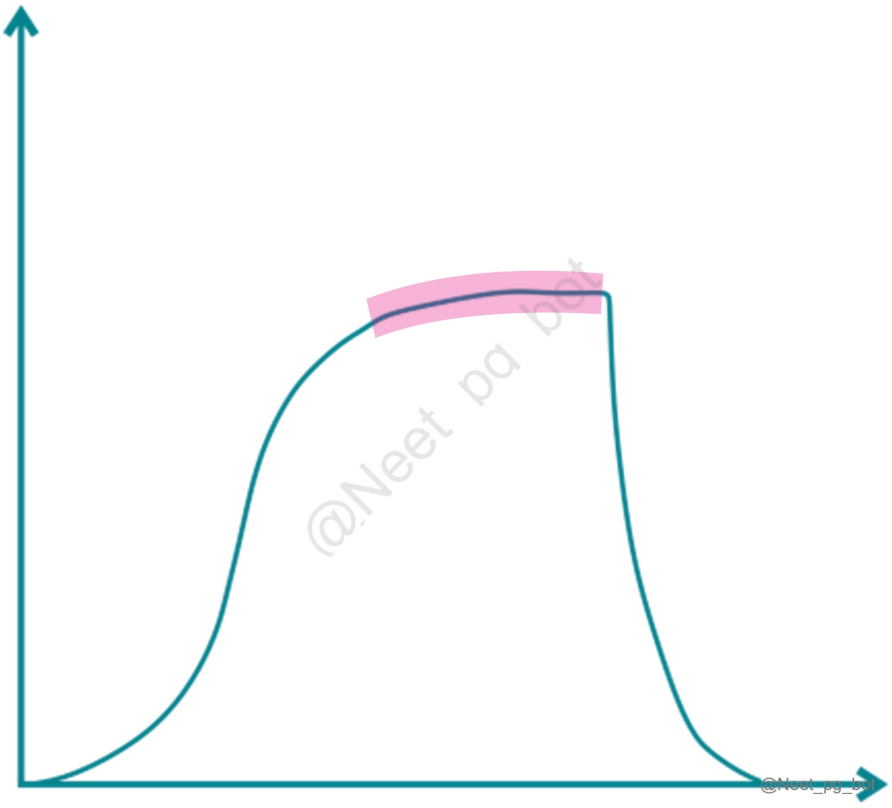
Q20: In the given capnograph, what does the marked area denote? (Q844285)

A. Expiratory upstroke

B. Alveolar Plateau

C. Inspiratory downstroke

D. Inspiratory baseline



See Answer in Part B → Q20

@Neet_pg_bot

Q21: In which of the following is the given position used? (Q844284)

A. Neurosurgery

B. Intubation

C. NG tube insertion

D. Bougie insertion



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See Answer in Part B → Q21

@Neet_pg_bot

Q22: Which of these is a second-generation Laryngeal Mask Airway (LMA)? (Q839902)

A. LMA Proseal

B. Ambu

C. Intubating LMA

D. Classic LMA

See Answer in Part B → Q22

@Neet_pg_bot

Q23: A known case of asthmatic bronchitis was reported to the hospital with breathlessness, palpitations, and oxygen saturation of 88%. The hospital does not have a ventilator. All the following can be given to the patient, except? (Q793453)

A. Hydrocortisone

B. Theophylline

C. Oxygen with oxygen mask, and reservoir

D. Leukotriene antagonist

See Answer in Part B → Q23

@Neet_pg_bot

• [11_Pain Management] 019 Pain Management

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[11_Pain Management] 019 Pain Management — Quick Jump

Q1 (p. 163) *Q2 (p. 164)* *Q3 (p. 164)* *Q4 (p. 164)* *Q5 (p. 165)* *Q6 (p. 165)*
Q7 (p. 166) *Q8 (p. 166)*

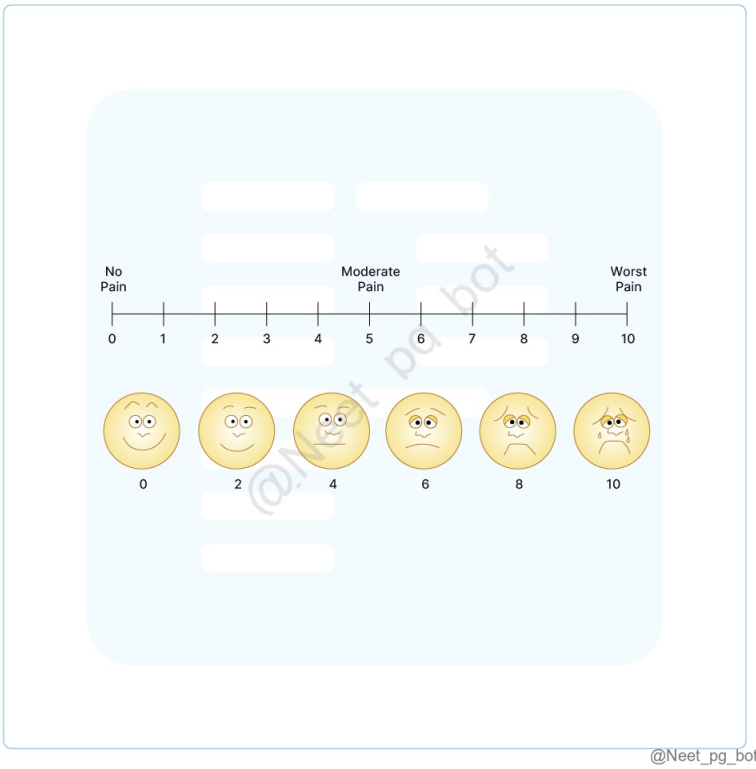
Q1: Identify the method of assessment of Pain as depicted in the image. (Q846827)

A. Wong-Baker Scale

B. Visual Analog Scale

C. CHEOPS

D. McGill Pain Scale



See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 45-year-old female presents to the clinic with a 6-month history of persistent lower back pain. She describes the pain as a dull ache that worsens throughout the day is associated with difficulty sleeping, and has a burning sensation radiating down her left leg. Over-the-counter ibuprofen has provided minimal relief. What is the most appropriate step in managing her pain? (Q846830)

A. Increase the dosage of ibuprofen.

B. Amitriptyline

C. Tramadol

D. Exercise therapy

See Answer in Part B → Q2

@Neet_pg_bot

Q3: You are caring for a 20-year-old woman with metastatic breast carcinoma and renal failure. While she is admitted to the oncology ward, she develops a pain of 8/10 score. What is the best medication to treat her pain? (Q846831)

A. IV Paracetamol

B. PO morphine

C. PO Tramadol

D. IV Pethidine

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 65-year-old woman is recovering in the postoperative unit after hip replacement surgery. She is receiving strong analgesics. The doctor checked her vital signs and found that her heart rate was 52 beats per minute. Which other adverse effect should the medical team be alert for in this patient due to strong analgesics? (Q846832)

A. Rash

B. Mydriasis

C. Diarrhea

D. Hypertension

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 45-year-old man is in the postanesthesia care unit following a routine elective surgery. You are asked to monitor the patient for morphine overdose. Which of the following sets of symptoms best represents the classic triad associated with morphine overdose? (Q846833)

A. Mydriasis, hypertension, and tachycardia

B. Hypertension, respiratory depression, and miosis

C. Respiratory depression, miosis, and altered mental status

D. Agitation, hyperreflexia, and diaphoresis

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 45-year-old male in the post-anesthesia care unit (PACU) following surgery is found unresponsive with a respiratory rate of 6 breaths/min and pinpoint pupils. His oxygen saturation is 85%, and his blood pressure is 90/60 mmHg. He had received morphine for intraoperative analgesia. What is the most appropriate next step? (Q846834)

A. Administer Naltrexone.

B. Administer Naloxone.

C. Administer Methadone.

D. Administer Buprenorphine.

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which of the following statements accurately describes a key difference between sufentanil and remifentanil? (Q846835)

A. Remifentanil is more potent than Sufentanil

B. Remifentanil is metabolized by non-specific plasma esterases, while sufentanil is metabolized by the liver.

C. Sufentanil acts on μ-opioid receptors whereas Remifentanil acts on κ-opioid receptors.

D. Remifentanil has a longer duration of action compared to sufentanil.

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 50-year-old patient is taking phenelzine, a monoamine oxidase inhibitor (MAOI), for depression and is scheduled for elective surgery. When should phenelzine be discontinued before the surgery to minimize the risk of interactions with pethidine? (Q846836)

A. 24 hours before surgery

B. 48 hours before surgery

C. 1 week before surgery

D. 3 weeks before surgery

See Answer in Part B → Q8

@Neet_pg_bot

• [12_Brain Death] 020 Brain Death

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[12_Brain Death] 020 Brain Death — Quick Jump

Q1 (p. 167) *Q2 (p. 167)* *Q3 (p. 168)* *Q4 (p. 168)* *Q5 (p. 169)* *Q6 (p. 169)*
Q7 (p. 169) *Q8 (p. 170)*

Q1: Which of the following is true about brain death? (Q846837)

A. Complete loss of cerebral cortical function but preservation of brainstem reflexes.

B. Irreversible loss of all brain function, including the brainstem, with inability to breathe independently.

C. Persistent vegetative state where higher brain functions are lost, but spontaneous respiratory effort is present.

D. Reversible coma with absence of brainstem reflexes.

See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 58-year-old woman is admitted with a traumatic brain injury and is being evaluated for brain death. Her core body temperature is 36.5°C, and her systolic blood pressure is 95 mmHg despite volume resuscitation. Neuromuscular blocking agents were recently administered. Which of the following should be done before proceeding with the brain death diagnosis? (Q846838)

A. Administer vasopressors to increase systolic blood pressure above 100 mmHg and wait for drug clearance before proceeding.

B. Perform brainstem reflex testing immediately since her core temperature is adequate.

C. Reduce the temperature to less than 36°C to continue with the exam.

D. Start administering antidotes for neuromuscular blockade and proceed with the diagnosis.

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A 30-year-old patient is unconscious following a massive intracerebral hemorrhage. Upon neurological examination, the pupils are fixed and dilated at 5 mm, and there is no response to cold caloric testing or corneal stimulation. However, when tracheal suctioning is performed, the patient exhibits a slight cough. Which of the following conclusions is accurate? (Q846839)

A. Brain death cannot be confirmed due to the presence of the cough reflex.

B. Brain death can be confirmed as the pupils are fixed and non-reactive.

C. Brain death can be confirmed, and the cough reflex is a false-positive result.

D. Cold caloric testing is unreliable in this setting.

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 40-year-old male is unconscious following a traumatic brain injury and is being evaluated for brain death. His blood pressure is stabilized with noradrenaline infusion to maintain a systolic BP of 110 mm Hg. The patient is preoxygenated for 10 minutes with 100% FiO 2 , achieving a PaO 2 of 230 mm Hg. The ventilator is disconnected, and 100% FiO 2 is administered via insufflation tubing at 6 L/min near the carina. After 10 minutes, no respiratory movements are observed. Arterial blood gas analysis reveals a PaCO 2 of 65 mm Hg, and the SpO 2 remains at 98% throughout the test. What is the most appropriate conclusion regarding this apnea test? (Q846840)

A. The apnea test is negative since the patient needs vasopressors.

B. SpO2 should drop below 90% for a valid apnea test.

C. The apnea test is positive, indicating brain death.

D. The apnea test should be extended for another 5 minutes to confirm brain death.

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 45-year-old patient is suspected of having brain death after a severe head injury. The clinical evaluation is incomplete due to confounding factors. Which of the following ancillary tests is considered the gold standard for assessing cerebral blood flow in determining brain death? (Q846841)

A. Computed Tomography (CT) Angiography

B. Four-vessel angiography

C. Magnetic Resonance Angiography (MRA)

D. Electroencephalogram (EEG)

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 30-year-old patient requires conscious sedation for a dental procedure. The anesthesiologist considers various agents for this purpose. Which of the following drugs is commonly preferred for inducing moderate sedation due to its favorable safety profile and effectiveness in achieving anxiolysis without significant cardiopulmonary complications? (Q846842)

A. Propofol

B. Dexmedetomidine

C. Midazolam

D. Methohexital

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which of the following statements about non-operating room anesthesia (NORA) is false? (Q846843)

A. NORA can be safely performed in outpatient clinics with trained personnel.

B. Airway management complications are less common in NORA than in operating rooms.

C. NORA requires specific sedation techniques based on procedure complexity.

D. Midazolam is the commonly used agent, owing to its safety profile.

See Answer in Part B → Q7

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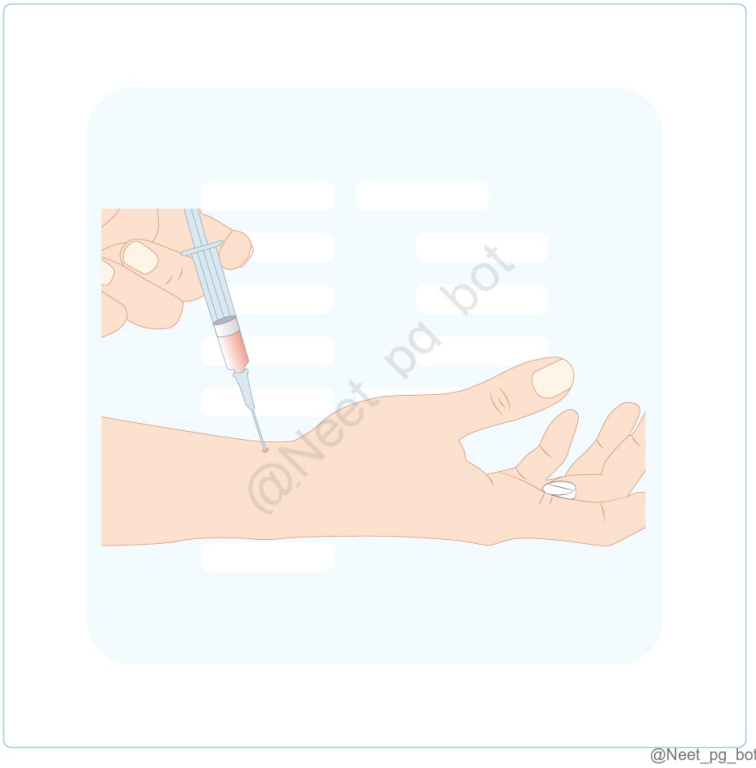
Q8: Which of the following statements is/are incorrect regarding this type of Euthanasia? Statement 1: It is an act of commission Statement 2: Not using extraordinary life-sustaining measures Statement 3: It is a part of Hospice care Statement 4: Practiced in India (Q846844)

A. Statements 1 and 2

B. Statements 2, 3 and 4

C. Statements 3 and 4

D. Statement 4 only



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See Answer in Part B → Q8

@Neet_pg_bot

• [13_Emergency Medicine] 021 Previous Year Questions

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[13_Emergency Medicine] 021 Previous Year Questions — Quick Jump

Q1 (p. 172) *Q2 (p. 172)* *Q3 (p. 173)* *Q4 (p. 173)* *Q5 (p. 174)* *Q6 (p. 175)*

Q1: Which statement in rapid sequence intubation is incorrect ? (Q855266)

A. Preoxygenation with 100% oxygen for 3 minutes is done

B. High–volume, low-pressure cuff is used

C. It is the first choice of treatment in cardiac arrest patients

D. The induction agent and muscle relaxant are given simultaneously

See Answer in Part B → Q1

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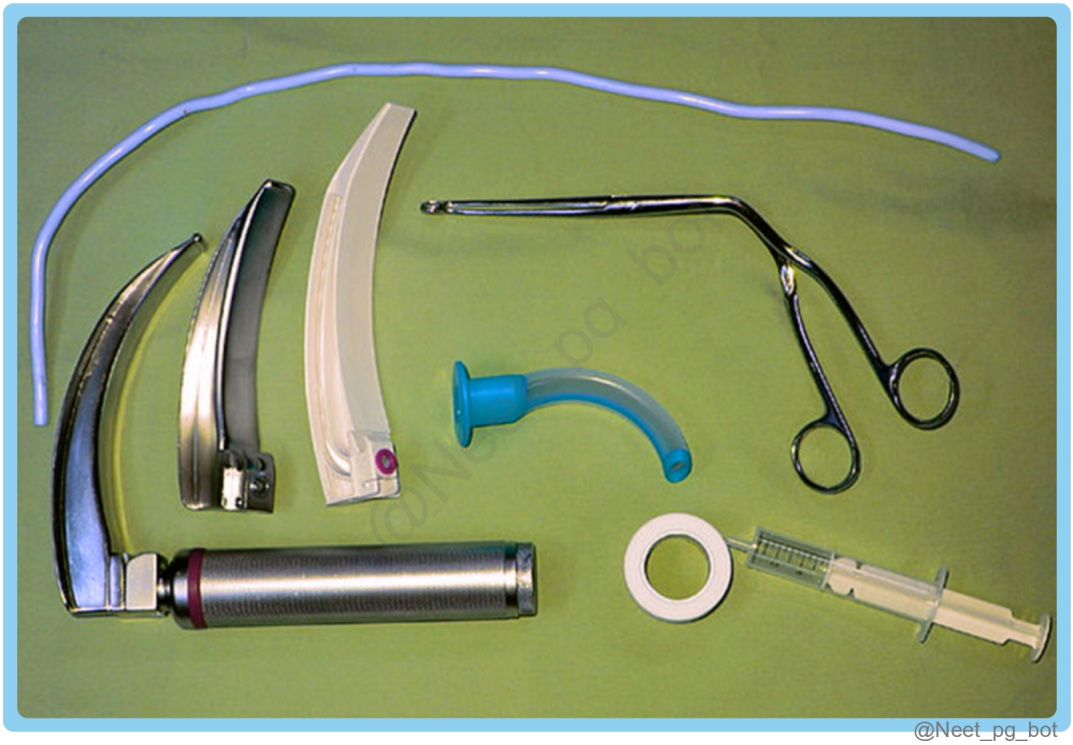
Q2: These instruments are utilized for: (Q856462)

A. Central line insertion

B. Arterial line insertion

C. Airway management

D. Umbilical catheter insertion



See Answer in Part B → Q2

@Neet_pg_bot

Q3: An 18-year-old boy is rushed to the emergency room after choking on a bone while eating. He is conscious and responsive, but unable to speak. What is the next appropriate step in management? (Q857564)

A. Bag and mask ventilation

B. Endoscopic removal

C. Deliver 5 back slaps and 5 chest compressions

D. Perform Heimlich maneuver

See Answer in Part B → Q3

@Neet_pg_bot

Q4: After a building collapse, a patient presents with airway obstruction and mouth filled with concrete debris. BP is 90/60 mmHg, HR 105/min. The given procedure is performed (image shown). Which of the following statements regarding this procedure is true? (Q866525)

A. It provides adequate ventilation for up to 6 hours

B. It must be followed by a formal tracheostomy

C. It allows for removal of large foreign bodies from the airway

D. It can be safely used for prolonged airway management without further intervention



See Answer in Part B → Q4

@Neet_pg_bot

Q5: A patient under anesthesia is found to be in a “cannot intubate, cannot ventilate” (CICV) scenario. What is the next best step in management? (Q866919)

A. Insert nasopharyngeal airway

B. Perform a cricothyroidotomy

C. Insert a laryngeal mask airway

D. Perform a tracheostomy

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A patient undergoing surgery develops sudden deranged vitals following a failed attempt at subclavian vein catheterization. On examination, the trachea is shifted to one side and breath sounds are absent on the same side. What is the most likely diagnosis? (Q866921)

A. Bronchospasm

B. Tension pneumothorax

C. Pulmonary embolism

D. Aspiration pneumonitis

See Answer in Part B → Q6

@Neet_pg_bot

• [14_Intravenous Anaesthetic Agents] 022 Intravenous Anaesthetic Agents - I

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[14_Intravenous Anaesthetic Agents] 022 Intravenous Anaesthetic Agents - I — Quick Jump

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Q7 (p. 178)	*Q8 (p. 179)*	*Q9 (p. 179)*	*Q10 (p. 179)*	*Q11 (p. 180)*	*Q12 (p. 180)*
Q13 (p. 181)	*Q14 (p. 181)*	*Q15 (p. 181)*	*Q16 (p. 182)*	*Q17 (p. 182)*	*Q18 (p. 183)*
Q19 (p. 183)	*Q20 (p. 183)*	*Q21 (p. 184)*			

Q1: A 40-year-old man is given propofol for anesthesia. Which of the following statements regarding the effects of propofol is false? (Q846877)

A. Inhibits ventilatory drive by depressing hypercarbic and hypoxic responses

B. Causes profound respiratory depression leading to apnea

C. It provides antipruritic and antiemetic effects

D. Increases the cerebral perfusion rate and cerebral blood volume

See Answer in Part B → Q1

@Neet_pg_bot

Q2: Match the following anesthetic drug with its systemic effect Drug Effect 1. Thiopental a. No effect on HR, ■ MAP 2. Dexmedetomidine b. ■ HR, ■ MAP 3. Propofol c. ■ HR, ■ ICP 4. Ketamine d. ■ HR, ■ ICP (Q846887)

A. 1-c, 2-b, 3-a, 4-d

B. 1-b, 2-a, 3-d, 4-c

C. 1-a, 2-d, 3-c, 4-b

D. 1-d, 2-a, 3-b, 4-c

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A 24-year-old male with no significant medical history is scheduled for a minor surgical procedure. The anesthesiologist administers remimazolam for sedation. What is the primary advantage of remimazolam over midazolam in this setting? (Q846886)

A. More rapid and consistent recovery profile.

B. Reduced risk of respiratory depression.

C. Stronger anxiolytic properties.

D. Longer duration of action.

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 75-year-old male with a history of chronic liver disease presents with severe anxiety and insomnia. The patient has been prescribed benzodiazepines in the past, but his physician is concerned about potential drug accumulation and adverse effects due to impaired liver function. Which of the following benzodiazepines is the most appropriate choice for this patient? (Q846885)

A. Diazepam

B. Clonazepam

C. Lorazepam

D. Flurazepam

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 60-year-old female with Parkinson’s disease is undergoing total knee replacement surgery. The anesthesiologist is considering giving droperidol as part of the anesthesia plan to prevent PONV. The patient is currently on levodopa-carbidopa

therapy and has well-controlled symptoms. What should the anesthesiologist consider before administering droperidol? (Q846884)

A. It is contraindicated in patients with Parkinson's disease as it may exacerbate motor symptoms.

B. It will not interfere with Parkinson’s medications and can be safely administered.

C. It should only be given in higher doses to prevent complications in Parkinson's patients.

D. It is a first-line antiemetic in Parkinson’s disease and should be used without caution.

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 40-year-old male with hypertension undergoes fiberoptic intubation. After receiving a loading dose of dexmedetomidine for sedation, his heart rate drops to 45 bpm, and his blood pressure increases slightly. What explains these changes? (Q846883)

A. Initial increase in BP followed by reflex bradycardia

B. Direct SA node depression causing bradycardia

C. Decrease in BP and HR due to alpha-1 agonism

D. Bradycardia from beta-blocker-like activity

See Answer in Part B → Q6

@Neet_pg_bot

Q7: During induction of anesthesia, a patient receiving etomidate shows an increase in blood pressure and heart rate. How does etomidate primarily achieve cardiovascular stability? (Q846882)

A. By activating the sympathetic nervous system

B. By affecting the baroreceptor function

C. Through α2-adrenoceptor activation

D. By enhancing myocardial oxygen demand

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 47-year-old male patient with a history of adrenal carcinoma and hypercortisolemia is scheduled for a surgical procedure. The anesthesiology team is evaluating induction agents that suppress adrenal function. Which of the following agents can be used in this patient? (Q846881)

A. Propofol

B. Ketamine

C. Etomidate

D. Thiopental

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 60-year-old female patient with a history of chronic migraines and increased intracranial pressure due to a recent stroke is scheduled for a minor procedure requiring anesthesia. Which anesthetic agent should be avoided in this patient? (Q846880)

A. Thiopentone

B. Midazolam

C. Ketamine

D. Sevoflurane

See Answer in Part B → Q9

@Neet_pg_bot

Q10: Which of the following statements about ketamine is not true in the context of its pharmacological properties and clinical use? (Q846879)

A. It primarily acts as an antagonist at N-methyl-D-aspartate (NMDA) receptors, inducing dissociative anesthesia.

B. The S(+) isomer is less potent as an analgesic than the R(-) isomer.

C. It has high lipid solubility, allowing for rapid brain uptake.

D. It is metabolized in the liver, and its elimination half-life is approximately 2 hours .

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A patient is in long-term sedation with propofol due to a neurological condition. The patient develops rhabdomyolysis, hyperkalemia, and lactic acidosis. Which of the following steps would not be useful in managing this scenario? (Q846878)

A. Hemodialysis

B. Sodium bicarbonate infusion

C. Lowering the dose of propofol

D. Fluid management and monitoring

See Answer in Part B → Q11

@Neet_pg_bot

Q12: A 12-year-old child is scheduled for surgery and has a history of asthma. Which preoperative medication should be considered to reduce airway secretions and minimize the risk of bronchospasm? (Q846828)

A. Midazolam

B. Glycopyrrolate

C. Ondansetron

D. Fentanyl

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 40-year-old man is given propofol for anesthesia. Which of the following statements regarding the effects of propofol is false? (Q846876)

A. Inhibits ventilatory drive by depressing hypercarbic and hypoxic responses

B. Causes profound respiratory depression leading to apnea

C. It provides antipruritic and antiemetic effects

D. Increases the cerebral perfusion rate and cerebral blood volume

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 4-year-old patient in the ICU requires sedation while on mechanical ventilation. The medical team considers using Propofol. Which of the following is a key pharmacokinetic feature of Propofol that supports its use in this scenario? (Q846875)

A. Long onset of action.

B. Minimal hangover effects after recovery.

C. High risk of prolonged sedation.

D. Primarily excreted via feces.

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A patient is sedated using methohexital for surgery. What is false about methohexital? (Q846874)

A. It belongs to the barbiturates group of drugs

B. Acts by binding to GABA (A) receptors

C. Can be used to briefly control grand-mal seizures

D. Produces muscle relaxation and analgesia

See Answer in Part B → Q15

@Neet_pg_bot

Q16: A 45-year-old male is undergoing an elective surgical procedure Thiopental sodium is administered for induction. Shortly after the injection, the anesthesiologist notices that the patient's arm is becoming pale and cold, indicating possible intra-arterial injection of the anesthetic.What is the appropriate sequence of steps to manage this situation? (Q846873)

A. Administer 5 ml of 2% procaine or lignocaine into the affected artery, then consider a brachial plexus block.

B. Perform an early arteriotomy, then start full heparinization.

C. Administer 5 ml of 2% procaine or lignocaine, then provide deep anesthesia.

D. Start full heparinization immediately, then assess for the need for an arteriotomy.

See Answer in Part B → Q16

@Neet_pg_bot

Q17: A 65-year-old patient undergoing neurosurgery is administered thiopental sodium as an induction agent. Which of the following statements regarding its effects is true? (Q846872)

A. It increases cerebral blood flow and oxygen consumption.

B. It causes peripheral vasodilation and increased heart rate.

C. It enhances respiratory rate and tidal volume during awakening.

D. It enhances hepatic blood flow and reduces the metabolism of other drugs.

See Answer in Part B → Q17

@Neet_pg_bot

Q18: A 65-year-old patient is scheduled for elective surgery requiring general anesthesia. The anesthesiologist decides to use thiopental sodium as an induction agent. Which of the following statements is true about thiopental sodium? (Q846871)

A. It has a long duration of action due to extensive renal metabolism.

B. Its rapid onset is primarily due to its high potency and redistribution.

C. It appears as a white milky liquid.

D. Its elimination half-life is approximately 1 hour.

See Answer in Part B → Q18

@Neet_pg_bot

Q19: Which of the following statements is correct regarding intravenous anesthetic drugs? (Q846870)

A. Barbiturates primarily block NMDA receptors to induce anesthesia.

B. Barbiturates can be safely mixed with lactated Ringer’s solution.

C. Thiopental is mixed with anhydrous sodium carbonate.

D. Ketamine primarily acts on GABA-A inhibitory receptors.

See Answer in Part B → Q19

@Neet_pg_bot

Q20: A 38-year-old male is being taken up for emergency surgery following a trauma. The anesthesiologist decides to give medications as prophylaxis for aspiration. Which of the following drugs is not used as a prophylactic agent? (Q846869)

A. Bicitra

B. Metoclopramide

C. H2-antagonists

D. Rocuronium

See Answer in Part B → Q20

@Neet_pg_bot

Q21: A 35-year-old woman undergoes a laparoscopic hysterectomy under general anesthesia. After 5 minutes of preoxygenation with 100% oxygen, anesthesia is induced and maintained. What is the main purpose of preoxygenation in this case? (Q846829)

A. To increase CO 2 retention

B. To ensure the patient's lungs are fully saturated with oxygen before induction

C. To reduce anesthesia depth requirement

D. To reduce respiratory rate during anesthesia

See Answer in Part B → Q21

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• [14_Intravenous Anaesthetic Agents] 023 Previous Year Questions

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[14_Intravenous Anaesthetic Agents] 023 Previous Year Questions — Quick Jump

Q1 (p. 185) *Q2 (p. 185)* *Q3 (p. 185)* *Q4 (p. 186)* *Q5 (p. 186)*

Q1: Sodium thiopentone is regarded as an ultrashort-acting drug due to (true or false) (Q865386)

A. Rapid redistribution

B. Metabolism

C. Excretion

D. Short elimination half-life

See Answer in Part B → Q1

@Neet_pg_bot

Q2: Which of the following is the most common drug used in day care surgery/TIVA? (Q860078)

A. Sodium thiopentone

B. Propofol

C. Halothane

D. Ketamine

See Answer in Part B → Q2

@Neet_pg_bot

Q3: Which of the following intravenous anesthetics functions as an NMDA receptor antagonist? (Q860086)

A. Ketamine

B. Propofol

C. Thiopentone sodium

D. Midazolam

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Intravenous induction agent of choice for day care anesthesia is? (Q859312)

A. Ketamine

B. Propofol

C. Etomidate

D. Thiopentone

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following statements about ketamine when used in combination with another induction agent is incorrect? (Q878929)

A. Enhances the induction effect

B. Reduces opioid tolerance

C. Increases sensitivity to opioid analgesia

D. Produces a dissociative state

See Answer in Part B → Q5

@Neet_pg_bot

• [15_Inhalational Anaesthetic Agents] 024 Inhalational Anaesthetics

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[15_Inhalational Anaesthetic Agents] 024 Inhalational Anaesthetics — Quick Jump

Q1 (p. 188)	*Q2 (p. 188)*	*Q3 (p. 189)*	*Q4 (p. 189)*	*Q5 (p. 190)*	*Q6 (p. 190)*
Q7 (p. 191)	*Q8 (p. 191)*	*Q9 (p. 192)*	*Q10 (p. 192)*	*Q11 (p. 192)*	*Q12 (p. 193)*
Q13 (p. 193)	*Q14 (p. 193)*	*Q15 (p. 194)*	*Q16 (p. 194)*	*Q17 (p. 195)*	*Q18 (p. 195)*
Q19 (p. 196)	*Q20 (p. 196)*				

Q1: Which of the following statements about the systemic effects of desflurane is true? (Q846810)

A. Increase in systemic vascular resistance.

B. Severe nephrotoxicity.

C. Increases cerebral blood flow (CBF) while decreasing cerebral oxygen consumption.

D. No effect on respiratory rate.

See Answer in Part B → Q1

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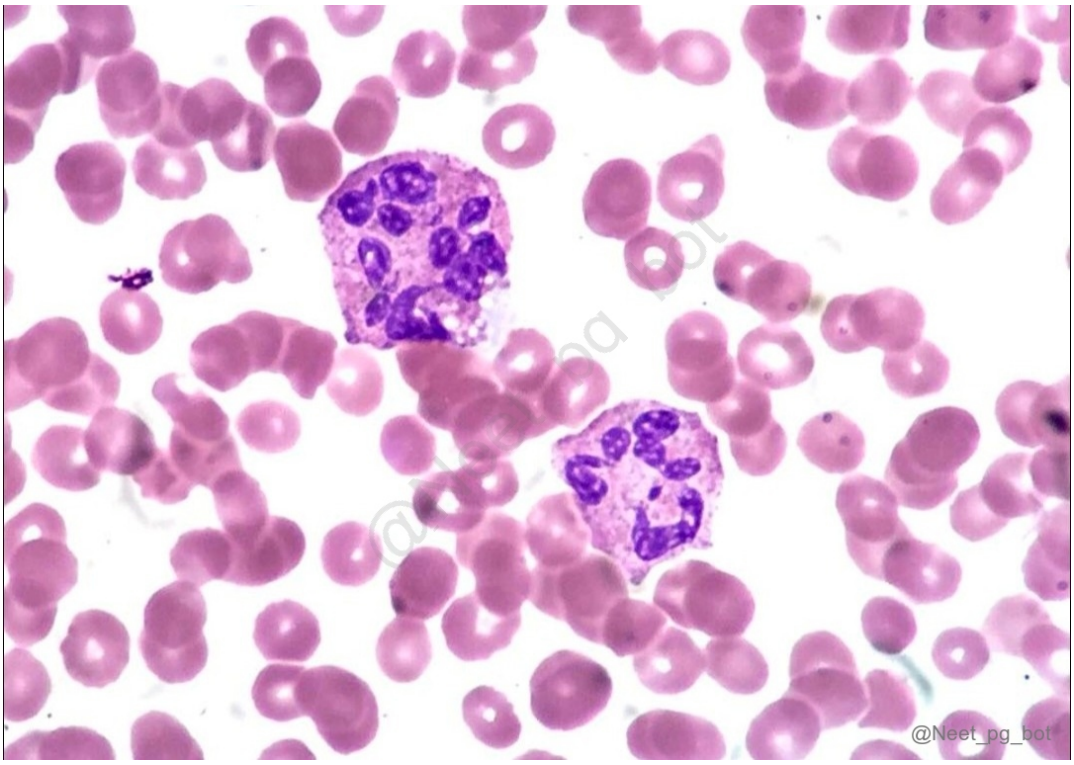
Q2: A 45-year-old chronic alcoholic patient is scheduled for an emergency laparotomy. The preoperative peripheral blood smear is shown below. Exposure to which of the following anaesthetic agents is most likely to precipitate subacute combined degeneration (SCD) of the spinal cord in this patient? (Q885147)

A. Sevoflurane

B. Nitrous Oxide

C. Propofol

D. Ketamine



See Answer in Part B → Q2

@Neet_pg_bot

Q3: A 28-year-old female patient, who is 24 weeks pregnant, is scheduled for an emergency appendectomy under general anaesthesia. Which of the following statements correctly describes the change in her anaesthetic requirement compared to a non-pregnant state? (Q885146)

A. MAC increases due to increased cardiac output.

B. MAC decreases due to increased levels of progesterone and endogenous opioids.

C. MAC remains unchanged as pregnancy does not affect the blood-brain barrier.

D. MAC increases due to the higher metabolic rate of the fetus.

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 75-year-old male is scheduled for a transurethral resection of the prostate (TURP). The anesthesiologist notes that the patient's Minimum Alveolar Concentration (MAC) requirements are likely lower than those of a younger patient. By approximately what percentage does the MAC of inhalational anaesthetics decrease per decade of life? (Q885142)

A. 2%

B. 4%

C. 6%

D. 10%

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which of the following inhalational anaesthetic agents has the lowest blood-gas partition coefficient, thereby ensuring the fastest induction and recovery? (Q885124)

A. Halothane

B. Isoflurane

C. Desflurane

D. Sevoflurane

See Answer in Part B → Q5

@Neet_pg_bot

Q6: During a surgical procedure, the anesthesiologist is monitoring the patient and observes signs of complete respiratory depression, total loss of reflexes, and dilated, non-reactive pupils. According to Guedel’s stages of anesthesia, which stage is the patient most likely in, and what are the implications for airway management? (Q846815)

A. Stage I (Analgesia)

B. Stage II (Excitement)

C. Stage III (Surgical Anesthesia)

D. Stage IV (Overdose)

See Answer in Part B → Q6

@Neet_pg_bot

Q7: Which among the following statements explains the concept of Mayer Overton's rule? (Q846814)

A. The lipid solubility of the agent is directly proportional to the potency of the agent

B. The rule asserts that all anesthetics act through the same mechanism of action regardless of their structure.

C. The rule indicates that anesthetics with lower boiling points are more potent.

D. None of the above

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 35-year-old patient is recovering from anesthesia after a dental procedure that involved the use of nitrous oxide (N 2 O). As the anesthesiologist prepares to discontinue N 2 O, they consider the potential risks associated with it. To prevent this complication in the patient, which of the following actions should be taken? (Q846813)

A. Administer room air immediately after stopping N 2 O.

B. Administer 100% oxygen for 5 to 10 minutes after stopping N 2 O.

C. Continue N 2 O for an additional 10 minutes.

D. Reduce the concentration of N 2 O gradually over the next 15 minutes.

See Answer in Part B → Q8

@Neet_pg_bot

Q9: Which of the following statements best describes the second gas effect of Nitrous oxide when administered along with Isoflurane? (Q846812)

A. Decreased concentration of Isoflurane in the alveoli

B. Increased concentration of Isoflurane in the alveoli

C. Increase concentration of Nitrous oxide in alveoli

D. No effect on the concentration of gases in the alveoli

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A 30-year-old male with a family history of severe reactions to anesthesia is scheduled for surgery under general anesthesia. The anesthetic plan includes nitrous oxide (N■O) along with other agents. Given his history, which of the following statements about nitrous oxide is FALSE ? (Q846811)

A. Nitrous oxide is a colorless and odorless gas.

B. It can trigger malignant hyperthermia.

C. It is contraindicated in patients with Pneumothorax.

D. It causes MI in patients with CAD.

See Answer in Part B → Q10

@Neet_pg_bot

Q11: Which of the following statements about Minimal Alveolar Concentration (MAC) is true? (Q846784)

A. MAC is the lowest for nitrous oxide

B. MAC is used to compare the potency of inhaled anesthetics

C. MAC is a measure of the blood concentration of anesthetic agents

D. MAC does not vary with age

See Answer in Part B → Q11

@Neet_pg_bot

Q12: A 55-year-old female is scheduled for elective surgery. The anesthesiologist is reviewing the anesthesia plan, which includes the use of sevoflurane. Which of the following statements regarding sevoflurane is TRUE ? (Q846809)

A. It significantly increases heart rate during anesthesia.

B. It can be given to the patient with raised intracranial pressure.

C. It is known to cause significant renal toxicity.

D. It doesn’t reverse bronchospasm.

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 60-year-old man with hypertension and coronary artery disease is undergoing general anesthesia for abdominal surgery. The anesthesiologist chooses to use isoflurane for the maintenance of anesthesia. Which of the following is a correct statement about isoflurane's effects and properties? (Q846808)

A. It causes significant myocardial depression

B. It increases systemic vascular resistance

C. It is highly metabolized in the liver

D. It provides cardio-protection through ischemic preconditioning

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 45-year-old woman with a history of moderate alcohol use undergoes general anesthesia for an emergency appendectomy. The anesthesiologist uses halothane for induction and maintenance. Two weeks after the surgery, the patient presents with fatigue, nausea, jaundice, and tender hepatomegaly. Laboratory tests reveal the following: AST (Aspartate Aminotransferase): 850 U/L (normal range: 5-40 U/L) ALT (Alanine Aminotransferase): 920 U/L (normal range: 7-56 U/L) Total Bilirubin: 4.8 mg/dL (normal range: 0.1-1.2 mg/dL) Direct Bilirubin: 3.2 mg/dL (normal range: 0.0-0.3 mg/dL) Which of the following best explains the patient's condition? (Q846807)

A. Direct hepatotoxicity of halothane

B. Immune-mediated hepatotoxicity of halothane

C. Alcohol-induced liver failure precipitating due to surgical stress

D. Postoperative sepsis

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A 68-year-old patient with a history of liver disease is scheduled for a prolonged liver transplant surgery. Which of the following inhalational anesthetics would be most appropriate to use in this case? (Q846805)

A. Halothane

B. Desflurane

C. Methoxyflurane

D. Isoflurane

See Answer in Part B → Q15

@Neet_pg_bot

Q16: A 45-year-old woman is undergoing elective cholecystectomy under general anesthesia. The anesthesiologist is using halothane as the primary inhalational anesthetic. During the procedure, the surgeon encounters unexpected bleeding and

requests local infiltration with adrenaline (epinephrine) for hemostasis. What is the most appropriate response of the anesthesiologist to the surgeon's request for adrenaline infiltration? (Q846789)

A. Agree to the use of adrenaline without any concerns

B. Refuse the use of adrenaline completely due to high-risk

C. Allow the use of adrenaline, but advise using a dilute solution and limiting the total dose

D. Suggest switching to a different inhalational anesthetic before using adrenaline

See Answer in Part B → Q16

@Neet_pg_bot

Q17: All the following statements about the systemic effects of inhalational agents are correct except: (Q846788)

A. Isoflurane can be safely used in patients with head injury

B. Halothane is the anesthetic agent of choice in patients with ischaemic heart disease

C. Almost all inhalational agents cause bronchodilation

D. Sevoflurane is the anesthetic of choice in bronchial asthma

See Answer in Part B → Q17

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Q18: Which of the following anesthetics is ordered from lowest to highest in terms of Minimum Alveolar Concentration (MAC) values (indicating potency)? (Q846787)

A. Desflurane, Isoflurane, Halothane

B. Halothane, Isoflurane, Desflurane

C. Sevoflurane, Nitrous Oxide, Desflurane

D. Nitrous Oxide, Sevoflurane, Halothane

See Answer in Part B → Q18

@Neet_pg_bot

Q19: A 45-year-old male is undergoing general anesthesia for a routine surgery. The anesthesiologist uses two different inhalational agents: one with a high blood-gas partition coefficient and another with a low blood-gas partition coefficient. Which of the following is TRUE regarding the blood-gas partition coefficient and its clinical implications? (Q846786)

A. An inhalational agent with a high blood-gas partition coefficient will achieve anesthesia more quickly than one with a low coefficient.

B. An inhalational agent with a low blood-gas partition coefficient will require a higher concentration in the alveoli to maintain anesthesia.

C. An inhalational agent with a high blood-gas partition coefficient will have a slower onset and offset of action compared to one with a low coefficient.

D. The blood-gas partition coefficient has no effect on the pharmacokinetics of inhalational anesthetics.

See Answer in Part B → Q19

@Neet_pg_bot

Q20: During a routine surgical procedure requiring general anesthesia, an anesthesiologist is determining the appropriate dosage of sevoflurane for a 45-year-old patient. Several factors could influence the Mean Alveolar Concentration (MAC) needed to achieve adequate anesthesia. The anesthesiologist considers the following factors: Patient Age: 45 years. Body Temperature: 37°C. Use of Opioids: The patient has received a dose of fentanyl prior to induction. Which factor is likely to decrease the MAC value for sevoflurane in this patient? (Q846785)

A. Height

B. Gender

C. Use of opioids

D. Thyroid status

See Answer in Part B → Q20

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• [15_Inhalational Anaesthetic Agents] 025 Previous Year Questions

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[15_Inhalational Anaesthetic Agents] 025 Previous Year Questions — Quick Jump

Q1 (p. 198) *Q2 (p. 198)* *Q3 (p. 198)* *Q4 (p. 199)*

Q1: Which of the following inhalation agents has a blood-gas partition coefficient similar to nitrous oxide? (Q860372)

A. Isoflurane

B. Desflurane

C. Sevoflurane

D. Halothane

See Answer in Part B → Q1

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Q2: Which among the following is the induction anesthesia of choice in pediatric age group? (Q839908)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A patient was given halothane for a surgical procedure. After a few minutes, the anesthetist noticed that he developed rigidity and hyperthermia. Which of the following ions is the reason for the above symptoms? (Q857782)

A. Sodium

B. Calcium

C. Potassium

D. Magnesium

See Answer in Part B → Q3

@Neet_pg_bot

Q4: Which volatile anesthetic is most frequently chosen for maintenance during cardiac surgery? (Q857786)

A. Halothane

B. Isoflurane

C. Sevoflurane

D. Desflurane

See Answer in Part B → Q4

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• [16_Airway Management] 026 Difficult Airway Management And Ventilators

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[16_Airway Management] 026 Difficult Airway Management And Ventilators — Quick Jump

Q1 (p. 200) *Q2 (p. 200)* *Q3 (p. 201)* *Q4 (p. 202)* *Q5 (p. 202)* *Q6 (p. 202)*
Q7 (p. 203) *Q8 (p. 203)* *Q9 (p. 204)* *Q10 (p. 204)* *Q11 (p. 204)* *Q12 (p. 205)*
Q13 (p. 205)

Q1: A male patient presents for an elective total knee replacement. During the preoperative assessment, the anesthesiologist performs a thorough evaluation and finds: Mallampati Score: Class III Thyromental Distance: 6 cm Sterno-mental distance 13 cm with head in maximum extension Neck circumference of 16 inch Which of the following features in a patient would prompt you to anticipate a difficult intubation? (Q846771)

A. Mallampati Score: Class III

B. Thyromental Distance: 6cm

C. Sterno-mental distance 13cm with head in maximum extension

D. Neck circumference of 16 inch

See Answer in Part B → Q1

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Q2: A 54-year-old woman is scheduled for an elective hysterectomy. During the preoperative assessment, the anesthesiologist evaluates her airway using Lemons' Law, which suggests that certain anatomical features are key predictors of difficult intubation. Which of the following features in a patient would prompt you to anticipate a difficult intubation? (Q846772)

A. Mallampati Classification: Class II

B. Thyroid to mouth distance - 2 finger breadth

C. BMI of 20

D. Range of neck movement is good

See Answer in Part B → Q2

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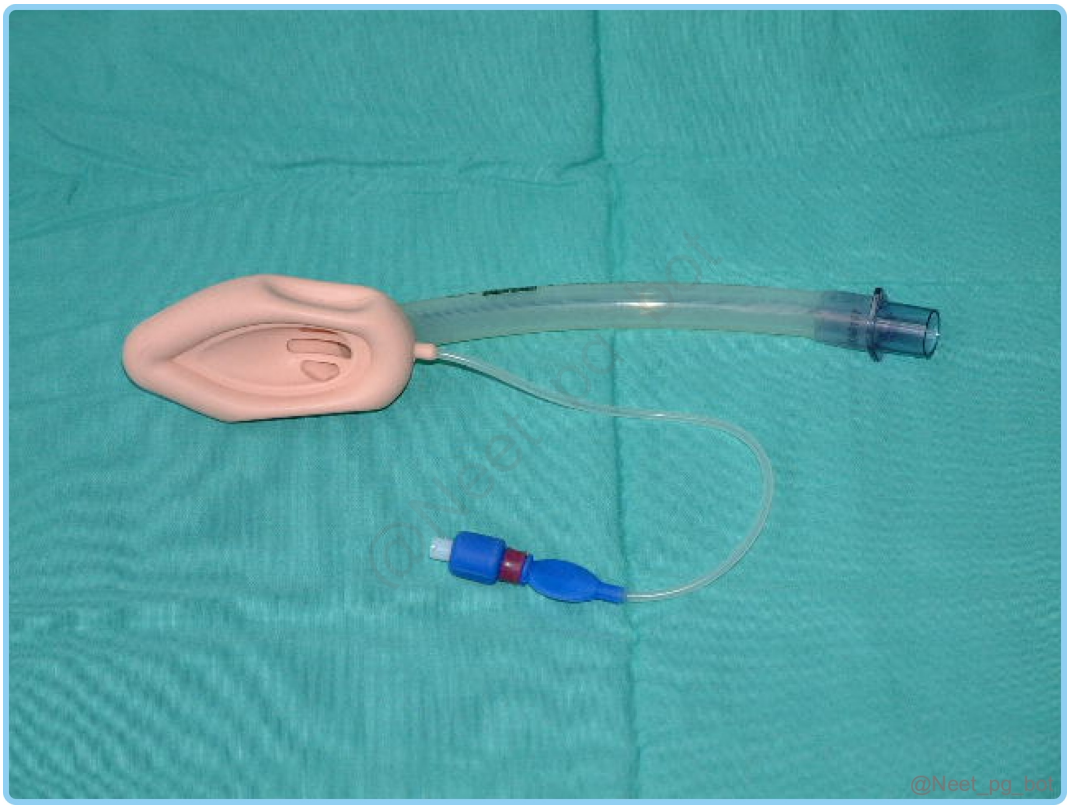
Q3: According to DAS guidelines, how will you manage a patient who is undergoing an elective cholecystectomy, if the below shown device fails to ventilate the patient? (Q846773)

A. Bag and mask ventilation with 2-person technique

B. Continue the surgery with LMA

C. Invasive airway management

D. None of the above



See Answer in Part B → Q3

@Neet_pg_bot

Q4: Which of the following is NOT an indication for invasive mechanical ventilation? (Q846774)

A. Respiratory arrest

B. Severe hypoxemia unresponsive to oxygen therapy

C. Inability to protect the airway

D. Cardiogenic pulmonary oedema

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 65-year-old male patient is undergoing general anesthesia for an open cholecystectomy. The anesthesiologist decides to use Continuous Mandatory Ventilation (CMV). Which of the following is NOT a characteristic of CMV? (Q846775)

A. It typically requires deeper sedation than spontaneous breathing modes

B. It's useful for patients with severe respiratory failure

C. It allows for patient-triggered breaths between mandatory breaths

D. It may lead to respiratory muscle atrophy with prolonged use

See Answer in Part B → Q5

@Neet_pg_bot

Q6: A 60-year-old patient with acute respiratory distress syndrome (ARDS) is being mechanically ventilated. The physician is considering switching from volume-controlled assist control ventilation (VC-ACV) to pressure-controlled assist control ventilation (PC-ACV). Which of the following statements is true regarding these two modes? (Q846776)

A. PC-ACV always delivers a higher tidal volume than VC-ACV

B. VC-ACV ensures lower peak inspiratory pressure than PC-ACV

C. PC-ACV provides a decelerating flow pattern which may improve gas distribution

D. VC-ACV is more likely to cause barotrauma than PC-ACV

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 55-year-old patient with acute respiratory failure is being weaned from mechanical ventilation using Synchronized Intermittent Mandatory Ventilation (SIMV). Which of the following statements about SIMV is correct? (Q846777)

A. SIMV always delivers a fixed number of breaths per minute

B. SIMV prevents spontaneous breathing between mandatory breaths

C. SIMV is considered the most efficient technique for ventilator weaning

D. SIMV allows for both mandatory and spontaneous breaths

See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 68-year-old patient with ARDS is being mechanically ventilated. The medical team is considering the application of PEEP to improve the patient's oxygenation. Which of the following statements about PEEP is true regarding its use in this patient? (Q846778)

A. PEEP is contraindicated in patients with tension pneumothorax.

B. PEEP decreases FRC and lung compliance.

C. PEEP is indicated in Hypovolemic shock and asthma patients.

D. Auto-PEEP is the pressure set on the ventilator to maintain airway patency.

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 50-year-old patient with a history of emphysema presents with a large pneumothorax and is unable to maintain adequate oxygenation on conventional mechanical ventilation. The medical team decides to initiate high-frequency oscillation ventilation (HFOV) as part of the management strategy. What is the typical respiratory rate range for HFOV? (Q846779)

A. 60 to 100 breaths/min

B. 100 to 150 breaths/min

C. 300 to 900 breaths/min

D. 180 to 300 breaths/min

See Answer in Part B → Q9

@Neet_pg_bot

Q10: A 62-year-old patient with severe COVID-19 pneumonia presents with acute respiratory distress syndrome (ARDS). After a few days of mechanical ventilation, the patient's arterial blood gas shows a PaO■ of 58 mmHg and a P/F ratio of 120. Given the patient's condition, which of the following interventions should the team prioritize to improve oxygenation? (Q846780)

A. Increase tidal volume to 8 mL/kg of ideal body weight

B. Implement prone positioning

C. Apply higher levels of PEEP to recruit collapsed alveoli

D. Start aggressive fluid resuscitation

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 68-year-old patient is recovering from pneumonia and has been on mechanical ventilation for the past week. The medical team is preparing to assess the patient for readiness to wean off the ventilator. Which of the following criteria should the medical team confirm before initiating the weaning process? (Q846781)

A. Vital capacity < 10 mL/kg

B. Minute ventilation > 10 L/min

C. Tidal volume (VT) > 5 mL/kg

D. Rapid shallow breathing index (RSBI) > 100

See Answer in Part B → Q11

@Neet_pg_bot

Q12: A 60-year-old patient on a ventilator for respiratory distress develops pneumonia 48 hours after starting mechanical ventilation. The physician notes fever, leukocytosis, and patchy infiltrates on the chest X-ray. Which statement is true regarding the patient's condition? (Q846782)

A. The patient likely has VAP and should be treated with ceftriaxone and azithromycin.

B. The patient likely has HAP and is appropriately treated with ceftriaxone and azithromycin.

C. Procalcitonin is not relevant in this case.

D. Early-onset VAP should be treated with piperacillin and carbapenem.

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 45-year-old patient is scheduled for surgery under general anesthesia. During the airway assessment using Modified Mallampati scoring, the following image shows the patient's oropharyngeal structures during assessment. Which class does this patient fall into? (Q846783)

A. Class IV

B. Class I

C. Class II

D. Class III



See Answer in Part B → Q13

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• [16_Airway Management] 027 Previous Year Questions

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[16_Airway Management] 027 Previous Year Questions — Quick Jump

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Q1: What is the primary purpose of PEEP (Positive End-Expiratory Pressure) in mechanical ventilation? (Q844116)

A. To increase respiratory rate

B. To reduce carbon dioxide levels

C. To increase the VR

D. To open alveoli and prevent atelectasis

See Answer in Part B → Q1

@Neet_pg_bot

Q2: Steps of intubation sequence are: a. Flexion of lower cervical spine and extension of Atlanto-occipital joint b. Inflate cuff of endotracheal tube c. Introduce a laryngoscope from the right side of mouth d. Confirm the position of tube (Q854614)

A. a, b, c, d

B. a, b, d, c

C. b, a, c, d

D. a, c, b, d

See Answer in Part B → Q2

@Neet_pg_bot

Q3: Identify the mask in the image used for patients with COVID-19 infection. (Q855539)

A. Venturi mask

B. Hudson mask

C. Nebuliser

D. Non-rebreathing mask



See Answer in Part B → Q3

@Neet_pg_bot

Q4: Identify the given instrument? (Q859731)

A. Guedel airway

B. Laryngeal mask airway

C. Endotracheal tube

D. Nasogastric tube



See Answer in Part B → Q4

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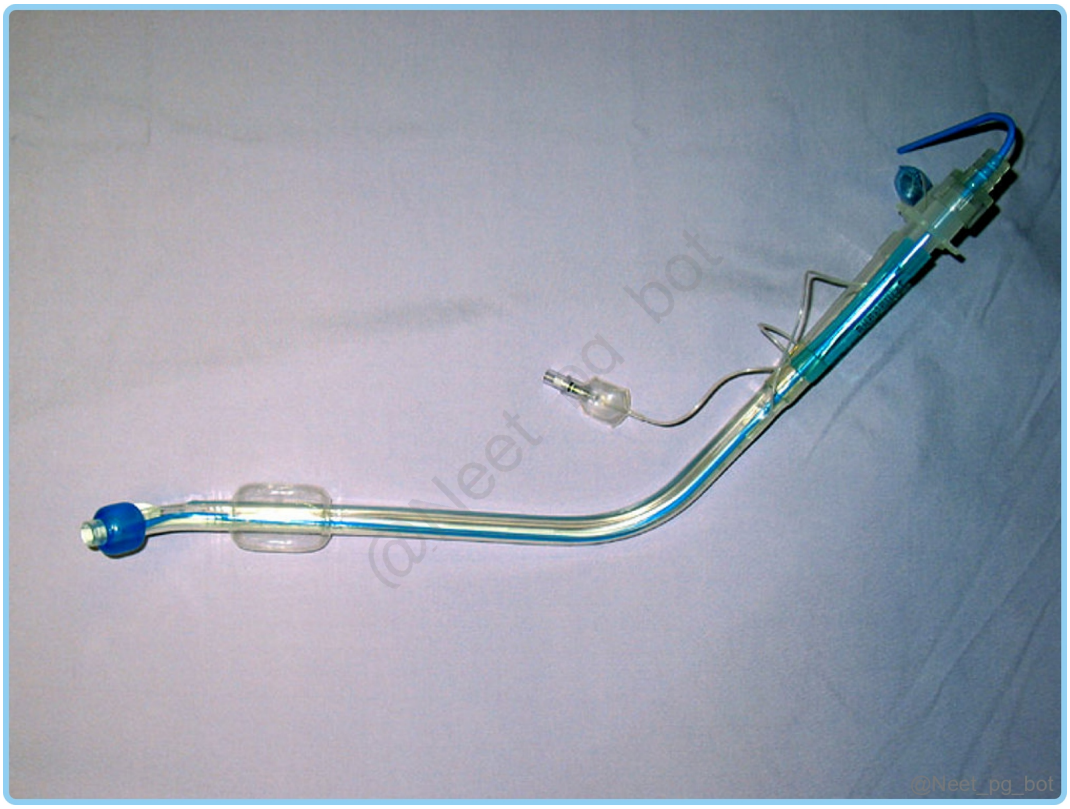
Q5: What is this device called? (Q859725)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

C. Ring-adair-elwin type

D. Endotracheal tubes equipped with bronchial blockers



See Answer in Part B → Q5

@Neet_pg_bot

Q6: Which of the following is not a clear benefit of using high-pressure oxygen via nasal cannula (Q857027)

A. Decreases the need for intubation

B. Reduces nasopharyngeal dead space

C. Heating and humidification

D. PEEP

See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 32-year-old man with blunt chest trauma following a high-speed motor vehicle collision is intubated in the emergency department for worsening respiratory distress. Mechanical ventilation is initiated. Which of the following initial ventilator settings is INCORRECT for this patient? (Q856769)

A. Respiratory rateof 12 breaths/min

B. PEEP of 5 cm H■O

C. FIO of 100%

D. Tidal volume of 12ml/kg of actual BW

See Answer in Part B → Q7

@Neet_pg_bot

Q8: What is the most effective way to verify the placement of the endotracheal tube in a 30-year-old male patient who has been intubated for surgery by a final-year resident? (Q856169)

A. X-ray chest

B. Auscultation

C. End-tidal CO■ concentration

D. Chest rise

See Answer in Part B → Q8

@Neet_pg_bot

Q9: In conventional oxygen therapy, which device will deliver the highest FiO 2 ? (Q856584)

A. Venturi mask

B. Hudson mask

C. Non-rebreathing mask

D. High Flow Nasal Cannula

See Answer in Part B → Q9

@Neet_pg_bot

Q10: What is the maximum rate of oxygen flow that can be maintained using a traditional oxygen mask? (Q856582)

A. 5 L/min

B. 15 L/min

C. 10 L/min

D. 20 L/min

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 42-year-old man who was under home isolation after testing positive for COVID-19 develops breathing difficulty and is brought to the ER. The patient is alert and responsive but is breathing rapidly. SpO 2 is measured to be 86%. He is administered oxygen via a face mask with a reservoir bag with a flow rate of 10 L/min. After a trial of one hour, his SpO 2 is 88%. What is the next step in management? (Q856569)

A. Increase flow rate to 15 L/min

B. High-flow nasal cannula oxygen therapy

C. Endotracheal intubation

D. No specific intervention is necessary

See Answer in Part B → Q11

@Neet_pg_bot

Q12: Which of the following post-bronchodilator pulmonary function test (PFT) results would indicate airflow obstruction requiring further evaluation in a 50-year-old male with ASA Grade III status? (Q858067)

A. FEV1<0.85 and FEV1/FVC<0.8

B. FEV1<0.85 and FEV1/FVC<0.75

C. FEV1<0.85 and FEV1/FVC<0.7

D. FEV1<0.8 and FEV1/FVC<0.75

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A COVID patient required oxygen therapy. Which of the following cylinders should be used to provide oxygen for this patient? [(Q857562)

A. 1

B. 2

C. 3

D. 4



See Answer in Part B → Q13

@Neet_pg_bot

Q14: The mask given below works on which of the following principles? (Q857036)

A. Bohr effect

B. Boyle's principle

C. Bernoulli principle

D. Mapleson's circuit



See Answer in Part B → Q14

@Neet_pg_bot

Q15: A patient in the ICU with an endotracheal tube now needs a tracheostomy tube. Which type of tube will you use? (Q857815)

A. Uncuffed tracheostomy tube

B. Cuffed tracheostomy tube

C. Metallic tracheostomy tube

D. Endotracheal tube

See Answer in Part B → Q15

@Neet_pg_bot

Q16: What should be the next course of action in managing a patient with pneumonia who is on a ventilator, weighs 50 kg, has a respiratory rate of 14 breaths per minute, a bicarbonate level of 18, a pH of 7.33, a paCO2 level of 48 mmHg, a Pao2 level of 110 mmHg, a PEEP of 12 cm H■O, a tidal volume of 420 mL, and a SpO2 level of 100% with an FiO2 of 90%? (Q854618)

A. Increase PEEP

B. Decrease FiO■

C. Decrease RR

D. Increase tidal volume

See Answer in Part B → Q16

@Neet_pg_bot

Q17: A neonate is brought to the pediatric ER in acute respiratory distress. On examination, the abdomen is scaphoid. Which of the following should not be performed in this patient? (Q854615)

A. PPV

B. Bag and mask ventilation

C. Oxygen therapy

D. Intubation

See Answer in Part B → Q17

@Neet_pg_bot

Q18: A child was being delivered oxygen by nasal cannula at 3L/min. What is the FiO2 being delivered? (Q854611)

A. 24%

B. 30%

C. 44%

D. 40%

See Answer in Part B → Q18

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Q19: Which of these is a second-generation Laryngeal Mask Airway (LMA)? (Q839902)

A. LMA Proseal

B. Ambu

C. Intubating LMA

D. Classic LMA

See Answer in Part B → Q19

@Neet_pg_bot

Q20: Which of the following conditions is a contraindication for the use of bi-level positive airway pressure? (Q860376)

A. Obstructive sleep apnea

B. Unconscious/ sedation

C. High oxygen levels

D. Low partial pressure of oxygen

See Answer in Part B → Q20

@Neet_pg_bot

Q21: In which of the following is the given position used? (Q844284)

A. Neurosurgery

B. Intubation

C. NG tube insertion

D. Bougie insertion



See Answer in Part B → Q21

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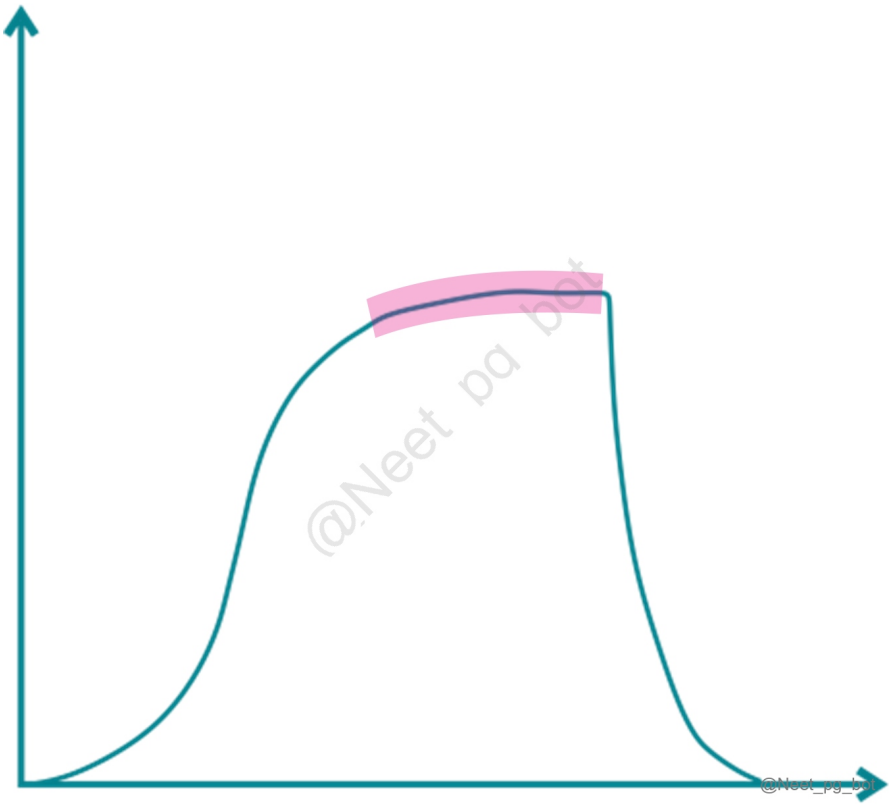
Q22: In the given capnograph, what does the marked area denote? (Q844285)

A. Expiratory upstroke

B. Alveolar Plateau

C. Inspiratory downstroke

D. Inspiratory baseline



See Answer in Part B → Q22

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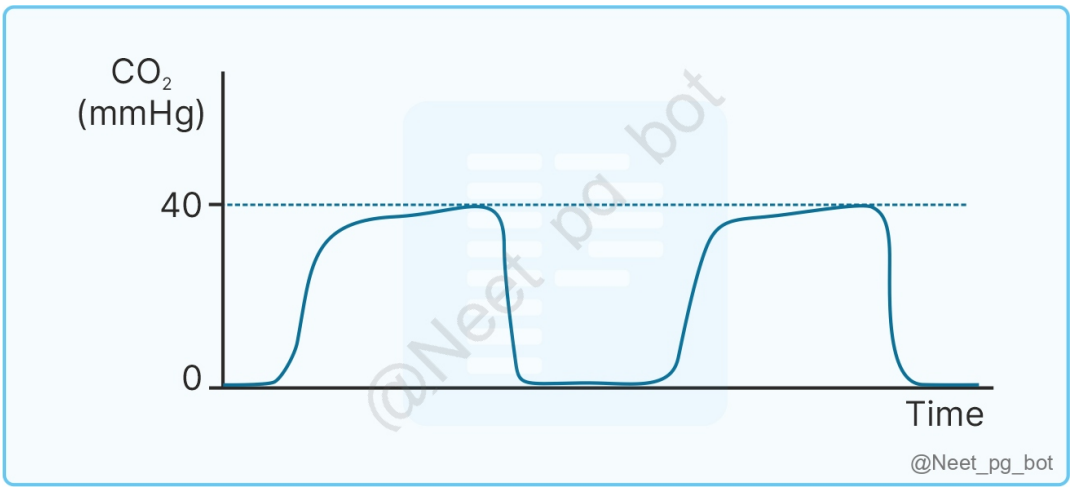
Q23: The waveform shown in the image represents which of the following physiological parameters? (Q866897)

A. Arterial oxygen saturation

B. End-tidal carbon dioxide

C. Functional residual capacity

D. Tidal volume



See Answer in Part B → Q23

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Q24: In the image shown, identify the function of the marked structure on the endotracheal tube. (Q866891)

A. Facilitation of vocal cord visualization

B. Monitoring airway pressure

C. Prevention of air leakage and aspiration

D. Suctioning of lower respiratory tract secretions



See Answer in Part B → Q24

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Q25: You are a junior resident in the ICU. A senior doctor asks you to manage a mechanically ventilated patient whose arterial blood gasses showed features of hypoventilation with respiratory acidosis. Which of the following parameters can you modulate to improve the condition of the patient? (Q857773)

A. Decrease FiO2

B. Increase respiratory rate

C. Increased PEEP

D. Increase plateau pressure

See Answer in Part B → Q25

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Q26: Which of the following is the use of the Mallampatti classification? (Q860080)

A. Endotracheal intubation

B. To evaluate the risk of surgery

C. To evaluate the pros and cons of surgery

D. To evaluate the fitness of the patient

See Answer in Part B → Q26

@Neet_pg_bot

Q27: A patient undergoing general anesthesia develops left lung collapse following intubation. On auscultation, breath sounds are heard only on the right side. What is the most likely cause of this condition? (Q852485)

A. Right endobronchial intubation

B. Mucus secretions obstructing the endotracheal tube

C. Pneumothorax on the left side due to positive pressure ventilation

D. Bronchospasm

See Answer in Part B → Q27

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Q28: A known case of asthmatic bronchitis was reported to the hospital with breathlessness, palpitations, and oxygen saturation of 88%. The hospital does not have a ventilator. All the following can be given to the patient, except? (Q793453)

A. Hydrocortisone

B. Theophylline

C. Oxygen with oxygen mask, and reservoir

D. Leukotriene antagonist

See Answer in Part B → Q28

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• [17_Miscellaneous] 028 Nerve Blocks

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[17_Miscellaneous] 028 Nerve Blocks — Quick Jump

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Q13 (p. 229)	*Q14 (p. 230)*	*Q15 (p. 230)*	*Q16 (p. 231)*		

Q1: A 30-year-old male presents to the clinic with trauma to his lower jaw. He needs stitches on his lower lip near the incisors. Which nerve block will provide adequate anesthesia for suturing the lower lip and nearby gingiva? (Q846707)

A. Infraorbital nerve block

B. Mental nerve block

C. Inferior alveolar nerve block

D. Supraorbital nerve block

See Answer in Part B → Q1

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Q2: In preparing for a superficial cervical plexus block, where should the anesthesiologist insert the needle? (Q846710)

A. Along the anterior border of the sternocleidomastoid

B. Along the posterior border of the sternocleidomastoid, halfway between the mastoid and clavicle

C. At the midpoint of the clavicle

D. Lateral to the trapezius muscle

See Answer in Part B → Q2

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Q3: During the procedure as given in the image, the anesthesiologist uses a 25-gauge needle to inject the local anesthetic. If the needle inadvertently penetrates too deeply and damages nearby structures, which of the following complications might arise? (Q846720)

A. Carotid artery puncture

B. Hemorrhage from the internal jugular vein

C. Mandibular nerve blockade leading to loss of mastication

D. Damage to the facial nerve causing unilateral weakness



See Answer in Part B → Q3

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Q4: A 35-year-old male presents with a laceration to his pinna after a sports injury. He expresses significant pain and anxiety about the repair procedure. The physician decides to perform a nerve block to ensure adequate analgesia during the repair. Which of the following is the preferred nerve block for pinna repair? (Q846723)

A. Auriculotemporal nerve block

B. Greater auricular nerve block

C. Trigeminal nerve block

D. Facial nerve block

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 40-year-old female is scheduled for endoscopic surgery involving the middle turbinate and frontal recess due to chronic sinusitis. Which of the following nerve blocks is preferred for providing analgesia during this surgery? (Q846726)

A. Maxillary nerve block

B. Anterior ethmoidal block

C. Infraorbital nerve block

D. Sphenopalatine ganglion block

See Answer in Part B → Q5

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Q6: Match the following: 1. Supraclavicular block A. Blocks the superior and middle trunk of the brachial plexus. 2. Interscalene block B. Block terminal nerves. 3. Infraclavicular block C. Blocks distal trunk-proximal division of the brachial plexus. 4. Axillary block D. Blocks at the level of cords of the brachial plexus. (Q846728)

A. 1A, 2D, 3C, 4B

B. 1C, 2A, 3D, 4B

C. 1C, 2A, 3B, 4D

D. 1B, 2C, 3A, 4D

See Answer in Part B → Q6

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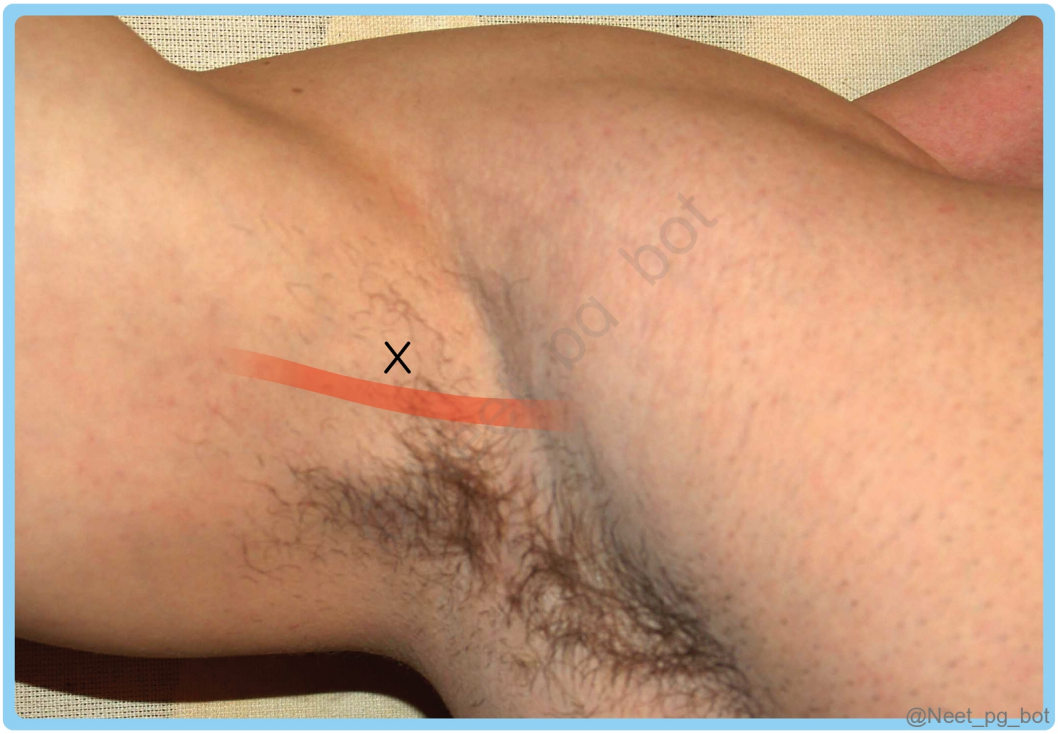
Q7: A 60-year-old patient is scheduled for forearm surgery. The anesthesiologist seeks to provide an effective brachial plexus block approach with the least risk of pneumothorax and uses the block as shown below. Identify the type of brachial plexus block approach depicted in the image? (Q846729)

A. Interscalene block

B. Infraclavicular block

C. Supraclavicular block

D. Axillary block



See Answer in Part B → Q7

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Q8: A 45-year-old woman suffers from severe chronic pain in the upper extremities that has not been relieved with pain medications. She doesn't want to keep taking

medications and wants a permanent solution. A stellate ganglion block is advised as the treatment modality. Which of the following is false about this method? (Q846730)

A. The procedure carries a risk of pneumothorax

B. Used for the treatment of PTSD and severe menopausal vasomotor symptoms

C. A successful procedure is noted by the onset of Horner's syndrome

D. C7 vertebra is preferred over C6 vertebra as the injection site

See Answer in Part B → Q8

@Neet_pg_bot

Q9: Which of the following statements is true regarding nerve blocks done at the elbow and wrist? (Q846735)

A. The median nerve is accessed lateral to the brachial artery

B. The ulnar artery is seen at the medial side of the ulnar nerve in the wrist

C. Radial nerve is approached from a posterior aspect of the elbow

D. Ulnar nerve can be blocked at the antecubital fossa

See Answer in Part B → Q9

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Q10: A patient is being evaluated and prepared to undergo a mastectomy. Which regional nerve block would be the best choice? (Q846736)

A. Rectus sheath block

B. Paravertebral block

C. Transversus abdominis plane block

D. Intercostal block

See Answer in Part B → Q10

@Neet_pg_bot

Q11: A 34-year-old male patient presents with dyspnea and pleuritic chest pain. A chest X-ray confirms bilateral pleural effusion. The physician decides to perform a thoracentesis to drain the fluid. Which of the following nerve blocks is preferred to provide analgesia during the thoracentesis procedure? (Q846737)

A. Suprascapular nerve block

B. Intercostal nerve block

C. Interscalene block

D. Thoracic sympathetic block

See Answer in Part B → Q11

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Q12: A 45-year-old male is scheduled for an elective inguinal hernia repair. The anesthesiologist decides to perform a Transversus Abdominis Plane (TAP) block to provide effective analgesia during and after the procedure. Which of the following nerves is not blocked by the TAP block? (Q846738)

A. Subcostal nerve

B. Ilioinguinal nerve

C. Genitofemoral nerve

D. Iliohypogastric nerve

See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 60-year-old patient with pancreatic cancer is in severe pain and hence is advised for celiac plexus block. Which of the following complications be rarely seen in this procedure? (Q846739)

A. Postural hypotension

B. Back pain

C. Systemic local toxicity

D. Sexual dysfunction

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 65-year-old patient is scheduled for a knee arthroscopy. The anesthesiologist plans to use regional anesthesia for postoperative analgesia. Which block should the anesthesiologist consider for effective postoperative pain relief in this procedure? (Q846740)

A. Popliteal nerve block

B. Femoral nerve block

C. Obturator nerve block

D. Lateral femoral cutaneous nerve block

See Answer in Part B → Q14

@Neet_pg_bot

Q15: A 70-year-old patient is scheduled for hip replacement surgery. Which nerve block should the anesthesiologist select to provide effective anesthesia for this procedure? (Q846742)

A. Lumbar plexus block

B. Sacral plexus block

C. Sciatic nerve block

D. Ilioinguinal nerve block

See Answer in Part B → Q15

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Q16: A 50-year-old woman is scheduled for foot surgery to remove a neuroma. The anesthesiologist performs an ankle block and aims to provide sensation to the dorsum of the foot, excluding the first interdigital cleft. Which nerve should be blocked? (Q846744)

A. Sural nerve

B. Tibial nerve

C. Deep peroneal nerve

D. Superficial peroneal nerve

See Answer in Part B → Q16

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• [17_Miscellaneous] 029 Oxygen Delivering Systems - I

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[17_Miscellaneous] 029 Oxygen Delivering Systems - I — Quick Jump

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Q13 (p. 241)	*Q14 (p. 242)*	*Q15 (p. 242)*	*Q16 (p. 243)*	*Q17 (p. 244)*	*Q18 (p. 244)*
Q19 (p. 245)					

Q1: A 60-year-old male patient undergoes general anaesthesia for abdominal surgery. After intubation, the anesthesiologist needs to confirm that the endotracheal tube (ETT) is correctly placed in the trachea. Which of the following is considered the most reliable method for confirming correct ETT placement? (Q846761)

A. Auscultation of bilateral breath sounds

B. Visual condensation in the endotracheal tube

C. Waveform capnography

D. Symmetrical chest rise

See Answer in Part B → Q1

@Neet_pg_bot

Q2: A 70-year-old COPD patient with a history of COPD presents with type 2 respiratory failure and a SpO 2 of 86%. ABG results are normal. Which oxygen delivery device will be most appropriate for this patient? (Q846770)

A. Nasal Prongs

B. Venturi Mask

C. Intubation

D. Non-Rebreathing Mask (NRBM)

See Answer in Part B → Q2

@Neet_pg_bot

Q3: A 4-year-old patient with respiratory distress is initiated on High-flow Nasal Cannula (HFNC). Which of the following statements is incorrect regarding HFNC? (Q846769)

A. Provides warmed and humidified gas to the airway.

B. It can generate low levels of positive airway pressure.

C. Limits the maximum FiO 2 to 60%.

D. Improved mortality rate in COVID patients

See Answer in Part B → Q3

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Q4: A 72-year-old female presents to the emergency department in severe respiratory distress, with an oxygen saturation of 78% on room air, tachypnea, and altered consciousness. She has a 3-day history of fever and cough, suggesting community-acquired pneumonia. What is the most appropriate intervention for ensuring adequate oxygenation? (Q846768)

See Answer in Part B → Q4

@Neet_pg_bot

Q5: A 52-year-old male patient is brought to the emergency department after a motor vehicle accident. He is unconscious with an inadequate airway and requires immediate management. Which of the following is the most appropriate method for determining the correct size of the airway as shown in the image below? (Q846767)

A. Angle of the mouth to the tragus

B. Angle of the mouth to the suprasternal notch

C. Tip of the nose to the suprasternal notch

D. Tip of the nose to the tragus



See Answer in Part B → Q5

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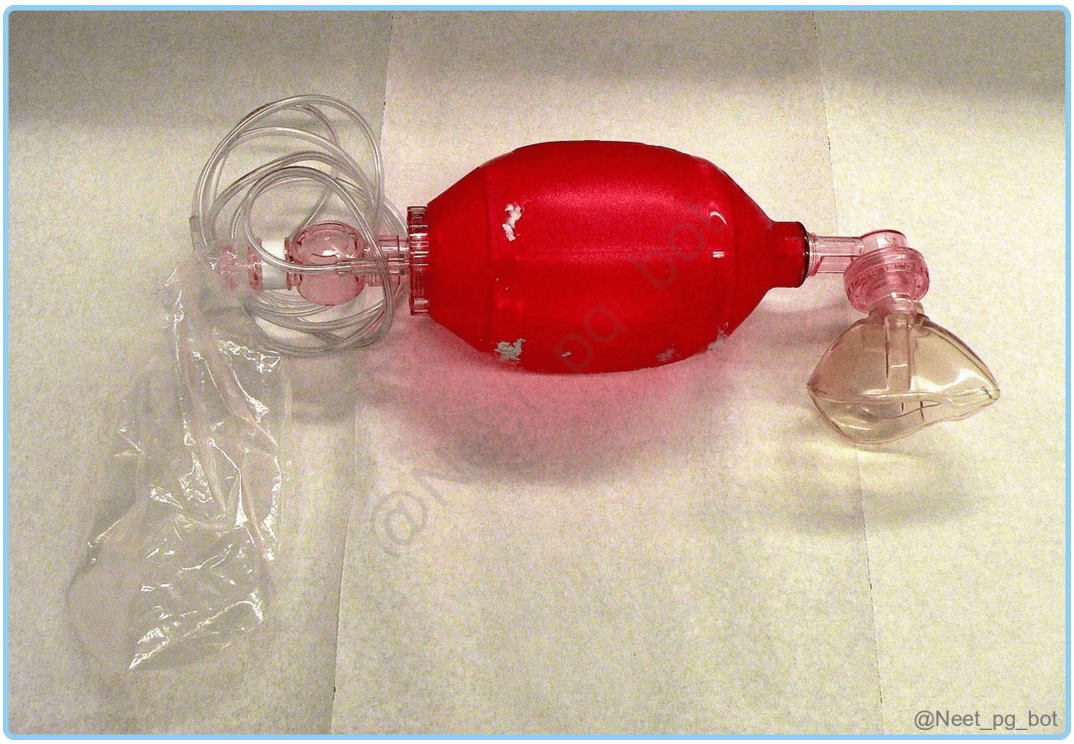
Q6: An intern in the ICU witnesses a patient suddenly become breathless and collapse, prompting a code blue. After resuscitation, the senior doctor asks the intern about the significance of the equipment shown in the image. Which of the following is NOT a significance of this equipment? (Q846766)

A. Convenient for patient transport

B. Suitable for CPR

C. Can be used during ventilator failure.

D. Can deliver high-flow supplemental oxygen



See Answer in Part B → Q6

@Neet_pg_bot

Q7: A 70-year-old patient with a history of COPD and chronic smoking arrived at the emergency department in a semi-conscious state, showing an oxygen saturation of 78% on room air. Resuscitation efforts were initiated right away. What is the function of the component depicted in the image below? (Q846765)

A. Deliver breaths to the patient

B. Prevents over-inflation of lungs

C. Provides additional oxygen supply

D. Prevents rebreathing



See Answer in Part B → Q7

@Neet_pg_bot

Q8: A 30-year-old female scheduled for laparoscopic cholecystectomy under general anesthesia experiences a sudden increase in heart rate (130 bpm), rapidly rising end-tidal CO 2 levels, elevated body temperature, and severe muscle rigidity, especially in the extremities. Which of the following capnogram patterns is indicative of this condition? (Q846764)

See Answer in Part B → Q8

@Neet_pg_bot

Q9: A 65-year-old woman with a history of chronic obstructive pulmonary disease (COPD) presents to the emergency department in respiratory distress. The healthcare team decides to utilise capnography to monitor her end-tidal carbon dioxide (EtCO■) levels as part of her assessment. Which of the following does EtCO■ NOT assess? (Q846763)

A. Ventilation-Perfusion (V/Q) matching

B. Estimate adequacy of cardiac output

C. BUN (blood urea nitrogen) determination

D. Chest compression effectiveness during CPR

See Answer in Part B → Q9

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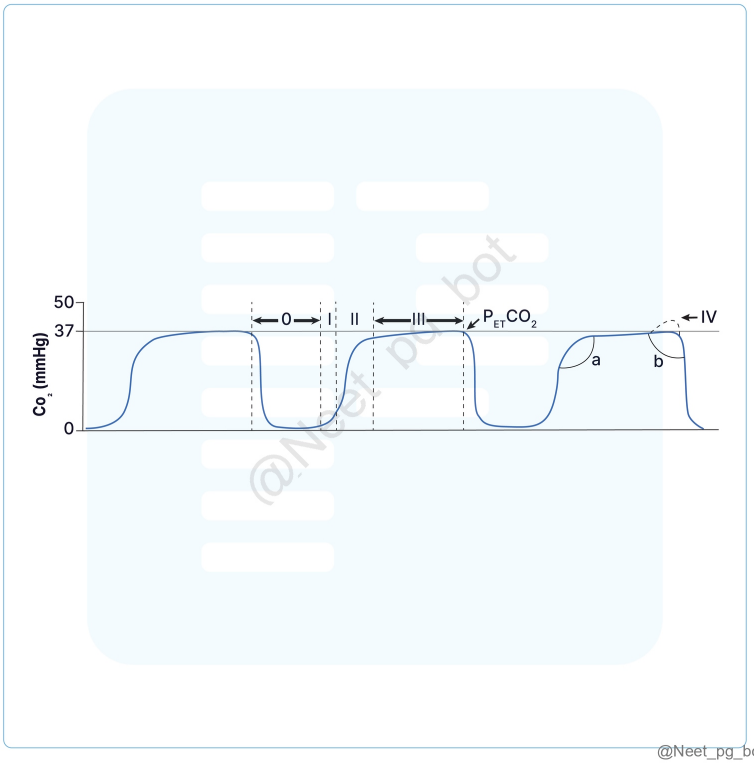
Q10: A 45-year-old patient is undergoing general anaesthesia for a laparoscopic cholecystectomy. The anesthesiologist is monitoring the patient's ventilation using capnography. The capnograph shows the following waveform. What does the plateau phases represent in the capnography waveform? (Q846762)

A. Expiration of air from alveoli

B. Expiration of air from the trachea

C. Expiration of air from bronchi

D. Exhalation of air from dead space



See Answer in Part B → Q10

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Q11: Match the following Laryngeal mask airways (LMA) with their corresponding images. i. Classic LMA a. ii. Proseal LMA b. iii. Fast Track LMA c. iv. Supreme LMA d. v. I-gel LMA e. (Q846752)

A. i-e, ii-d, iii-b, iv-a, v-c

B. i-c, ii-a, iii-d, iv-e, v-b

C. i-d, ii-b, iii-a, iv-e, v-c

D. i-b, ii-a, iii-e, iv-c, v-d




3
i-gel


NASQEJ





See Answer in Part B → Q11

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Q12: What is the primary advantage of using the pre-formed endotracheal tube shown in the image below? (Q846760)

A. Enhanced visibility during intubation

B. Reduced risk of airway obstruction

C. Improved patient comfort during long procedures

D. Facilitated access to the surgical site in maxillofacial procedures



See Answer in Part B → Q12

@Neet_pg_bot

Q13: A 36-year-old with a suspected cervical spine injury is brought to the emergency department in respiratory distress, requiring urgent intubation. Which of the following endotracheal tubes is preferred for this patient? (Q846759)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

C. Cuffed endotracheal tube

D. Uncuffed endotracheal tube

See Answer in Part B → Q13

@Neet_pg_bot

Q14: A 4-year-old child is brought to the emergency department in Respiratory distress. What is the appropriate size of the endotracheal tube to intubate the child? (Q846758)

A. 4 mm

B. 5 mm

C. 7 mm

D. 10 mm

See Answer in Part B → Q14

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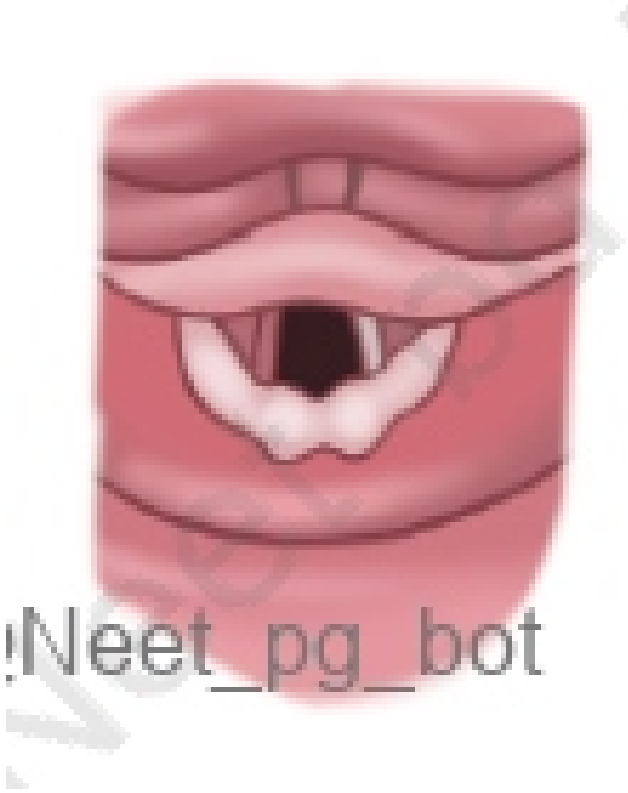
Q15: A 55-year-old male is undergoing elective surgery under general anaesthesia. During laryngoscopy for intubation, the anesthesiologist visualised the airway, as shown in the image below. According to the Cormack-Lehane classification, what grade is assigned to this view? (Q846757)

A. Grade I

B. Grade II

C. Grade III

D. Grade IV



See Answer in Part B → Q15

@Neet_pg_bot

Q16: A 50-year-old male presents with gallstones and is scheduled for a cholecystectomy. During the preoperative assessment, the anaesthetist notes the patient's airway, as visualised in the image below. According to the Mallampati classification, which class does this fall into? (Q846756)

A. Class I

B. Class II

C. Class III

D. Class IV



See Answer in Part B → Q16

@Neet_pg_bot

Q17: A 45-year-old obese female has been experiencing excessive vaginal bleeding for two months, and an ultrasound revealed uterine fibroids. She is scheduled for a hysterectomy. What is the preferred position for laryngoscopy in this case? (Q846755)

A. Sniffing position

B. Rose position

C. Lithotomy position

D. Ramped position

See Answer in Part B → Q17

@Neet_pg_bot

Q18: A 6-year-old child was brought in for an elective tonsillectomy in the operating theatre. During the procedure, the anaesthetist asked the junior resident about the appropriate laryngoscopy and its blades. Which type of laryngoscope is most preferred for this case? (Q846754)

A. McCoy Laryngoscope

B. Miller Laryngoscope

C. Macintosh Laryngoscope

D. McGrath Laryngoscope

See Answer in Part B → Q18

@Neet_pg_bot

Q19: A 56-year-old male, weighing 62 kg and with a known case of COPD, was brought in with heart failure and in a semi-conscious state. Immediate resuscitation measures were initiated. What size of laryngeal mask would be preferred for this patient? (Q846753)

A. 2.5

B. 3

C. 4

D. 6

See Answer in Part B → Q19

@Neet_pg_bot

• [17_Miscellaneous] 030 Previous Year Questions

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[17_Miscellaneous] 030 Previous Year Questions — Quick Jump

Q1 (p. 246) *Q2 (p. 246)* *Q3 (p. 247)* *Q4 (p. 247)* *Q5 (p. 247)*

Q1: A patient is scheduled for laparoscopic surgery under general anesthesia in a day care setting. Which of the following factors makes him unsuitable for day care surgery? (Q866913)

A. Home is 45 minutes away from the hospital

B. The surgical procedure is expected to last slightly over 1 hour

C. No attendant is available at home to care for the patient postoperatively

D. The patient has had general anesthesia in the past without complications

See Answer in Part B → Q1

@Neet_pg_bot

Q2: A patient undergoing surgery is administered succinylcholine for muscle relaxation. Shortly after administration, he develops hyperthermia, muscle rigidity, tremors, and tachycardia. What is the most appropriate treatment for this condition? (Q852447)

A. Neostigmine

B. Dantrolene sodium

C. Atropine

D. Midazolam

See Answer in Part B → Q2

@Neet_pg_bot

Q3: While doing a subclavian venous catheterization, the patient suddenly desaturated and on examination of the chest, there was hyper resonance in the apical area of the right lung. What is the most likely diagnosis here? (Q857781)

A. Arterial puncture

B. Pneumothorax

C. Cardiac tamponade

D. Chylothorax

See Answer in Part B → Q3

@Neet_pg_bot

Q4: A 50-year-old man with a history of hypertension and diabetes presents with sudden-onset palpitations. On examination, his heart rate is 180 beats per minute, his pulse is feeble, and his blood pressure is 90/40 mm Hg. What is the most appropriate next step in management? (Q855174)

A. IV adenosine

B. IV diltiazem

C. DC cardioversion

D. Ibutilide

See Answer in Part B → Q4

@Neet_pg_bot

Q5: Which vertebral level corresponds to Tuffier's line, a clinically relevant anatomical landmark? (Q820228)

A. L2-L3

B. L4-L5

C. L5-S1

D. L3-L4

See Answer in Part B → Q5

@Neet_pg_bot

Part B — All Answers & Explanations

• [01_Pre-Anaesthetic Evaluation] 001 Introduction And Pac

« Back to Folder Directory

[01_Pre-Anaesthetic Evaluation] 001 Introduction And Pac — Quick Jump

Q1 (p. 249) *Q2 (p. 250)* *Q3 (p. 251)* *Q4 (p. 251)* *Q5 (p. 252)* *Q6 (p. 253)*
Q7 (p. 254) *Q8 (p. 255)* *Q9 (p. 256)* *Q10 (p. 257)* *Q11 (p. 257)* *Q12 (p. 258)*
Q13 (p. 259) *Q14 (p. 259)*

Q1: Which of the following is true regarding spinal, epidural, and local anesthesia? (Q846680)

A. Epidural anesthesia is performed by injecting anesthetic into the intrathecal space.

B. Local anesthetics work by blocking calcium channels, preventing nerve impulse propagation.

C. Spinal anesthesia is commonly used for procedures above the umbilicus.

D. The absolute contraindication for local anesthesia is an allergy to the anesthetic.

Correct Answer: D. The absolute contraindication for local anesthesia is an allergy to the anesthetic.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The absolute contraindication for local anesthesia is an allergy to the anesthetic. Epidural anesthesia involves injecting an anesthetic into the epidural space to block sensory and motor spinal nerve roots. (Option A ruled out) The block is less dense than spinal. The dose and level can be titrated . If the anesthetist chooses, they can give mostly sensory block by: Using low concentrations of local anesthetic Using segmental anesthesia Works by reversibly binding sodium channels, blocking sodium entry, and inhibiting nerve impulse propagation. (Option B ruled out) Commonly used for surgeries below the umbilicus , including the lower abdomen, pelvis, perineum, and lower extremities. (Option C ruled out)

References:

www.ncbi.nlm.nih.gov/books/NBK537299

www.ncbi.nlm.nih.gov/books/NBK542219/

www.ncbi.nlm.nih.gov/books/NBK580480/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: A 65-year-old male patient with a history of severe aortic stenosis is scheduled for elective hip replacement surgery. Which of the following is an absolute contraindication for general anesthesia in this patient? (Q846681)

A. Patient refusal

B. Severe aortic stenosis

C. Mallampati class IV airway

D. All of the above

Correct Answer: A. Patient refusal

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Patient refusal is an absolute contraindication for general anesthesia in this patient. General Anesthesia: General anesthesia induces unconsciousness and blocks pain while controlling autonomic reflexes. Common side effects: Transient confusion or memory loss Dizziness Urinary retention Nausea and vomiting Chills Sore throat. Contraindications to general anesthesia: Absolute contraindications: Patient refusal. Relative contraindications: Unoptimized medical conditions before elective surgery Difficult airway Significant comorbidities such as: Severe aortic stenosis Significant pulmonary disease Congestive heart failure (CHF) Procedures that can be performed under: Regional anesthesia Neuraxial anesthesia (to avoid airway manipulation and physiologic changes of GA) Preoperative Evaluation Before General Anesthesia: Mandatory evaluation by anesthesia provider Review of: Previous anesthetic history Medical comorbidities Cardiac function Pulmonary function Renal function Pregnancy status Smoking status Optimization of medical condition prior to elective surgery Example: Unstable angina → Cardiac catheterization or CABG before elective surgery Severe aortic stenosis (Option B): Relative contraindications- Unoptimized medical conditions, difficult airway or significant comorbidities (e.g., severe aortic stenosis, pulmonary disease, CHF), procedures better suited for regional or neuraxial anesthesia to avoid airway manipulation. Mallampati class IV airway (Option C): Mallampati class III and IV indicate a difficult airway during intubation, and thus a relative contraindication of general anesthesia

References:

www.ncbi.nlm.nih.gov/books/NBK431109/

www.ncbi.nlm.nih.gov/books/NBK493199/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following is true regarding the history and development of anesthesia? (Q846682)

A. Ether was introduced by Dr. Joseph O'Dwyer in 1842.

B. Chloroform was first used by Dr. Crawford Long in 1847.

C. William Morton demonstrated the use of ether as a general anesthetic in 1846.

D. Propofol was first introduced as an anesthetic in 1932.

Correct Answer: C. William Morton demonstrated the use of ether as a general anesthetic in 1846.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: 1846: William Morton demonstrated ether as a general anesthetic at Massachusetts General Hospital. Late 1800s: Dr. Joseph O'Dwyer described endotracheal tube usage. (Option A ruled out) 1847: Dr. James Simpson introduced chloroform (used by Queen Victoria during childbirth in 1853). (Option B ruled out) 1977: Propofol, with faster recovery times, was developed. (Option D ruled out)

References:

https://pubmed.ncbi.nlm.nih.gov/22583009/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9312459/

https://www.sciencedirect.com/topics/medicine-and-dentistry/history-of-anesthesia

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 45 year old man with a history of obesity and obstructive sleep apnea presents for elective hernia repair under general anesthesia. The newly joined Junior resident was given a chance to intubate but he could not succeed. Which of the following Mallampati classes is most likely to indicate the above scenario? (Q846683)

A. Class II

B. Class I

C. Class 0

D. Class III or IV

Correct Answer: D. Class III or IV

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The Mallampati classification is used to predict the ease of intubation based on the visibility of pharyngeal structures during mouth opening and tongue protrusion. In the given scenario, the patient will have excessive soft tissue in the neck, restricting neck movement. Mallampati class III and IV indicates a difficult airway during intubation. Obesity and OSA are frequently associated with increased Mallampati scores (III/IV) , excess oropharyngeal soft tissue, reduced thyromental distance, and sometimes limited neck extension — all of which raise the chance of failed first-attempt intubation. Therefore, Class III or IV is the appropriate choice for the scenario

References:

Miller's Anaesthesia, 9th Edition, Page 925, 1379, 1396

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A 45 year old male presents for a preoperative evaluation before a scheduled elective surgery. During the airway assessment, the base of the uvula is visible, with the soft palate and hard palate clearly seen. Based on this finding, which Mallampati classification is most appropriate for this patient? (Q846685)

A. Class I

B. Class II

C. Class III

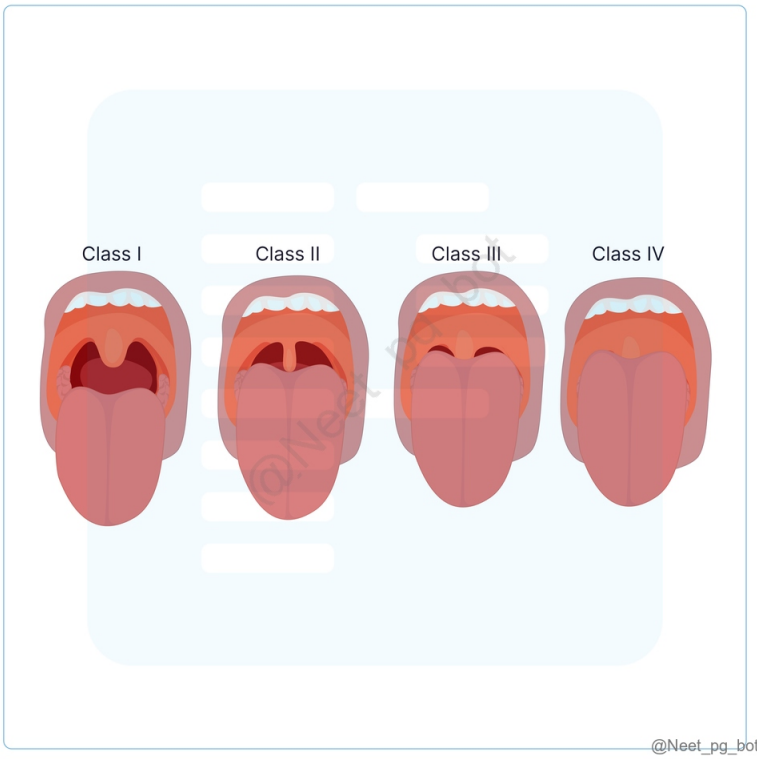
D. Class I or II

Correct Answer: C. Class III

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In this case, the base of the uvula is visible along with the soft and hard palate , which fits Class III . Mallampati Classification Summary (Mnemonic - PUSH - Pillars, Uvula, Soft palate, Hard palate) Class Visible Structures Class I (Options A & D) Hard palate, soft palate, tonsillar pillars, uvula body, base, and tip are visible Class II (Option D) Hard palate, soft palate, uvula body & base, and tonsillar pillars visible (Uvula tip not visible) Class III (Option C) Only the hard palate, soft palate, and base of the uvula are visible (the Uvula body and tip are not visible) Class IV Only the hard palate is visible



References:

Miller's Anaesthesia, 9th Edition, Page 925, 1379, 1396

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: Which interincisor distance in centimeters is considered an indicator of potential difficulty for intubation? (Q846686)

A. 3 cm or less

B. 5 cm or more

C. 6 cm or more

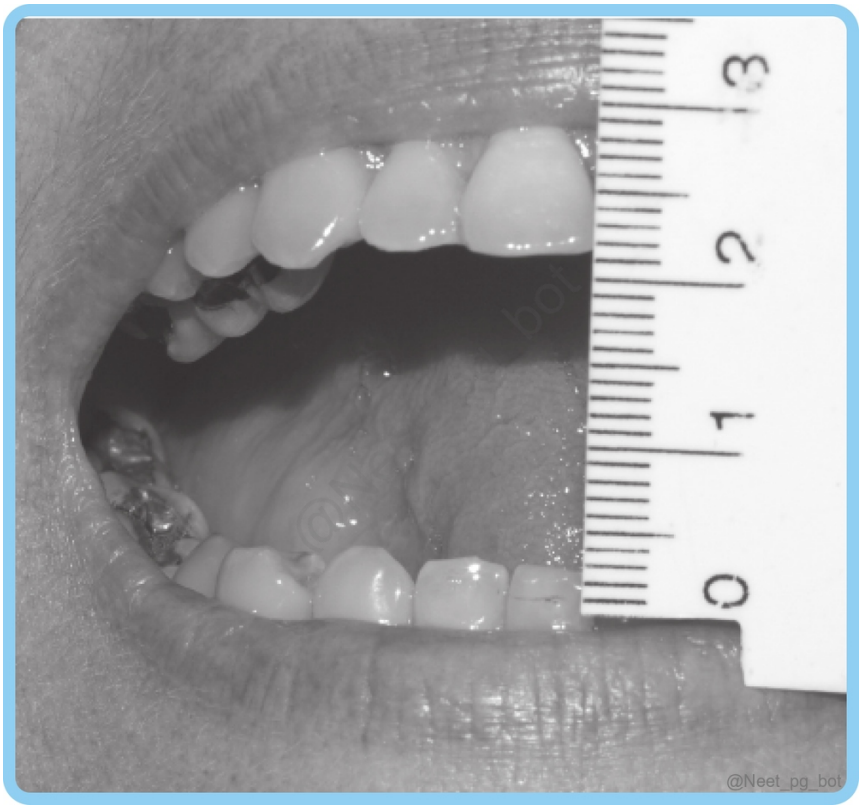
D. 8 cm or less

Correct Answer: A. 3 cm or less

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Inter-incisor distance refers to the distance between the upper and lower incisors when the mouth is maximally opened. Normal Range The average interincisor distance for adults is usually around 4-5 cm (40-50 mm). Significance in Intubation An interincisor distance of less than 3 cm (2 fingerbreadths) is often considered a potential indicator of difficult intubation. Related Conditions Conditions such as temporomandibular joint dysfunction (TMD), jaw trauma, or other musculoskeletal issues can result in a reduced interincisor distance.



References:

Interincisior distance Miller's Anesthesia, 9th Edition, Page 1379

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: What position should the patient's head be in to measure the sternomental distance accurately? (Q846690)

A. Neck flexed, chin down

B. Neck extended, mouth open

C. Neck fully extended, mouth closed

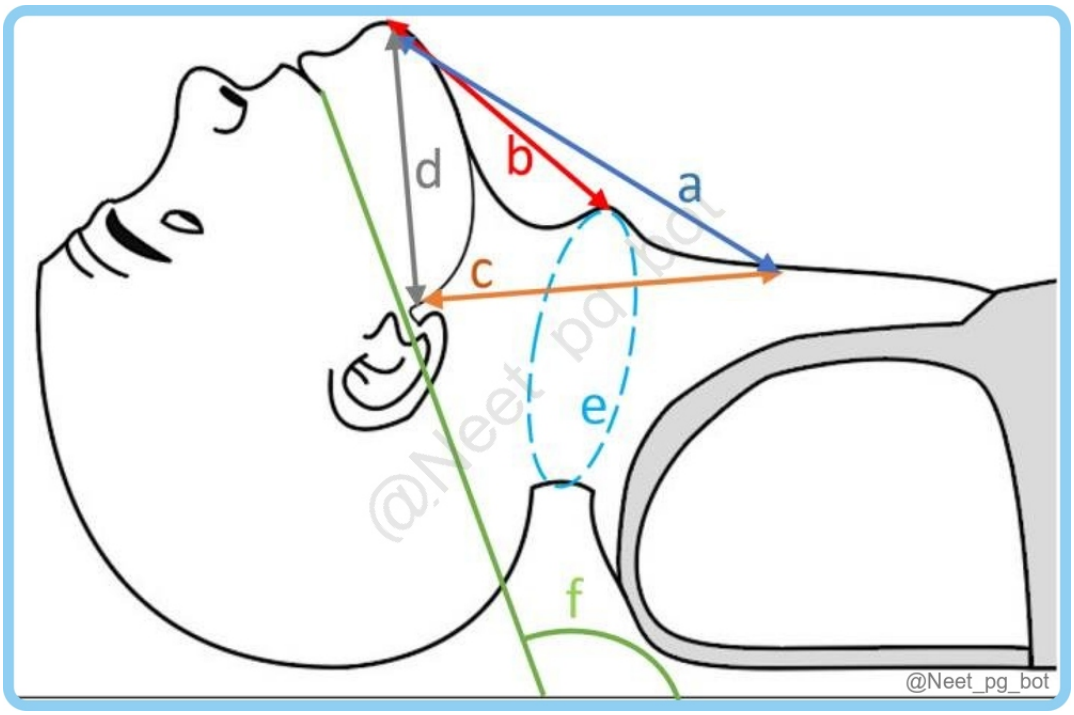
D. Neutral neck position

Correct Answer: C. Neck fully extended, mouth closed

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Measured with the patient's neck fully extended, mouth closed , and head tilted back. A normal sternomental distance is generally greater than 12.5-13.5 cm. A distance of less than 12 cm is associated with difficult airway management. A shorter sternomental distance suggests limited head and neck mobility, potentially indicating difficult intubation. Thyromental distance: The straight line distance from the thyroid notch (Adam's apple) to the lower border of mentum (tip of the chin). Normal thyromental distance is >6.5 cm.



References:

Sternomental and thyromental distance Miller's Anesthesia, 9th Edition, Page 1379.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 2 year old child is scheduled for an elective surgery requiring general anesthesia. The child last had a bottle of breast milk 3 hours ago. According to current fasting guidelines for pediatric patients, what is the appropriate next step regarding the child's fasting status before anesthesia? (Q846693)

A. The child can be taken for surgery immediately since it has been 3 hours since the last feed.

B. The child should wait at least 4 hours from the last breast milk feed before undergoing anesthesia.

C. The child should not have anything to eat or drink for at least 8 hours before the procedure.

D. The child is allowed clear liquids until 4 hours prior to the surgery.

Correct Answer: B. The child should wait at least 4 hours from the last breast milk feed before undergoing anesthesia.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The recommended fasting period after breast milk consumption is 4 hours before anesthesia. Fasting Guidelines in Children 6 hours for formula milk 4 hours for breast milk 2 hours for clear fluids

References:

Miller's Anesthesia, 9th Edition, Page 1381

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: Which of the following conditions is least likely to be associated with an increased risk of aspiration despite fasting in general anesthesia? (Q846695)

A. Hiatal hernia

B. Cerebral palsy

C. Multiple sclerosis

D. Patient after Nissen fundoplication surgery

Correct Answer: D. Patient after Nissen fundoplication surgery

■ *Listen to Audio 1*

Explanation: Nissen fundoplication surgery: This procedure reinforces the lower esophageal sphincter (LES), reducing or eliminating gastroesophageal reflux, and thus lowering the risk of aspiration. Conditions at High Risk of Aspiration Despite Fasting Neurological Disorders Cerebral Palsy (Option B) Stroke Multiple Sclerosis (Option C) Amyotrophic Lateral Sclerosis (ALS) Neuromuscular Disorders Myasthenia Gravis or Muscular Dystrophy Gastroesophageal Reflux Disease (GERD) Increased Risk of Reflux Obesity Increased Abdominal Pressure Hiatal Hernia (Option A) Exacerbate gastroesophageal reflux, increasing the potential for aspiration, especially when lying down. Pregnancy Hormonal Changes and Increased Abdominal Pressure Diabetes Mellitus with

Gastroparesis Delayed Gastric Emptying Elderly Population Age-Related Changes: Result in decreased swallowing efficiency and increased susceptibility to aspiration.

References:

Miller's Anesthesia, 9th Edition, Page 1381

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Which of the following medications is NOT typically discontinued prior to general anesthesia? (Q846696)

A. Metformin

B. Sulfonylureas

C. SGLT2 inhibitors

D. Calcium channel blockers

Correct Answer: D. Calcium channel blockers

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Calcium channel blockers are generally continued through the perioperative period Medications stopped before administering general anesthesia: MOA inhibitors Clopidogrel Lithium Oral hypoglycemic drugs TCA Heparin and warfarin Smoking Medication that can be given or continued: Anti-hypertensives (except ARBs, ACEIs) Anti-cholesterol Anti-epileptics Anti-thyroids

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8520037/

Miller's Anesthesia, 9th Edition, Page 929

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: A 68 year old male with atrial fibrillation, on chronic warfarin therapy for stroke prevention, is scheduled for elective hip replacement surgery. How many days prior to the surgery should the warfarin be stopped? (Q846697)

A. 2-5 days

B. 1 day

C. 7 days

D. 10 days

Correct Answer: A. 2-5 days

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Warfarin should be stopped 5 days before elective surgery to allow INR to fall below 1.5, minimising bleeding risk. INR is reassessed before surgery to ensure it is safe to proceed. Bridging anticoagulation (e.g., with LMWH) is considered for patients at high thromboembolic risk. 1 day (Option B) : Too short. INR would still be elevated, increasing bleeding risk. 7 days (Option C) : Longer than needed in most cases; not routinely necessary. 10 days (Option D) : Excessively long and may unnecessarily increase thrombotic risk.

References:

Barash Clinical Anesthesia, 9th Edition, PDF reader, Pages 1794-1795

Miller’s Anesthesia, 9th Edition, Page 936

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464262/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: Which of the following drugs can be continued perioperatively? (Q846698)

A. Antithyroid

B. Antiepileptic

C. Antidepressants

D. All of the above

Correct Answer: D. All of the above

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Drug Continued or stopped preoperatively Antithyroid Continued Antiepileptic Continued Antidepressants Continued Smoking Stop at least 6-8 weeks prior Steroid Continued Anticonvulsants Continued

Monoamine Oxidase Inhibitors (MAOIs) Discontinue 2-3 weeks before surgery Oral Contraceptive Pill Discontinue at least 6 weeks before Herbal Supplements Discontinue at least 2 weeks before surgery Note: Ayurvedic medicine: Stop 2 weeks before surgery All psychiatric meds continue except Lithium: Stop 48 hrs before surgery MAO Inhibitors/ TCA: Stop 3 weeks before surgery

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th Edition, Pages 1113, 999, 1167, 1153, and 1418

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464262/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: A 30 year old primigravida is scheduled for elective cholecystectomy. Which ASA category does she belong to? (Q846699)

A. Class 1

B. Class 2

C. Class 3

D. Class 4

Correct Answer: B. Class 2

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The ASA (American Society of Anesthesiologists) Physical Status Classification system categorises patients based on their preoperative health . A pregnant woman , even without any systemic illness, is classified as ASA class 2 , because pregnancy itself is considered a systemic physiological change.

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th Edition, PDF Pages 547-548

https://www.asahq.org/standards-and-practice-parameters/statement-on-asa-physical-status-classification-system

https://www.ncbi.nlm.nih.gov/books/NBK549785/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 30 year old female patient is undergoing routine laparoscopic appendectomy under general anesthesia. During laryngoscopy, the anesthesiologist can visualize the entire laryngeal aperture. What is the Cormack-Lehane grading of this laryngoscopic view? (Q846700)

A. Grade 1

B. Grade 2

C. Grade 3

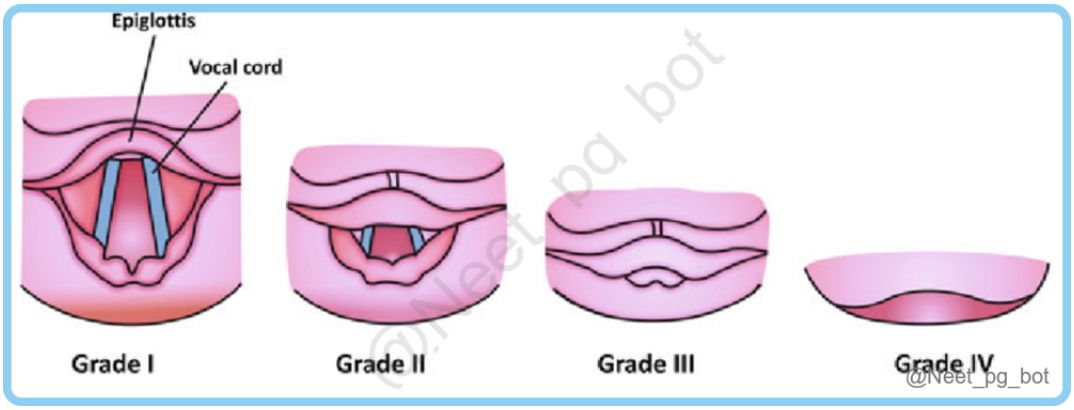
D. Grade 4

Correct Answer: A. Grade 1

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Cormack-Lehane grading system for laryngoscopic view: Grade 1: Entire laryngeal aperture visible (best view) Grade 2: Posterior portion of laryngeal aperture visible Grade 3: Only the epiglottis is visible Grade 4: No structures visible (the most difficult view)



References:

Miller's Anesthesia, 9th Edition, Pages 1396-1397

↑ *Back to this question in Part A*

@Neet_pg_bot

• [01_Pre-Anaesthetic Evaluation] 002 Previous Year Questions

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[01_Pre-Anaesthetic Evaluation] 002 Previous Year Questions — Quick Jump

Q1 (p. 261) *Q2 (p. 262)* *Q3 (p. 262)* *Q4 (p. 263)* *Q5 (p. 264)* *Q6 (p. 265)*
Q7 (p. 267) *Q8 (p. 268)* *Q9 (p. 269)* *Q10 (p. 269)* *Q11 (p. 270)* *Q12 (p. 271)*
Q13 (p. 272)

Q1: A 68-year-old patient scheduled for elective total hip replacement is taking aspirin, enalapril, a multivitamin, and metoprolol. Surgery is planned in 5 days. What is the most appropriate perioperative medication management for this patient? (Q852455)

A. Stop enalapril 24 hours before surgery

B. Stop aspirin to minimize perioperative bleeding risk

C. Stop metoprolol to increase cardiac output

D. Increase aspirin dosage for additional analgesic benefit

Correct Answer: B. Stop aspirin to minimize perioperative bleeding risk

Explanation: For most elective orthopedic surgeries (such as total hip replacement), aspirin should be stopped 5–7 days before surgery to reduce the risk of perioperative bleeding, unless there is a strong cardiovascular indication (such as recent coronary stent placement or high-risk vascular disease). ACE inhibitors such as enalapril should generally be continued until the day before surgery , but omit the morning dose on the day of surgery . (Option A ruled out) Medication discontinuation before surgery Drug Continued or stopped preoperatively Antithyroid Continued Antiepileptic Continued Antidepressants Continued Aspirin Stop 5–7 days before surgery (except high CV risk) Beta Blockers Continued Smoking Stop at least 6-8 weeks prior Steroid Continued Anticonvulsants Continued Monoamine Oxidase Inhibitors (MAOIs) Discontinue 2-3 weeks before surgery Oral Contraceptive Pill Discontinue at least 6 weeks before Herbal Supplements Discontinue at least 2 weeks before surgery ACE Inhibitors (Enalapril) Continue until surgery; omit morning dose on day of operation Angiotensin II Receptor Blockers (ARBs) (Telmisartan) Stop 24 hours before surgery Calcium Channel Blockers (Amlodipine) Continue Diuretics Often withheld on day of surgery Stop metoprolol to increase cardiac output (Option C) would be inappropriate and potentially dangerous. Must be continued perioperatively to avoid rebound hypertension, tachycardia, and ischemia. Abrupt beta-blocker discontinuation perioperatively significantly increases the risk of sympathetic hyperactivity, tachycardia, hypertension, myocardial ischemia, and mortality.

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th Edition, Page 1113, 999, 1167, 1153, and 1418
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2464262/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which of the following comes under ASA grade 1? (Q860368)

A. Healthy patient

B. Mild disease

C. Moderate disease

D. Morbid patient

Correct Answer: A. Healthy patient

Explanation: This classification is used to describe patients who are completely healthy and free from systemic illness, without any comorbidities. Such patients are typically considered at minimal risk for anesthesia-related complications. American Society of Anesthesiologists physical status classification of patients: Class Definition 1 Normal healthy patient (Option A) 2 Patient with mild systemic disease (no functional limitations), normal pregnancy (Option B) 3 Patient with severe systemic disease (some functional limitations) 4 Patient with severe systemic disease that is a constant threat to life (functionality incapacitated) 5 Moribund patient who is not expected to survive without the operation (Option D) 6 Brain-dead patient whose organs are being removed for donor E If the procedure is an emergency, the physical status is followed by "E" (e.g., "2E") Other incorrect options: Moderate disease (Option C): Is not a part of the ASA classification.

References:

Morgan and Mikhail's Clinical Anesthesiology 7th edition, PDF pages 547-548

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following corresponds to ASA grade III? (Q857322)

A. Moribund patient

B. Patient having systemic illness which is under control or without any functional limitations

C. Patient having systemic illness which is not under control or with functional limitations

D. Patient having systemic illness which is a constant threat to life

Correct Answer: C. Patient having systemic illness which is not under control or with functional limitations

Explanation: American Society of Anesthesiologists physical status classification of patients: Class Definition 1 Normal healthy patient 2 Patient with mild systemic disease (no functional limitations), normal pregnancy 3 Patient with severe systemic disease (some functional limitations) 4 Patient with severe systemic disease that is a constant threat to life (functionality incapacitated) 5 Moribund patient who is not expected to survive without the operation 6 Brain-dead patient whose organs are being removed for donor E If the procedure is an emergency, the physical status is followed by “E” (e.g., “2E”)

References:

Morgan and Mikhail’s Clinical Anesthesiology 7th edition, PDF pages 547-548

https://www.asahq.org/standards-and-practice-parameters/statement-on-asa-physical-status-classification-system

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Which of the following is the drug of choice for preoperative antibiotic prophylaxis in a patient undergoing cardiac surgery? (Q855613)

A. Penicillin G

B. Erythromycin

C. Azithromycin

D. Cefazolin

Correct Answer: D. Cefazolin

Explanation: Cefazolin is a first-generation cephalosporin antibiotic commonly used for preoperative antibiotic prophylaxis in patients undergoing cardiac surgery. It works by inhibiting the growth and multiplication of bacteria that can cause surgical infections. Antibiotic Prophylaxis Before Surgery Type of Procedure Common Pathogens Preferred Regimen Severe beta-lactam allergy, or high risk of MRSA Cardiac Staphylococcus Cefazolin Vancomycin Gastrointestinal (Esophageal, gastroduodenal PEG placement) Biliary, including lap cholecystectomy Enteric gramnegative bacilli, grampositive cocci Cefazolin Clindamycin + Gentamicin Colorectal Enteric GNR, Enterococcus, Anaerobes, Staphylococcus Cefoxitin OR Ceftriaxone + Metronidazole Clindamycin + Gentamicin Head and neck surgery including oral surgery Anaerobes, enteric gram negative bacilli, S.aureus Cefazolin Clindamycin + Gentamicin Neurosurgery S.epidermidis, S. aureus Cefazolin Vancomycin Thoracic (Lung resection, VATS) S. aureus, S. epidermidis, streptococci, enteric gramnegative bacilli Cefazolin OR Clindamycin Vancomycin Genotiurinary Enteric gramnegative bacilli, anaerobes, enterococci Cefazolin OR Cefoxitin OR Ampicillin + Metronidazole + Gentamicin Clindamycin + Gentamicin

Penicillin G (Option A): It isn't often used in cardiac surgery prophylaxis due to its limited spectrum of activity, which doesn't cover all potential infection-causing bacteria. Erythromycin (Option B): It isn't commonly used in cardiac surgery prophylaxis because it's less effective than other antibiotics in preventing surgical infections. Azithromycin (Option C): It isn't commonly used in cardiac surgery prophylaxis because it's ineffective against all bacteria that can cause surgical infections.

References:

https://www.choc.org/userfiles/AntibioticProphylaxisForSurgeryGuideline.pdf

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: In a 45-year-old patient undergoing a preoperative assessment for a surgical procedure, which classification of Mallampati score is assigned based on the following description: Hard palate, soft palate, uvula, tip of the uvula, and tonsil pillars are visible. No oropharyngeal structures are obstructing the view. (Q857819)

A. Grade I

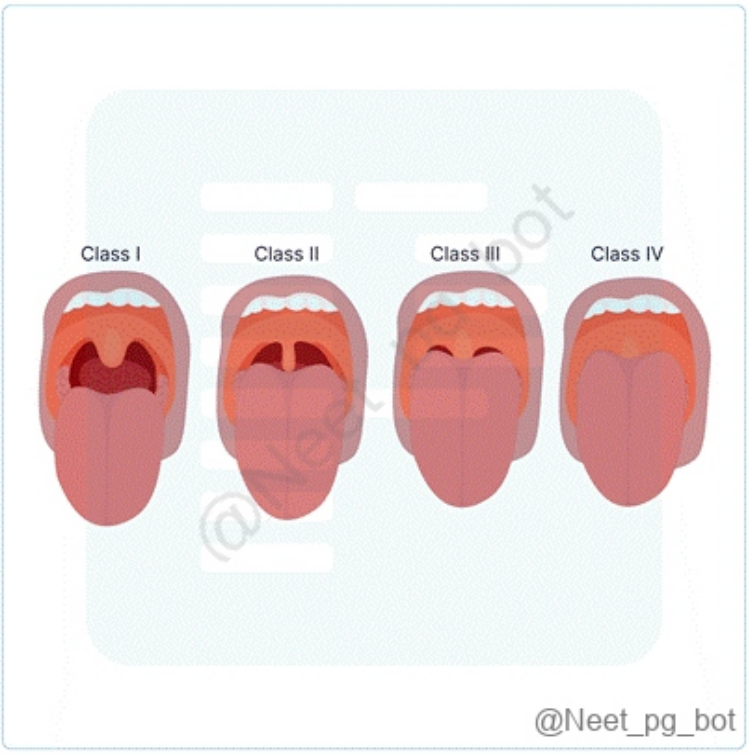
B. Grade II

C. Grade III

D. Grade IV

Correct Answer: A. Grade I

Explanation: In the scenario described, the entire soft palate, uvula, pillars, and tonsillar region can be seen without any obstruction. The correct classification is Grade I. This indicates an optimal airway visualization and ease of intubation. The Mallampati classification is used to predict the ease of intubation based on the visibility of pharyngeal structures during mouth opening and tongue protrusion. Mallampati Classification: (Mnemonic - PUSH - Pillars, Uvula, Soft palate, Hard palate) Class I: Faucial pillars, uvula, soft palate, and hard palate are visualized. Class II: The base of the uvula, soft palate, and hard palate are visualized. (Option B) Class III: Soft palate and hard palate are visualized. (Option C) Class IV: Hard palate only is visualized. (Option D) Class 0: Any part of the epiglottis is visible (easy laryngoscopy with difficult airway management)



References:

Miller's Anaesthesia 9th Edition pages: 925, 1379, 1396

↑ *Back to this question in Part A*

@Neet_pg_bot

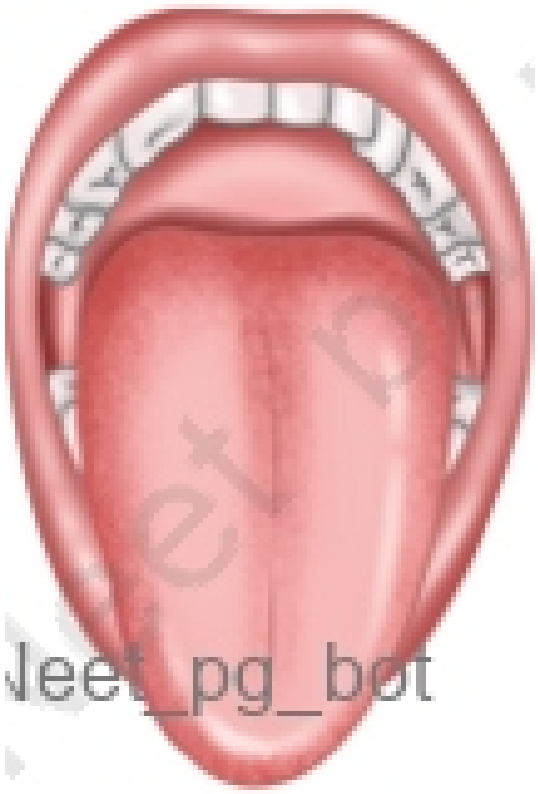
Q6: A patient undergoing airway assessment is asked to fully open their mouth. Using the image shown, determine the Mallampati classification observed. (Q857045)

A. Mallampati class IV

B. Mallampati Class II

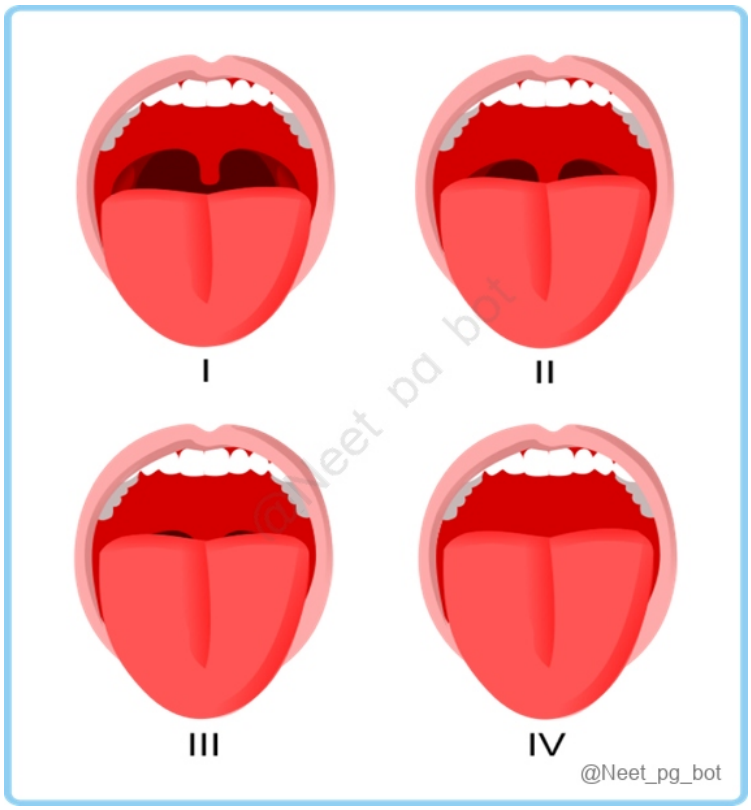
C. Mallampati class III

D. Mallampati class I



Correct Answer: A. Mallampati class IV

Explanation: The picture shows Mallampati Class IV as hard palate is visible. Modified Mallampati scoring Class 0 Any part of the epiglottis is visible Class I Faucial pillars, uvula, and soft palate are visualized. (Option D ruled out) Class II Uvula and soft palate are visualized. Tip of uvula is not visualized. (Option B ruled out) Class III Only Soft palate and base of the uvula are visible. (Option C ruled out) Predict difficult intubation Class IV Only hard palate is visible. {{caption_text}}



References:

Miller Anaesthesia. 9th edition. Pg. 1379

Mallampati Score - StatPearls - NCBI Bookshelf

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Preoperative assessment of oral cavity for endotracheal intubation in an adult is done by: (Q857067)

A. Mallampatti score

B. Conmack lehane

C. ASA grading

D. AHA grading

Correct Answer: A. Mallampatti score

Explanation: This score is used to evaluate the oral cavity preoperatively to predict the ease of endotracheal intubation. It is based on visualisation of the oropharyngeal structures (soft palate, uvula, and tonsillar pillars) when the patient opens their mouth widely without phonating. It is categorised into four classes, with higher classes indicating a more difficult airway. It is the standard tool for assessing oral cavity and airway accessibility. Cormack-Lehane (option B): This grading system evaluates the laryngeal view during direct laryngoscopy, not during the preoperative oral cavity assessment. It is useful for classifying intubation difficulty once the laryngoscope is in place. ASA grading (option C): The American Society of Anesthesiologists (ASA) grading assesses a patient's physical status to estimate perioperative risk, not specifically for airway assessment. AHA grading (option D): This grading does not exist for airway or oral cavity assessment and is irrelevant in this context.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC8022073/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: How long should elective surgery be deferred for a patient who had a cough and fever, after he has recovered from COVID-19, and has not required any hospitalization? (Q856585)

A. 6 weeks

B. 8-10 weeks

C. 12 weeks

D. 4 weeks

Correct Answer: A. 6 weeks

Explanation: For a patient who has recovered from COVID-19 and has not required hospitalization, elective surgery should typically be deferred for 6 weeks. Studies suggest that performing surgery within 6 weeks of a COVID-19 diagnosis may be associated with increased postoperative complications . Delaying surgery beyond this period can reduce such risks. Time since COVID-19 infection Recommendation Less than 2 Weeks Elective surgeries should not occur within two weeks of a COVID-19 infection, allowing anesthesiologists and surgeons to assess the severity of the patient's symptoms and reduce unnecessary risk of transmitting the infection to healthcare professionals. 2 to 7 Weeks Between two and seven weeks after the patient's COVID-19 infection, anesthesiologists and surgeons should conduct a risk assessment, considering factors such as age, comorbidities, severity of the infection, and surgical risk. If the patient and surgery are determined to be low risk, the procedure may be scheduled during this period after thorough discussion and shared decision-making with the patient. More than 7 Weeks Delay of the surgery beyond seven weeks should be considered if the patient continues to have COVID-19 symptoms or other health concerns that may increase the risk of proceeding with surgery. Incorrect Options: 8-10 weeks (Option B): Delaying elective surgery for 8-10 weeks post-COVID-19 recovery may further

reduce postoperative risks, especially in patients with persistent symptoms or those who had severe infections. 12 weeks (Option C): While a 12-week delay might be considered for patients with severe or prolonged symptoms, current guidelines do not universally recommend such an extended delay for all patients. 4 weeks (Option D): Undergoing elective surgery within 4 weeks of a COVID-19 diagnosis is generally associated with higher risks of postoperative complications. A minimum delay o f 6-7 weeks is recommended to mitigate these risks.

References:

https://www.asahq.org/about-asa/newsroom/news-releases/2023/06/asa-and-apsf-release-updated-recommendations-for-elective-surgery-after-covid-19-infection ?

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: What is the purpose of using glycopyrrolate as a pre-anesthetic agent? (Q857025)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

Correct Answer: A. Reducing the secretions

Explanation: Glycopyrrolate is primarily used as a pre-anesthetic agent for reducing secretions in the respiratory tract and other body systems. It belongs to a class of drugs called anticholinergics, which work by inhibiting the effects of acetylcholine, a neurotransmitter involved in various bodily functions. In the context of anesthesia, excessive secretions in the respiratory tract can interfere with the airway management and ventilation during surgery. By administering glycopyrrolate before anesthesia, the production of respiratory secretions is reduced, improving the visibility of the surgical field and facilitating proper respiratory function. Sedative effect (Option B): Glycopyrrolate is not as a sedative. Propofol and ketamine are examples of sedatives. Skeletal muscle relaxant (Option C): Glycopyrrolate is not used as a skeletal muscle relaxant. Rocuronium and succinylcholine are examples of skeletal muscle relaxants. Anxiolytic (Option D): Glycopyrrolate is not used as an anxiolytic. Benzodiazepines are used as anxiolytics.

References:

Miller's Anaesthesia, 7 th Edition

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Which investigation yields the most precise prognostic information for predicting the risk of perioperative cardiac complications among the options provided? (Q854891)

A. Exercise ECG testing

B. Dobutamine stress echocardiography

C. Myocardial perfusion scintigraphy

D. Coronary angiography

Correct Answer: B. Dobutamine stress echocardiography

Explanation: Dobutamine stress echocardiography provides precise prognostic information for perioperative cardiac complications by directly assessing myocardial function under stress conditions. It evaluates myocardial ischemia and viability, which are critical for assessing perioperative cardiac risk, especially in patients undergoing non-cardiac surgery. Key points: High sensitivity : Dobutamine stress echocardiography is highly sensitive in detecting inducible ischemia, a critical predictor of perioperative cardiac complications. Risk stratification : It aids in stratifying patients undergoing major noncardiac surgery by assessing cardiac function under stress, ensuring appropriate management and intervention. Proven efficacy : Studies demonstrate its superior ability to predict postoperative outcomes compared to traditional clinical assessments, enhancing decision-making and patient safety. Incorrect Options: Exercise ECG testing (option A): While useful in detecting ischemic changes during physical stress, it has lower sensitivity and specificity compared to imaging modalities. It is also less effective in patients unable to exercise adequately or with baseline ECG abnormalities. Myocardial perfusion scintigraphy (option C): This test evaluates myocardial perfusion and ischemia but is less commonly used compared to stress echocardiography for perioperative cardiac risk stratification. It is more useful for chronic ischemia than acute risk prediction. Coronary angiography (option D): While this is the gold standard for diagnosing coronary artery disease, it is invasive and not typically used solely for perioperative risk assessment unless clinically indicated, such as in symptomatic or high-risk patients.

References:

Miller’s Anesthesia, 9th Edition, Page 1965

Miller’s Anesthesia, 8th Edition, Page 1095

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 530

https://pubmed.ncbi.nlm.nih.gov/10807472/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: Preoperative assessment of oral cavity for endotracheal intubation in an adult is done by: (Q859741)

A. Mallampatti score

B. Conmack lehane

C. ASA grading

D. AHA grading

Correct Answer: A. Mallampatti score

Explanation: This score is used to evaluate the oral cavity preoperatively to predict the ease of endotracheal intubation. It is based on visualisation of the oropharyngeal structures (soft palate, uvula, and tonsillar pillars) when the patient opens their mouth widely without phonating. It is categorised into four classes, with higher classes indicating a more difficult airway. It is the standard tool for assessing oral cavity and airway accessibility. Incorrect Options: Cormack-Lehane (option B): This grading system evaluates the laryngeal view during direct laryngoscopy, not during the preoperative oral cavity assessment. It is useful for classifying intubation difficulty once the laryngoscope is in place. ASA grading (option C): The American Society of Anesthesiologists (ASA) grading assesses a patient's physical status to estimate perioperative risk, not specifically for airway assessment. AHA grading (option D): This grading does not exist for airway or oral cavity assessment and is irrelevant in this context.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC8022073/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: In a 45-year-old patient undergoing a preoperative assessment for a surgical procedure, which classification of Mallampati score is assigned based on the following description: Hard palate, soft palate, uvula, tip of the uvula, and tonsil pillars are visible. No oropharyngeal structures are obstructing the view. (Q820224)

A. Grade I

B. Grade II

C. Grade III

D. Grade IV

Correct Answer: A. Grade I

Explanation: Correct Option A- Grade I: In the scenario described, the entire soft palate, uvula, pillars, and tonsillar region can be seen without any obstruction. The correct classification is Grade I. This indicates an optimal airway visualization and ease of intubation. Incorrect Options: Option B- Grade II: Hard palate, soft palate, uvula, and tonsil pillars are visible. The tip of the uvula is not visible. Option C- Grade III: Hard palate, soft palate, base of the uvula are visible. Option D- Grade IV: Only hard palate is visible.

References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: What is the appropriate preoperative fasting recommendation? (Q793415)

A. 4 hours for solids in adults

B. 2 hours for liquids in adults

C. 2 hours for breast milk in infants

D. 4 hours for solids in infants

Correct Answer: B. 2 hours for liquids in adults

Explanation: Correct Option B: 2 hours for liquids in adults A preoperative fasting period is a time prescribed before any procedure that involves general anesthesia, sedation, or regional anesthesia. The collective fasting recommendation is two hours for clear and light liquids, four hours for breast milk, and six hours for solid foods, infant formula, light meals, and non-human milk. Incorrect Options: Option A: 4 hours for solids in adults Eight hours of preoperative fasting is recommended for solid food in adults. Option C: 2 hours for breast milk in infants Four hours of preoperative fasting is recommended for breast milk. Option D: 4 hours for solids in infants It is recommended 6 hours for solid foods in preoperative fasting before anesthesia. It should be kept in mind that cereal and baby food are solid foods.

References:

Morgan and Mikhail's anaesthesiology, 5th edition

↑ *Back to this question in Part A*

@Neet_pg_bot

• [02_Local Anaesthetics] 003 Local Anaesthetics - I

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[02_Local Anaesthetics] 003 Local Anaesthetics - I — Quick Jump

Q1 (p. 273) *Q2 (p. 273)* *Q3 (p. 274)* *Q4 (p. 275)* *Q5 (p. 276)* *Q6 (p. 277)*
Q7 (p. 277) *Q8 (p. 278)* *Q9 (p. 279)* *Q10 (p. 279)* *Q11 (p. 280)* *Q12 (p. 281)*
Q13 (p. 282)

Q1: Which of the following drugs is not metabolized by plasma esterases? (Q846724)

A. Procaine

B. Chloroprocaine

C. Tetracaine

D. Cocaine

Correct Answer: D. Cocaine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Cocaine is metabolized by hepatic carboxylesterase Amino Ester Local Anesthetic Metabolism Procaine Metabolized by plasma esterases Chloroprocaine Metabolized by plasma esterases Tetracaine Metabolized by plasma esterases Cocaine Metabolized predominantly by hepatic carboxylesterase

References:

Miller’s Anesthesia, 9th Edition, Pages 865, 875, 886

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: A patient with known alcoholic liver disease is scheduled for a dental extraction. Which of the following local anaesthetics can be safely administered to this patient? (Q846725)

A. Lignocaine

B. Articaine

C. Bupivacaine

D. Mepivacaine

Correct Answer: B. Articaine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: All the following drugs (in options) belong to Aminoamides group of local anesthetics. All aminoamides undergo Enzymatic degradation in Liver except Articaine - undergoes metabolism by Plasma cholinesterase. In a patient with Liver disease, aminoamide that can be safely administered is Articaine, which is also usually preferred for short dental procedures. Aminoamides: Mechanism of Action (MOA): Aminoamides work by stabilizing neuronal membranes . Their primary target is the Voltage-Gated Sodium Channel (VGSC) . Process: The drug enters the nerve cell membrane in an uncharged state, then re-ionizes inside. Effect: It binds to the internal receptor of the channel, blocking Na + influx. This prevents depolarization and stops the nerve from sending pain signals. Aminoesters & Aminoamides: Aminoesters (1 “i” in names) Aminoamides (2 “i” in names) Drugs Procaine Chloroprocaine Tetracaine Cocaine Lidocaine Mepivacaine Prilocaine Bupivacaine Ropivacaine Duration of action & stability Short ; stable Long ; unstable in solution Metabolism Plasma cholinesterase Exception: Cocaine (metabolized in liver) Enzymatic degradation in Liver Exception: Articaine (undergoes metabolism by plasma cholinesterase) Metabolism rate Rapidly metabolized: Chloroprocaine Rapidly metabolized rate: Lignocaine > Mepivacaine > Bupivacaine Allergic potential Maximum with Prilocaine and Benzocaine -

References:

Miller’s Anaesthesia, 9th Edition, Pages 875, 883.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: What is the mechanism of action of the given drug? (Q846727)

A. Blocks Na + channels

B. Blocks K + channels

C. Both (1) & (2)

D. Blocks Cl - channels



Correct Answer: A. Blocks Na + channels

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image shown is Bupivacaine , a local anesthetic. All local anesthetics act by inhibiting Na+ channels. Bupivacaine blocks inactivation gates of Na + channels → Disrupts depolarisation → No action potential generated → No pain sensation. Bupivacaine does not primarily block K■ or Cl■ channels . K■ channels regulate repolarization, and Cl■ channels mediate inhibitory signaling; bupivacaine's effects on these are minimal and not clinically significant.

References:

Miller's Anaesthesia, 9th Edition, Page 875,883

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: All among the following are true about adding Adrenaline with Lignocaine except: (Q846731)

A. Increases the duration of action

B. Decreases blood loss

C. Contraindicated in patients with cardiovascular disease

D. Increases the rate of systemic absorption

Correct Answer: D. Increases the rate of systemic absorption

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Adding Adrenaline (Epinephrine) with Lignocaine decreases the rate of systemic absorption of Lignocaine and thereby decreases the effects of systemic toxicity of Lignocaine. Effects of adding Epinephrine Local Anesthetics: Increases the duration of action (Option A) Decreases the rate of systemic absorption (Option D) Decreases toxicity Decreases blood loss (Option B) Increases the risk of arrhythmia (increases peripheral vascular resistance) Contraindicated in patients with cardiovascular diseases as it increases the heart rate and blood pressure (Option C).

References:

Barash Clinical Anesthesia, 9th Edition, Pages 1690-1694.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A patient following an RTA presented with multiple lacerations over the forearm and knee regions, which were sutured under LA. A few minutes after suturing, he complained of lightheadedness and dizziness, which was followed by an episode of seizure. On examination, his vitals were: HR- 58 bpm; BP- 88/50 mmHg. What is the definitive management for this patient? (Q846734)

A. Perform urgent CT head

B. Administer IV Lorazepam

C. Give 20% intralipid solution

D. Airway management and ventilation

Correct Answer: C. Give 20% intralipid solution

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical scenario is suggestive of Local anesthetic associated Systemic toxicity (LAST) that has led to CNS (dizziness, seizures) and cardiac effects (bradycardia, hypotension. The definitive management would

be to administer a 20% Intralipid solution . Bolus: 1.5 mL/kg over 2-3 min. Infusion: at 0.25 mL/kg/min-0.5ml/kg/min for 15-20 mins Maximum initial dose: 12 ml/kg Perform Urgent CT Head (Option A) is not required at this stage, as there is no history of trauma to the head, and the symptoms started a few minutes after administration of local anesthesia. Administer IV Lorazepam (Option B) and Airway management and ventilation (Option D) : Although a part of the management protocol, it is not the definitive management in this case.

References:

Barash Clinical Anesthesia, 9th Edition, Pages 1706-1721

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: Anesthetist decides to administer Lignocaine with adrenaline for epidural analgesia. Choose the correct pair of concentration of Lignocaine and the concentration ratio when used with adrenaline. (Q846741)

A. 1% - 1:100,000

B. 1% - 1:200,000

C. 5% - 1:200,000

D. 5% - 1:100,000

Correct Answer: B. 1% - 1:200,000

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ideal concentration of Lignocaine when given epidurally is 1-2% and the concentration ratio with Adrenaline for Lignocaine/Bupivacaine/Prilocaine is 1:200,000 . Concentrations of Lignocaine: Route of administration Concentration Intravenous regional anesthesia (IVRA) 0.5% Epidural 1-2% (Option B) Spinal 5% Concentration of adrenaline (epinephrine): Anaphylactic shock 1:1000 IM 0.5 mg IM or SC Cardiac arrest 1:10,000 IV 1mg IV Local anesthetic 1:200,000 (Option B)

References:

Miller’s Anaesthesia, 9th Edition, Pages 878-882

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Cocaine exerts its local anesthetic action by blocking which ion channel? (Q846743)

A. Potassium channels

B. Calcium channels

C. Sodium channels

D. Chloride channels

Correct Answer: C. Sodium channels

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Cocaine is an aminoester local anesthetic Mechanism of Action: Blocks sodium channels to inhibit nerve impulses and inhibits reuptake of dopamine, norepinephrine, and serotonin, resulting in CNS stimulant effects.

References:

www.ncbi.nlm.nih.gov/books/NBK430769/

www.ncbi.nlm.nih.gov/books/NBK532901/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: What is the major concern associated with bupivacaine toxicity? (Q846745)

A. Liver toxicity

B. Nephrotoxicity

C. Cardiotoxicity

D. Neurotoxicity

Correct Answer: C. Cardiotoxicity

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Bupivacaine (an aminoamide) is known for its potential cardiotoxic effects , particularly when administered in high doses or if accidentally injected into a blood vessel, which can lead to severe cardiac

arrhythmias and cardiac arrest. Direct intravenous injection or rapid vascular uptake of the drug is the most common reason for bupivacaine toxicity, which has an upper limit of 2.5 to 3.5 mg/kg upper limit of dosing. Treatment for toxicity: 20% Intralipid solution.

References:

www.ncbi.nlm.nih.gov/books/NBK532883/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: What is the primary function of pseudocholinesterase? (Q846746)

A. Breaks down acetylcholine at neuromuscular junctions

B. Hydrolyzes ester-based compounds in the plasma

C. Converts succinylcholine into its active form

D. Metabolizes amide local anesthetics

Correct Answer: B. Hydrolyzes ester-based compounds in the plasma

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Pseudocholinesterase plays a critical role in metabolizing ester-based local anesthetics (chloroprocaine, procaine, tetracaine) and neuromuscular blocking agents (succinylcholine, mivacurium). Pseudocholinesterases : Serine hydrolase enzyme primarily produced in the liver that catalyzes the hydrolysis of choline esters. Breaks down acetylcholine at neuromuscular junctions (Option A) : This function is carried out by acetylcholinesterase. Converts succinylcholine into its active form (Option C): Pseudocholinesterase breaks down succinylcholine, rather than activating it. Metabolizes amide local anesthetics (Option D): Amide local anesthetics (like lidocaine) are metabolized by the liver, not by pseudocholinesterase.

References:

www.ncbi.nlm.nih.gov/books/NBK541032/

www.ncbi.nlm.nih.gov/books/NBK541032/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: In comparison to the retrobulbar block, which statement is true regarding the peribulbar block? (Q846748)

A. It is performed deeper than the retrobulbar block.

B. It has a higher risk of optic nerve injury.

C. It generally provides a wider area of anesthesia.

D. It is more likely to cause complications compared to the retrobulbar block.

Correct Answer: C. It generally provides a wider area of anesthesia.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Peribulbar block provides a wider area of anesthesia. Aspect Retrobulbar Block Peribulbar Block Depth of Injection Deeper (often near the optic nerve) Shallower (more superficial to the globe) (Option A) Area of Anesthesia Primarily targets extraocular muscles Provides a wider area of anesthesia (Option C) Risk of Complications Higher risk of serious complications with increased risk of optic nerve injury. Lower risk of serious complications (Option B & D)

References:

www.ncbi.nlm.nih.gov/pmc/articles/PMC7175781/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: What are the two active ingredients in EMLA cream? (Q846749)

A. 2.5% Lidocaine and 2.5% Procaine

B. 3.5% Prilocaine and 3.5% Tetracaine

C. 2.5% Lidocaine and 2.5% Prilocaine

D. 4.5% Bupivacaine and 4.5% Lidocaine

Correct Answer: C. 2.5% Lidocaine and 2.5% Prilocaine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: EMLA Cream: Eutectic Mixture of Local Anesthetics cream is a topical anesthetic used to numb the skin before medical procedures. EMLA cream contains a eutectic mixture of 2.5% lidocaine and 2.5% prilocaine,

which work together to provide local anesthesia. Common uses - Venipuncture, Minor surgical procedures, Dermatological procedures & Numbing before vaccinations Contraindicated in neonates, as Prilocaine can cause methemoglobinemia.

References:

pubmed.ncbi.nlm.nih.gov/8969353/

www.ncbi.nlm.nih.gov/pmc/articles/PMC5665840/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: A 50 year old female patient is undergoing a minor surgical procedure on her left forearm using intravenous regional anesthesia (IVRA) for pain control. During the procedure, the patient suddenly develops seizures and exhibits signs of cardiovascular instability. Which of the following is the most appropriate immediate management step for this patient? (Q846750)

A. Administer intravenous calcium gluconate

B. Administer intravenous magnesium sulphate

C. Initiate lipid emulsion therapy

D. Give an additional bolus of lidocaine

Correct Answer: C. Initiate lipid emulsion therapy

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Intravenous Regional Anesthesia (IVRA): Intravenous Regional Anesthesia (IVRA), also known as a Bier block , is a technique that provides local anesthesia to a specific region of the body, typically an extremity, through intravenous administration of a local anesthetic. Can cause Local Anesthetic Systemic Toxicity (LAST) if the local anesthetic enters the systemic circulation, characterized by CNS and CVS symptoms. Treatment- Administer a 20% lipid emulsion intravenously

References:

www.ncbi.nlm.nih.gov/books/NBK430760/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: Which of the following is the correct order of susceptibility of nerve fibers to local anesthetics (LA)? (Q846751)

A. A alpha = A beta > A gamma = A delta > B > C

B. B > A alpha = A beta > A gamma = A delta > C

C. A gamma = A delta > A alpha = A beta > B > C

D. A gamma = A delta > B > A alpha = A beta > C

Correct Answer: C. A gamma = A delta > A alpha = A beta > B > C

Explanation: Nerve fibers have the following order of susceptibility to LA : A gamma = A delta > A alpha = A beta > B > C Local anesthetics block nerve conduction by inhibiting sodium channels. Small, myelinated fibers (like A gamma and A delta) are more susceptible than larger, myelinated fibers (A alpha and A beta). Unmyelinated C fibers are the least susceptible , while B fibers fall between A and C fibers.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC7808030

↑ *Back to this question in Part A*

@Neet_pg_bot

• [02_Local Anaesthetics] 004 Previous Year Questions

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[02_Local Anaesthetics] 004 Previous Year Questions — Quick Jump

Q1 (p. 283) *Q2 (p. 284)* *Q3 (p. 284)* *Q4 (p. 285)* *Q5 (p. 286)* *Q6 (p. 286)*
Q7 (p. 290) *Q8 (p. 290)* *Q9 (p. 291)* *Q10 (p. 292)*

Q1: Which of the following is true regarding the image provided? (Q844108)

A. EMLA contains ropivacaine and ligocaine

B. EMLA can lead to methemoglobinemia

C. EMLA contains 5% lignocaine

D. EMLA acts within 15 mins



@Neet_pg_bot

Correct Answer: B. EMLA can lead to methemoglobinemia

Explanation: EMLA cream is a topical anesthetic composed of 2.5% lidocaine and 2.5% prilocaine. It can lead to methemoglobinemia. Prilocaine inEMLAis metabolized into ortho-toluidine . This substance is an oxidizing agent

that converts hemoglobin's iron from Fe2+ to Fe3, Creating methemoglobin (MetHb), which cannot carry oxygen, leading to cyanosis and functional anemia. This risk is highest in infants . EMLA contains ropivacaine and lidocaine(Option A): EMLA contains lidocaine and prilocaine, not ropivacaine. EMLA contains 5% lignocaine(Option C): EMLA contains lidocaine (2.5%) and prilocaine (2.5%). EMLA acts within 15 mins(Option D): EMLA typically takes about 1.5 to 2 hours to achieve full effect, not just 15 minutes.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which of the following topical local anesthetics is commonly used in cataract surgery? (Q860062)

A. Proparacaine 0.5%

B. Bupivacaine 0.5%

C. Halothane

D. Nitrous Oxide

Correct Answer: A. Proparacaine 0.5%

Explanation: Proparacaine 0.5% is the most frequently used topical local anesthetic for cataract surgery due to its effectiveness in providing adequate anesthesia with minimal systemic effects. It is preferred for its rapid onset and relatively short duration of action, which is well-suited for the brief nature of cataract procedures. Incorrect Options: Bupivacaine (Option B): Bupivacaine is more commonly used for spinal, epidural, and peripheral nerve blocks. Halothane and Nitrous (Oxide Option C and D) are inhalational anesthetic agents used for general anesthesia, not topical local anesthesia.

References:

https://pubmed.ncbi.nlm.nih.gov/31983237/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following is the mechanism of action of Local anesthetics? (Q860108)

A. Blocks Na + channels

B. Stimulate Ca + Channels

C. Block Cl - Channels

D. Stimulate K + channels

Correct Answer: A. Blocks Na + channels

Explanation: Local anesthetics work by blocking sodium channels in nerve membranes, preventing the propagation of nerve impulses, which results in local anesthesia. MOA: Blocks inactivation gates of Na+ channels → Disrupts depolarisation → No action potential generated → No pain sensation. Incorrect Options: Stimulate Ca + Channels (Option A): Calcium channels are involved in neurotransmitter release at synapses, but local anesthetics do not stimulate Ca^{2}■ channels. They primarily block sodium channels. Block Cl - Channels (Option B): Chloride channels play a role in the regulation of cell volume and maintaining membrane potential, but local anesthetics do not block chloride channels. Stimulate K + channels (Option C): Potassium channels are involved in the repolarization phase of the action potential, but local anesthetics do not directly stimulate these channels. Their primary effect is on sodium channels to block nerve conduction.

References:

Miller's Anaesthesia, 9th Edition, Pages 875,883.

↑ *Back to this question in Part A*

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Q4: Which neuromuscular blocking agent undergoes Hofmann elimination? (Q830820)

A. Pancuronium

B. Rocuronium

C. Vecuronium

D. Atracurium

Correct Answer: D. Atracurium

Explanation: Correct Option D – Atracurium: It is metabolized spontaneously in plasma by non-specific ester hydrolysis, a process known as Hofmann elimination. Incorrect Options: Option A - Pancuronium: Pancuronium is primarily eliminated by the liver, and it undergoes renal excretion. It doesn't undergo Hofmann elimination. Option B - Rocuronium: Similar to Pancuronium, Rocuronium is mainly metabolized by the liver and excreted through the kidneys. It doesn't undergo Hofmann elimination. Option C - Vecuronium: Vecuronium is also metabolized by the liver and excreted renally. It doesn't undergo Hofmann elimination.

↑ *Back to this question in Part A*

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Q5: Which of the following local anesthetics causes hypertension? (Q854959)

A. Cocaine

B. Lignocaine

C. Bupivacaine Prilocaine

D. Prilocaine

Correct Answer: A. Cocaine

Explanation: Cocaine : It causes hypertension by blocking the reuptake of norepinephrine at adrenergic nerve terminals, leading to increased sympathetic activity, vasoconstriction, and elevated blood pressure. Cocaine is unique among local anesthetics due to its sympathomimetic effects, which can lead to hypertension and tachycardia. Lignocaine (Lidocaine) (Option B) : It primarily acts as a sodium channel blocker and does not cause significant effects on blood pressure unless given in large doses or if it contains epinephrine. Bupivacaine (Option C) : Known for its cardiotoxicity at higher doses, but it does not typically cause hypertension. Prilocaine (Option D) : Generally safe for local use, with minimal systemic effects on blood pressure.

References:

Miller’s Anaesthesia, Edition 9, Pg 269, 271, 272, 273

↑ *Back to this question in Part A*

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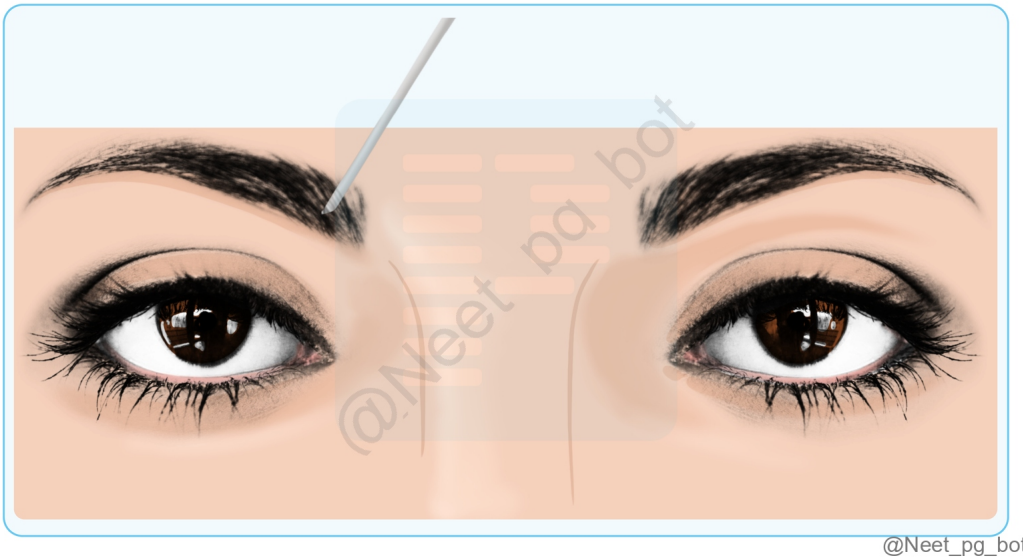
Q6: What is the nerve blocked in the following local anaesthesia technique? (Q858053)

A. Supratrochlear nerve

B. Anterior ethmoidal nerve

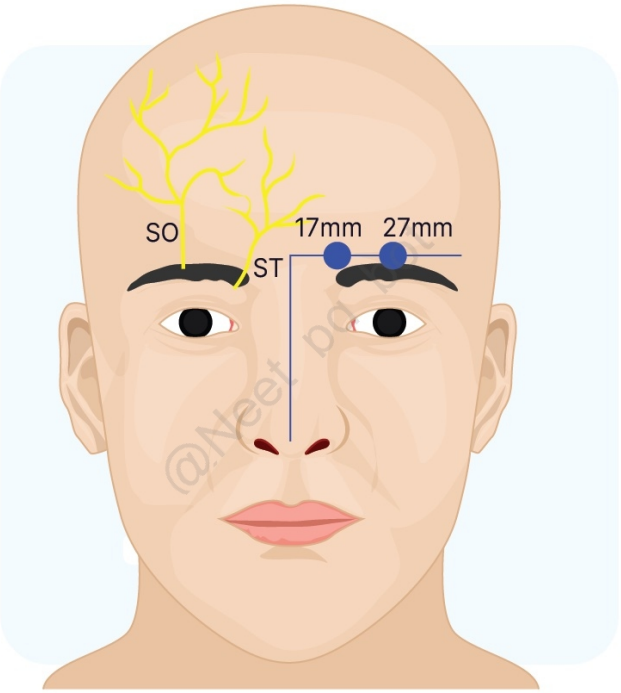
C. Sphenopalatine nerve

D. Greater palatine nerve

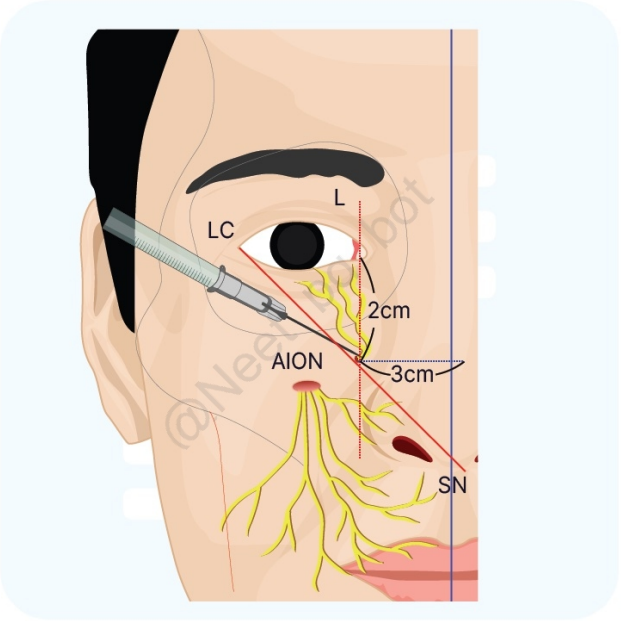


Correct Answer: A. Supratrochlear nerve

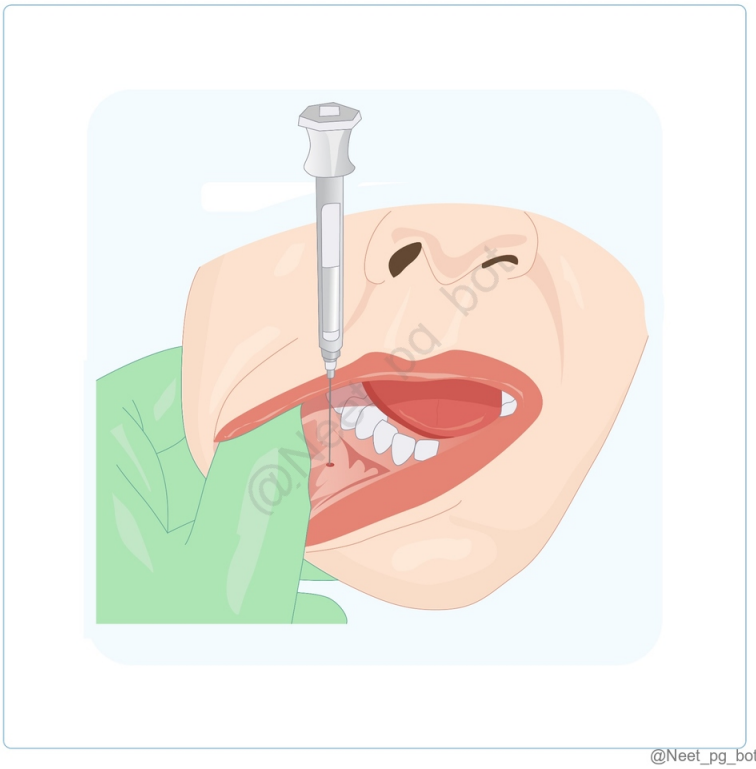
Explanation: Supratrochlear nerve block Needle Position: The needle is inserted at the medial end of the eyebrow , just above the medial canthus of the eye, along the supraorbital rim. Anatomical Target: The supratrochlear nerve exits the orbit at the superomedial corner, passing between the trochlea (pulley for the superior oblique muscle) and the supraorbital foramen. This specific injection site is the standard landmark for blocking this nerve. Supply Area: Blocking the supratrochlear nerve provides anesthesia to the skin of the lower medial forehead , the root of the nose, and the medial part of the upper eyelid . Face blocks Most of the facial region is supplied by the Trigeminal nerve and its branches. Anatomy: Cranial nerve V arises from the brainstem and forms the Gasserian (sensory) ganglion in Meckel’s cave . The three nerve divisions (ophthalmic, maxillary, mandibular) exit the skull separately. Nerve Block Anatomy Anesthesia Distribution Technique Supraorbital & Supratrochlear (Ophthalmic Nerve) {{caption_text}} Supraorbital nerve exits the supraorbital foramen on the superior surface of the orbital rim. Supratrochlear exits medially at the orbital rim . Anesthetizes the entire forehead up to the scalp's vertex. Inject anesthetic subcutaneously above the eyebrow, from midline to the lateral orbit. Infraorbital (Maxillary Nerve) {{caption_text}} Exits infraorbital foramen below the optic rim near the first maxillary premolar. Provides sensation loss to lower eyelid, medial cheek, side of nose, upper lip. Retract mucosa, insert needle above the first premolar, and inject 3-5 ml between cheek and gingiva. Mental (Mandibular Nerve) {{caption_text}} Mental nerve exits the mental foramen, a branch of the inferior alveolar nerve. Anesthetizes lower lip, labial mucosa, and gingiva near incisors and canines. Retract lip, insert needle near first/second premolars , and inject 3-5 ml in the mucosal fold Inferior Alveola r (Mandibular Nerve) {{caption_text}} Arises from mandibular division of trigeminal (V3); landmarks: Mandibular sulcus, coronoid notch, pterygomandibular raphe. Anesthetizes all lower teeth, gums, anterior labial and lingual areas. Insert needle into pterygomandibular raphe , tap bone, withdraw slightly, and inject 2-3 ml. Complications Risks include intravascular or subarachnoid injection, Horner syndrome, and motor block of jaw muscles. Maxillary nerve blocks carry a higher risk of hemorrhage. Facial nerve may be unintentionally blocked during mandibular nerve blocks.

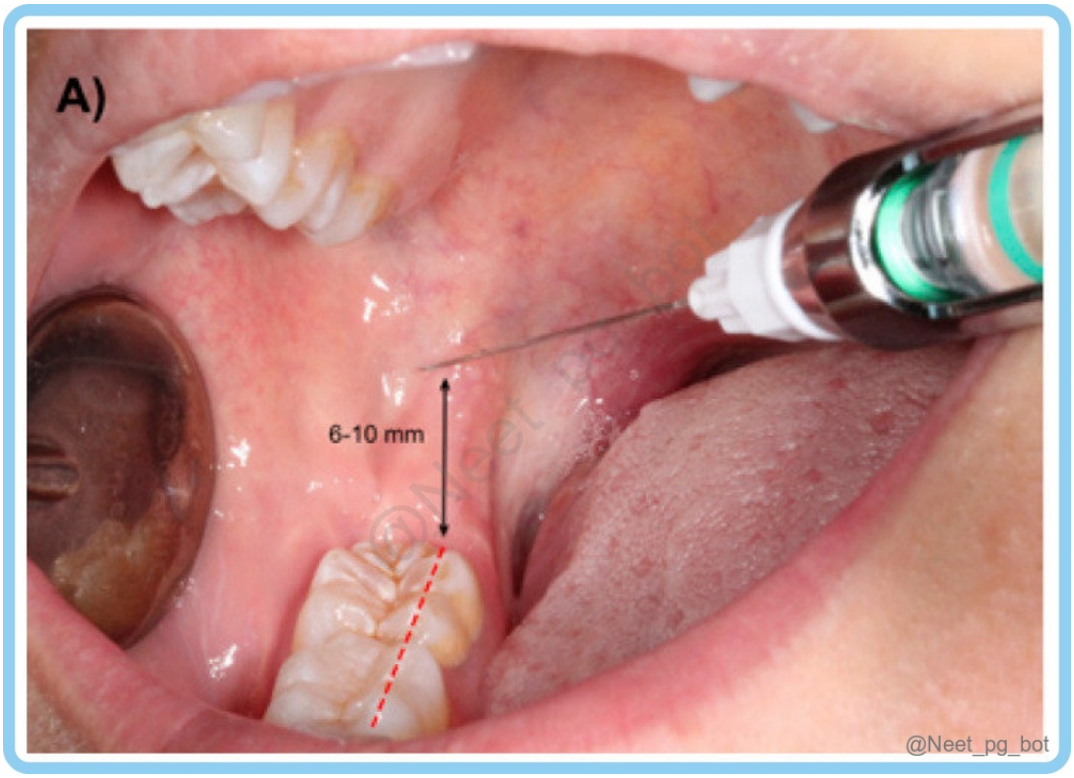


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References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg no. 2047
https://www.downeastem.org/nerve-blocks-of-the-face-and-mouth

↑ *Back to this question in Part A*

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Q7: What is the mechanism of action of local anesthetics? (Q858066)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

Correct Answer: A. Block sodium channels

Explanation: Local anesthetics function by inhibiting the conduction of nerve impulses, thereby preventing the sensation of pain. They achieve this primarily by blocking voltage-gated sodium channels on nerve cell membranes. Mechanism of action & absorption: Site: acts on nodes of ranvier Blocks transmission of pain impulse from nociceptor to spinal cord. Acts on intracellular side of Na channels at inactivation gate blocking the channel. LA doesn't affect RMP of nerves. Blocks inactivation gates of Na+ channels → Disrupts depolarisation → No action potential generated → No pain sensation. Highest systemic absorption (routes of administration): IV route >Tracheal > Intercostal > Brachial plexus > Epidural. Form for onset of LA action (to reach target nerve) - Unionized form. Active form at site of block of Na channels- Ionized form. Higher doses will act for longer duration and lower doses for a relatively shorter duration. Duration of onset for different local anesthetics (infiltration anesthesia): Short Duration Procaine Chloroprocaine Moderate Duration Lidocaine Prilocaine Long Duration Bupivacaine Ropivacaine Shortest acting- Procaine Longest acting- Dibucaine Fastest onset- Chloroprocaine (low potency so high concentration used) > Lignocaine (pka is near physiological pH)

References:

Miller's Anaesthesia 9th Edition pages 875,883.

↑ *Back to this question in Part A*

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Q8: During resuscitation, a patient received a 20% intralipid injection. What could have been the most probable diagnosis? (Q858068)

A. Local anaesthesia toxicity

B. Asphyxia due to drowning

C. Electrocution

D. Pulseless electrical activity

Correct Answer: A. Local anaesthesia toxicity

Explanation: The administration of a 20% intralipid injection is a recognized treatment for local anesthetic systemic toxicity (LAST). LAST can occur when local anesthetics, such as bupivacaine, are inadvertently injected into the bloodstream during regional anesthesia procedures. This can lead to severe cardiovascular and central nervous system complications. Local Anesthetic Systemic Toxicity (LAST): Clinical Features CNS effects: Early and less severe. First symptom: circumoral paraesthesia First sign: nystagmus At low plasma concentration: mild sensory disturbances. Increased concentration: CNS excitation, seizure activity. Higher concentration: CNS depression, coma, respiratory depression, arrest. Cardiac effects: Usually late but severe form of toxicity, may lead to death. Hypotension, dysrhythmias, myocardial depression. Potent agents (bupivacaine, ropivacaine, levobupivacaine) linked to cardiovascular collapse, heart block. Safety profile Bupivacaine has more risk to cause LAST than Lidocaine Most potent highly lipid soluble drugs are more likely to cause Prevention Risk recognition and dose reduction. Careful aspiration before injection. Incremental administration (3-5 mL) with continuous heart rate monitoring. Use ultrasonographic guidance to confirm anesthetic deposit. Use a vasoactive agent like epinephrine to reduce systemic absorption and serve as an intravascular indicator. Treatment Recognize LAST (Local Anesthetic Systemic Toxicity) early and call for help. Airway management: Secure airway, ventilate with 100% oxygen. Administer 20% Lipid Emulsion: Bolus: 12 mL/kg over 2-3 min. Infusion: at 0.25 mL/kg/min-0.5ml/kg/min for 15-20 mins Maximum initial dose: 12 ml/kg Administration of antiepileptics: for seizure control, benzodiazepines such as Lorazepam is preferred. Cardiopulmonary resuscitation: if necessary, monitor the patient at least for initial 2-6 hours following resuscitation. Asphyxia due to drowning (Option B): Drowning leads to hypoxia and respiratory failure, which are managed through airway management and respiratory support, not lipid emulsion therapy. Electrocution(Option C): can cause cardiac arrhythmias and burns. Treatment focuses on resuscitation, wound care, and monitoring for arrhythmias, not lipid emulsion therapy. Pulseless electrical activity (Option D): This condition involves a non-perfusing rhythm and requires immediate resuscitation efforts, including CPR and addressing the underlying cause.

References:

Barash Clinical Anesthesia 9th edition pages 1706-1721

↑ *Back to this question in Part A*

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Q9: A young male patient was given a regional block with 0.25% bupivacaine for a minor surgical procedure. Shortly after the injection, the patient suddenly became unresponsive, and the pulse was not recordable. Which of the following would be the best course of management for this patient? (Q856032)

A. CPR with 20% intralipid

B. CPR with sodium bicarbonate

C. CPR with dobutamine

D. CPR with calcium

Correct Answer: A. CPR with 20% intralipid

Explanation: Bupivacaine toxicity : Bupivacaine is a long-acting local anesthetic known for its potential cardiotoxicity, especially when inadvertently injected intravascularly. This can lead to life-threatening arrhythmias, cardiovascular collapse, and cardiac arrest. 20% intralipid therapy : Lipid emulsion therapy is the treatment of choice for local anesthetic systemic toxicity (LAST). It acts by sequestering the lipophilic local anesthetic molecules ("lipid sink" effect), reducing their availability to cardiac and nervous tissues, and restoring cardiac function. In cases of bupivacaine-induced cardiac arrest, immediate CPR and administration of 20% intralipid therapy are essential to reverse toxicity and improve patient outcomes. Incorrect Options: CPR with sodium bicarbonate (Option B) : While sodium bicarbonate may help correct acidosis, it is not specific for treating bupivacaine toxicity. CPR with dobutamine (Option C) : Dobutamine is an inotropic agent used for cardiogenic shock but is not effective in reversing LAST. CPR with calcium (Option D) : Calcium is helpful in certain cardiac arrhythmias but does not address the underlying cause of LAST.

References:

Miller’s Anaesthesia, Edition 8, Pg 1047, 1048

↑ *Back to this question in Part A*

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Q10: Which is the anesthesia of choice in a daycare dental surgery? (Q859322)

A. General anesthesia

B. Spinal anesthesia

C. Epidural anesthesia

D. Infiltration anesthesia

Correct Answer: D. Infiltration anesthesia

Explanation: Infiltration anesthesia is typically the anesthesia of choice for daycare dental surgeries. This type of local anesthesia involves the injection of anesthetic directly into the tissue around the area where the procedure will take place. It numbs only the specific area of the mouth, making it ideal for dental procedures that do not require deep sedation or general anesthesia. The patient remains awake and alert, making it suitable for daycare procedures, allowing for quick recovery. Incorrect Options: General anesthesia (option A): While general anesthesia can be used in some dental surgeries, it is not typically required for routine daycare procedures, which are often short and localized. General anesthesia carries more risks and requires longer recovery time, making it less ideal for minor dental work. Spinal anesthesia (option B) is usually reserved for surgeries involving the lower

half of the body, such as abdominal or lower limb surgeries. It is not commonly used for dental procedures, which are localized to the mouth. Epidural anesthesia (option C) is also typically used for surgeries involving the lower body (such as cesarean sections or lower extremity surgeries) and is not necessary for dental procedures. Like spinal anesthesia, it involves more extensive procedures and recovery time.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 1093-1095

↑ *Back to this question in Part A*

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• [03_Regional Anaesthesia] 005 Regional Anaesthesia Spinal Epidural And Caudal

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[03_Regional Anaesthesia] 005 Regional Anaesthesia Spinal Epidural And Caudal — Quick Jump

Q1 (p. 294)	*Q2 (p. 296)*	*Q3 (p. 297)*	*Q4 (p. 298)*	*Q5 (p. 299)*	*Q6 (p. 300)*
Q7 (p. 303)	*Q8 (p. 304)*	*Q9 (p. 305)*	*Q10 (p. 305)*	*Q11 (p. 306)*	*Q12 (p. 307)*
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Q31 (p. 327)	*Q32 (p. 328)*	*Q33 (p. 329)*			

Q1: When performing caudal anaesthesia in a neonate, the needle should not be advanced beyond which level to prevent accidental dural puncture and total spinal anaesthesia? (Q885242)

A. S1

B. S3

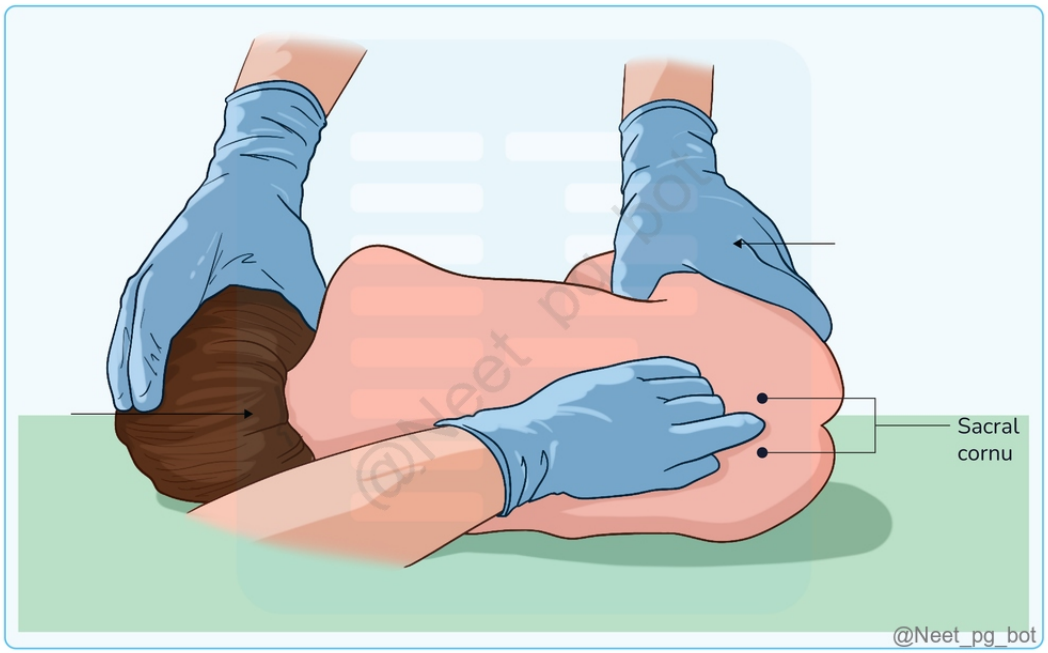
C. S2

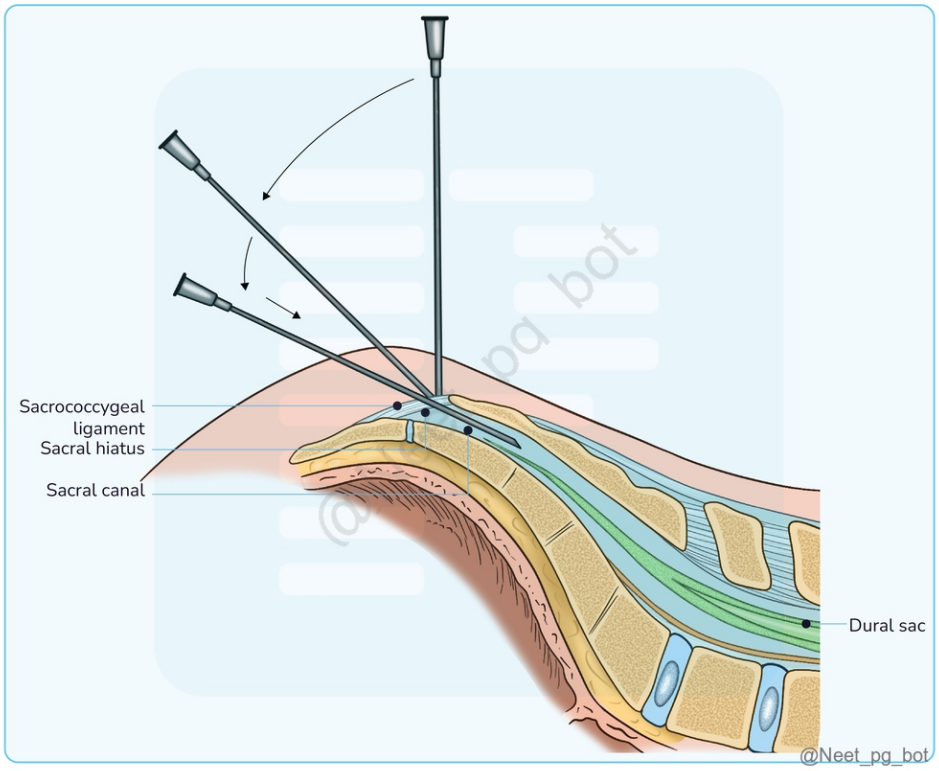
D. L5

Correct Answer: B. S3

Explanation: When performing caudal anaesthesia in a neonate, the needle should not be advanced beyond S3 to prevent accidental dural puncture and total spinal anaesthesia. Caudal anaesthesia is a type of epidural anaesthesia performed by injecting local anaesthetic into the epidural space through the sacral hiatus. It is one of the most commonly used regional techniques in pediatric surgery. 1. Anatomy and Landmarks The Sacral Hiatus: This is the gateway to the caudal space. It is a U-shaped or V-shaped opening formed by the failure of the S5 vertebral lamina to fuse. Surface Landmarks: It is located at the top of the natal cleft, forming an equilateral triangle with the two posterior superior iliac spines. Membrane: The hiatus is covered by the sacrococcygeal ligament, which must be pierced to enter the space. Fat Content: The caudal space contains a high amount of loose connective tissue and fat, which influences the spread of the anaesthetic. 2. Procedure Technique: The patient is usually in the lateral decubitus (side-lying) or prone position. The needle is inserted at a 45-60 degree angle to the skin until a pop is felt as it pierces the sacrococcygeal ligament. The angle of the needle is then flattened (to about 20 degrees) and advanced a few millimetres into the canal. Aspiration is mandatory to ensure no blood or CSF is present before injection. 3. Safety precautions: Pediatric Dural Sac: In infants, the dural sac ends lower than in adults, typically reaching the S3 or sometimes S4 level. Procedure Safety: Because the sac ends so low, there is a much higher risk

of accidentally piercing the dura during a caudal block. Precaution: To remain in the "safe zone" of the caudal epidural space, the needle tip should stay below the S3 level. S1 (Option A): This is well above the termination of the dural sac. While safe from a dural puncture perspective, it is too high for a standard caudal needle entry. S2 (Option C): This is the level where the dural sac ends in adults. In a neonate, the sac extends further down, so S2 would likely result in a dural puncture . L5 (Option D): This is too high for a caudal approach and would be considered a lumbar epidural approach.





References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 1843,1844.

↑ *Back to this question in Part A*

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Q2: A 3-year-old boy is scheduled for circumcision and is undergoing a pre-anaesthesia evaluation. Which type of anaesthesia is most preferred for this procedure? (Q846820)

A. Spinal anaesthesia

B. General anaesthesia

C. Local anaesthesia

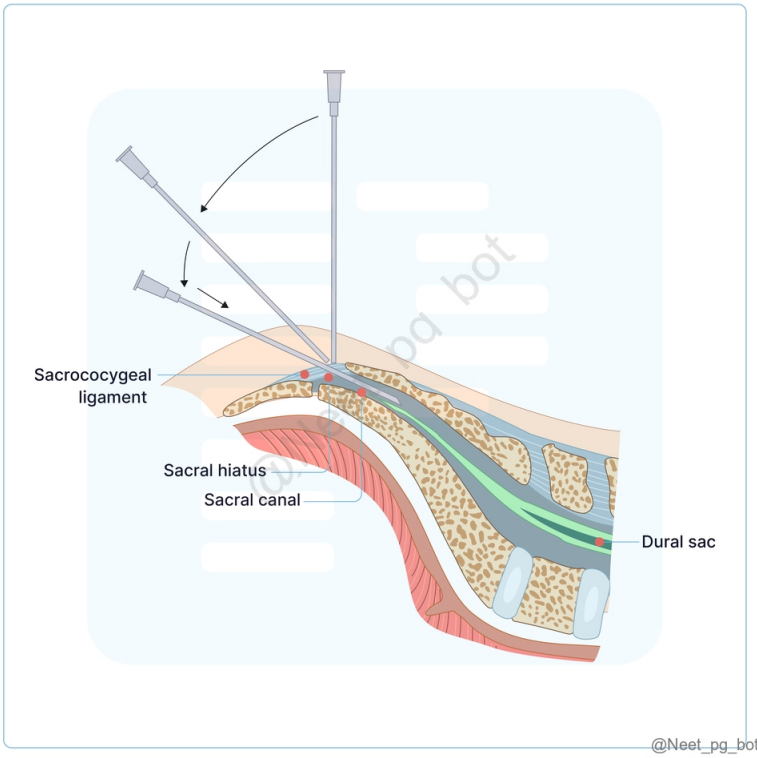
D. Caudal anaesthesia

Correct Answer: D. Caudal anaesthesia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Caudal epidural anaesthesia is a common practice in paediatric age groups . It involves the insertion of a needle or catheter through the sacrococcygeal ligament, which covers the sacral hiatus formed by the unfused laminae of S4 and S5. It is frequently employed for procedures located below the diaphragm , such as urogenital, rectal, inguinal, and lower extremity surgeries. In adults , it is employed for anorectal procedures , as it provides dense sacral sensory blockade with minimal upward spread . Spinal anaesthesia (Option A): Generally not preferred for young children due to risks of hypotension and prolonged motor blockade. General anaesthesia (Option B) induces unconsciousness and provides complete analgesia, but it carries risks such as airway complications and is often more than necessary for simple procedures like circumcision. Local anaesthesia (Option C): While effective for minor procedures, it may not provide adequate pain relief in paediatric patients who can be uncooperative during surgery.



References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1843, 1844

↑ *Back to this question in Part A*

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Q3: A 2-year-old child weighing 10 kg is scheduled for a procedure that requires caudal anaesthesia. The anaesthetist plans to use a 0.1% lidocaine solution, with the recommended dose set at 0.5 mL/kg. What total volume of lidocaine should be administered? (Q846821)

A. 3 mL

B. 4 mL

C. 7 mL

D. 5 mL

Correct Answer: D. 5 mL

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The Armitage formula is employed to determine the correct dose of local anaesthetic for caudal anaesthesia, taking into account the patient's weight and the desired concentration. Volume = Weight (kg) × Effective dose (mL/kg) = 10 kg × 0.5 mL/kg = 5 mL Armitage formula Dermatomes to be blocked Required volume of anaesthesia All sacral dermatomes 0.5 mL/Kg All sacral and Lumbar dermatomes ■■1 mL/Kg Block till mid-thoracic 1.25 mL/Kg

References:

Miller’s Anesthesia, 9th edition, Page 2385

↑ *Back to this question in Part A*

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Q4: A 35-year-old man is set to undergo a hemorrhoidectomy, and the anaesthetist intends to utilise a saddle block for anaesthesia. Which of the following is the main benefit of employing a saddle block in this procedure? (Q846822)

A. Provides deep sedation

B. Longer duration of action

C. Complete motor blockade.

D. Rapid recovery of motion

Correct Answer: D. Rapid recovery of motion

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Saddle block is a type of spinal anaesthesia achieved by keeping the patient in a sitting position for 3 to 5 minutes after the injection. This allows for the blockade of only the lower lumbar and sacral nerves. This gives benefits in obstetric, urological, and anorectal procedures and perioperative pain management: Allows the patient to be awake through the procedure (Option A) Reduced systemic side effects Rapid onset and recovery (Option B) Less post-op nausea Minimal motor block (Option C)

References:

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 1832 NIH www.ncbi.nlm.nih.gov/books/NBK551715/ .

↑ *Back to this question in Part A*

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Q5: A 43-year-old man with scoliosis is scheduled for inguinal hernia mesh repair. During the pre-anaesthetic assessment, spinal anaesthesia was chosen. What would be the most appropriate approach for inducing anaesthesia in this patient? (Q846823)

A. Midline approach

B. Paramedian approach

C. Caudal approach

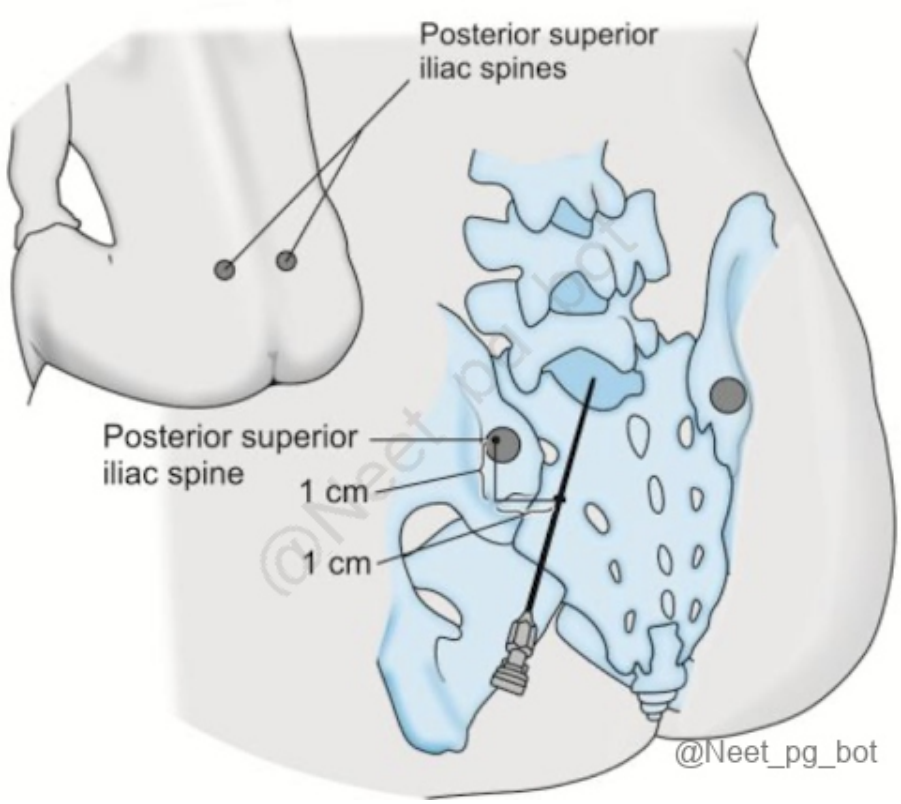
D. Taylor's approach

Correct Answer: D. Taylor's approach

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Taylor's approach, also called a modified Paramedian approach , is done between L5 to S1. It is used in patients with trauma who cannot tolerate the sitting position or in people with deformed spines. The needle is inserted 1 cm medial and 1 cm inferior to the posterior superior iliac spine, angled medially and cephalad at 45 to 55 degrees. Technique Midline approach Paramedian approach Caudal approach Used in Spinal & Epidural block (Option A) Spinal & Epidural block (Option B) Spinal & Epidural block (mostly in paediatric age groups) (Option C)



References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 1833

↑ *Back to this question in Part A*

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Q6: A 71-year-old man with COPD, atrial fibrillation, and osteoporosis is admitted for revision hip surgery. The surgical team chooses continuous spinal anaesthesia (CSA) to manage pain and reduce respiratory risks, considering his desire to stay awake. Which of the following is most commonly associated with CSA? (Q846824)

A. Conus medullaris syndrome

B. Lumbar spinal stenosis

C. Syringomyelia

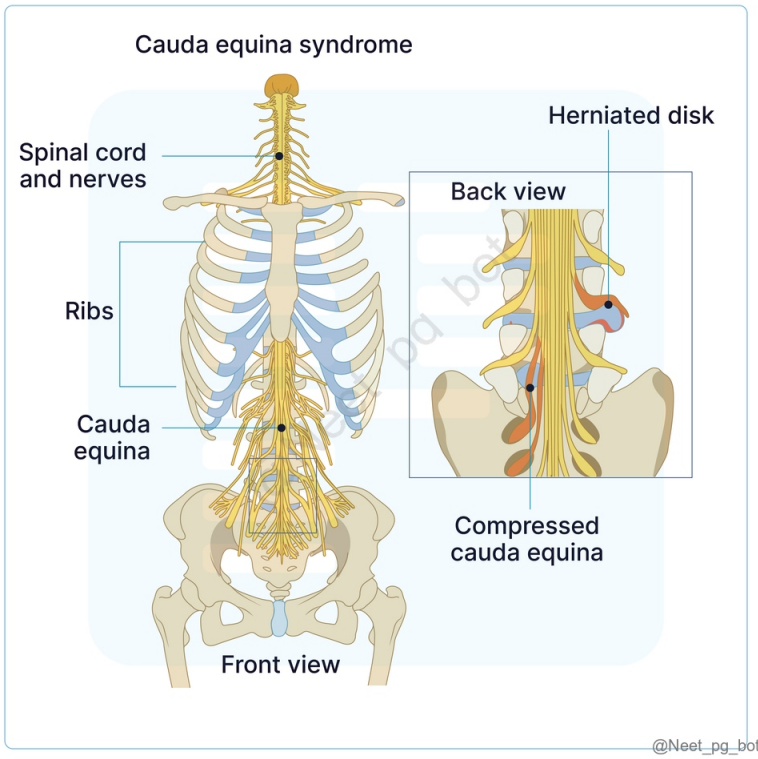
D. Cauda equina syndrome

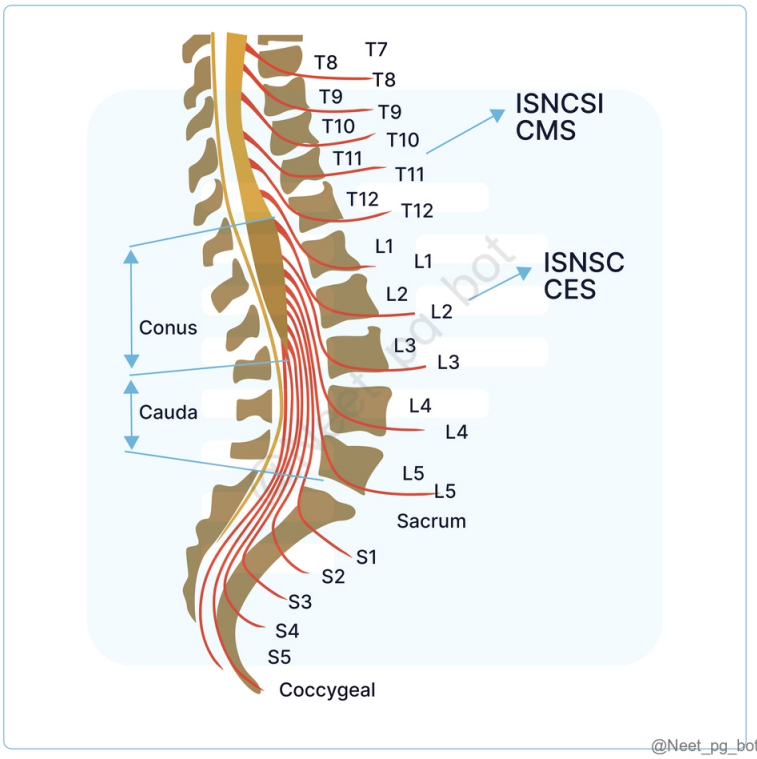
Correct Answer: D. Cauda equina syndrome

■ *Listen (English)*

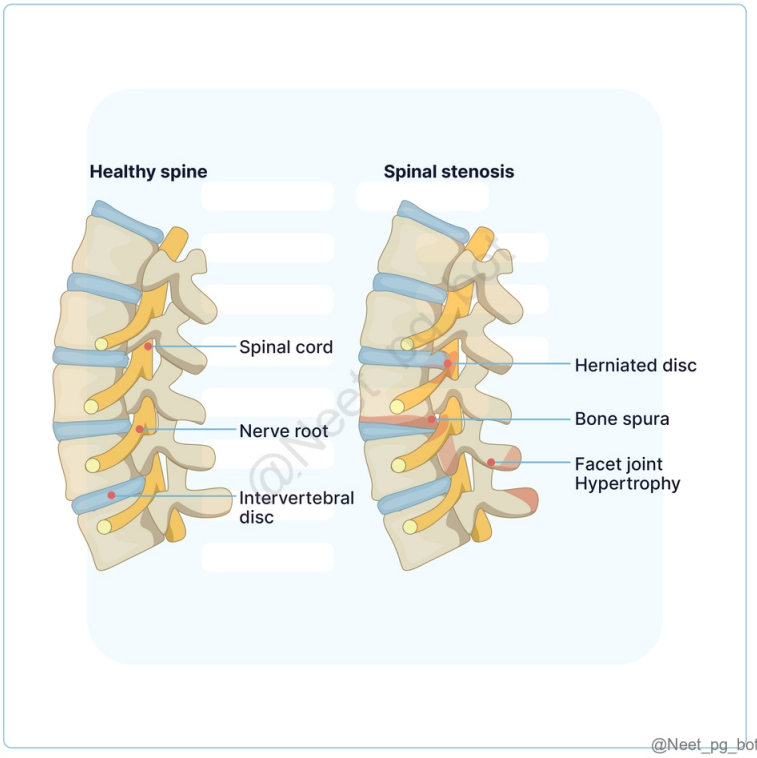
■ *Listen (Hindi)*

Explanation: Cauda Equina Syndrome occurs when the cauda equina, a bundle of spinal nerves at the lower end of the spinal cord, is compressed. Leads to: Difficulty with micturition Loss of anal sphincter tone or faecal incontinence Saddle anaesthesia Gait disturbance Pain, numbness, or weakness affecting one or both legs. Continuous Spinal Anesthesia (CSA) can potentially lead to this condition if a complication, such as a hematoma or local anaesthetic spread, affects the nerve roots. Conus medullaris syndrome (Option A) affects the conus medullaris at the end of the spinal cord and is less commonly associated with CSA. It is characterised by lower limb weakness, increased knee reflex, decreased ankle reflex, and extensor plantar reflex. Lumbar spinal stenosis (Option B) occurs with a congenitally narrowed lumbar spinal canal, exacerbated by the degenerative changes that commonly occur with age, characterised by exercise-induced weakness and paraesthesia in the legs, but is not directly associated with CSA. Syringomyelia (Option C) is a condition characterised by the formation of a cyst (syrinx) within the spinal cord. It leads to pain and numbness in the neck, shoulders, arm, or back and is not specifically associated with CSA.

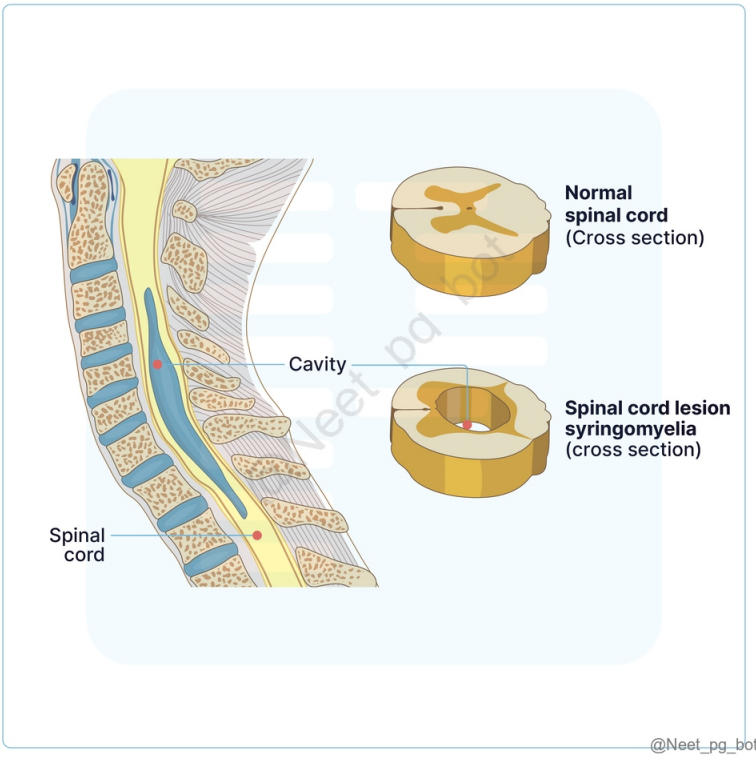




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References:

Miller's Anesthesia, 9th edition, Page 1431. Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 494, 1616. Davidson's Principle and Practice of Medicines, 24th edition, Page 997.

↑ *Back to this question in Part A*

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Q7: A 68-year-old male undergoing elective orthopaedic surgery under spinal anaesthesia suddenly becomes unresponsive. The anesthesiologist suspects total spinal anaesthesia. Which of the following set of statements is true? Sensory loss typically follows the caudal spread Profound motor weakness due to cephalad spread Respiratory depression Severe hypotension and bradycardia due to sympathetic blockade. (Q846825)

A. 1,2,3

B. 2,3,4

C. 1,3,4

D. 1,2,3,4

Correct Answer: B. 2,3,4

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Total Spinal Block Cause If the patient is kept in the Trendelenburg position for a longer duration, the cervical and intracranial segments are blocked through CSF during the spinal block. It also happens due to accidental intrathecal injection during caudal and epidural blocks. Symptoms Severe hypotension, Bradycardia, Respiratory distress (due to phrenic nerve involvement) Sensory loss and profound motor weakness due to Cepahald spread of local anaesthetic. Loss of consciousness Management Oxygen supplementation IV Fluids Intubation and mechanical ventilation, if needed Phenylephrine for Hypotension Atropine for Bradycardia Adrenaline in case of Cardiac arrest

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 1848

↑ *Back to this question in Part A*

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Q8: A 3-month-old infant is scheduled for a surgical procedure requiring spinal anaesthesia. To perform the procedure safely, the anesthesiologist must remember that in an infant, the spinal cord conus medullaris typically ends at which level? (Q885239)

A. Lower border of L1

B. Upper border of L1

C. Lower border of L3

D. Lower border of S2

Correct Answer: C. Lower border of L3

Explanation: Newborns/young infants → Conus ends at approximately L3. Neonatal Anatomy: In newborns and infants, the spinal cord ends lower than in adults, typically at the L3 vertebral level. Growth Differential: As a child grows, the vertebral column grows faster than the spinal cord, causing the cord to "ascend" relative to the vertebrae. Clinical Correlation: For pediatric spinal anaesthesia, the needle must be inserted at the L4-L5 or L5-S1 interspace to avoid direct trauma to the cord. Lower border of L1 (Option A) & Upper border of L1 (Option B): These are the standard termination levels for adults. In an adult, the cord ends at the L1-L2 interspace. Using this landmark for an infant could lead to spinal cord injury. Lower border of S2 (Option D): This is the level where the dural sac (the envelope containing CSF) ends in infants, not the spinal cord itself.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 1798.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: During a lumbar puncture in an adult, at which vertebral level does the dural sac (subarachnoid space) typically terminate? (Q885240)

A. L1

B. L3

C. S1

D. S2

Correct Answer: D. S2

Explanation: Anatomical Limit: The dural sac, which contains the cerebrospinal fluid (CSF) and the cauda equina, extends further down than the spinal cord. Adult Level: In adults, the dural sac ends at the level of the S2 vertebra. Significance: This marks the lower limit of the subarachnoid space. Any needle inserted below S2 will enter the epidural space (caudal space) but will not yield CSF. L1 (Option A): This is where the spinal cord ends in an adult. L3 (Option B): This is where the spinal cord ends in a newborn. S1 (Option C): While close, the anatomical standard for the termination of the dural sac in adults is consistently identified as S2.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 1799.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: A 37-year-old male is undergoing inguinal hernia repair with spinal anaesthesia. Immediately after administering the anesthesia, the patient goes into cardiac arrest. Which anaesthetic drug is likely responsible for this? (Q846819)

A. Ropivacaine

B. Lidocaine

C. Chloroprocaine

D. Bupivacaine

Correct Answer: D. Bupivacaine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Bupivacaine is a long-acting local anaesthetic known for its potency and potential for cardiotoxicity. It can lead to severe cardiac complications, including cardiac arrest, especially when used in high doses or inadvertently injected into a blood vessel. CPR and I mmediate infusion of 20% Intralipid (ACLS Protocol) along with incremental doses of epinephrine has been effective in reversing bupivacaine-induced cardiac toxicity Ropivacaine (Option A) is also a long-acting local anaesthetic that has a lower risk of cardiovascular toxicity and severe central nervous system effects compared to bupivacaine. Lidocaine (Option B) is a widely used local anaesthetic with a rapid onset and moderate duration. While it can lead to cardiovascular effects at high doses, it is generally well-tolerated and not commonly associated with cardiac arrest in typical clinical use. Chloroprocaine (Option C) is an ultra-short-acting anaesthetic with a low risk of systemic toxicity. Its rapid metabolism and lower potency significantly decrease the likelihood of severe cardiovascular complications, including cardiac arrest.

References:

Miller’s Anesthesia, 9th edition, Pages 1689, 1690

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 1830,1831,1840,1841, 1621.

↑ *Back to this question in Part A*

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Q11: Tuffier's Line generally corresponds to which vertebral level or interspace? (Q885243)

A. L2-L3

B. L3

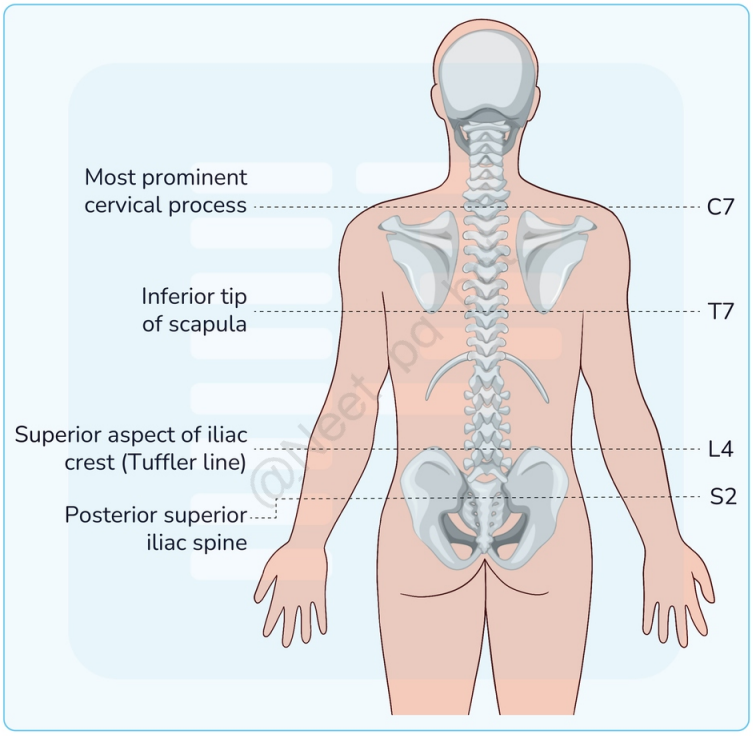
C. L4-L5

D. L5-S1

Correct Answer: C. L4-L5

Explanation: Tuffier’s Line, also called the intercristal line, is the most important surface landmark for neuraxial anaesthesia. It is a line drawn between the highest points of both iliac crests. Anatomical Level: In most adults, this line crosses the L4 vertebral body or the L4-L5 interspace . Clinical Use: Anesthesiologists use this to identify a safe interspace (usually L3-L4 or L4-L5) for needle insertion, ensuring they are well below the end of the spinal

cord (L1). L2-L3 (Option A): This is too high. Inserting a needle here in a patient whose cord ends slightly lower than average could result in nerve damage. L3 (Option B): This is generally higher than the intercristal line. L5-S1 (Option D): This is the lumbosacral junction, which is lower than the line connecting the iliac crests.



References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 1817,1818.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: During the onset of a subarachnoid block, which of the following sensations is typically the very first to be lost? (Q885244)

A. Pain sensation

B. Cold temperature discrimination

C. Proprioception

D. Voluntary motor function

Correct Answer: B. Cold temperature discrimination

Explanation: In a subarachnoid (spinal) block , nerve fibres are blocked in order of: Small, myelinated fibres → small unmyelinated → large fibres Order of loss: Sympathetic fibers Cold sensation (Aδ fibres) Pain (Option A) Touch Proprioception (Option C) Voluntary motor function (Aα fibres) (Option D) Because cold sensation is carried by small myelinated Aδ fibres , it is typically the first clinically detectable sensory loss . The sequence of blockade follows the susceptibility of nerve fibres, which is generally determined by fibre diameter and myelination. B fibres (Preganglionic sympathetic): These are the most sensitive and are blocked first, leading to vasodilation. A-delta and C fibres (Temperature and Pain): Temperature (cold) is usually lost before pinprick pain. A-gamma, A-beta, and A-alpha: These govern touch, pressure, and finally motor function.

Fiber Type	Modality Served	Diameter (mm)	Conduction (m/s)	Myelinated?
Aα	Motor efferent	12–20	70–120	Yes
Aα	Proprioception	12–20	70–120	Yes
Aβ	Touch, pressure	5–12	30–70	Yes
Aγ	Motor efferent (muscle spindle)	3–6	15–30	Yes
Aδ	Pain Temperature Touch	2–5	12–30	Yes
B	Preganglionic autonomic fibers	<3	3–14	Some
C Dorsal root	Pain Temperature	0.4–1.2	0.5–2	No
C Sympathetic	Postganglionic sympathetic fibers	0.3–1.3	0.7–2.3	No

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References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 485, 1802, 2080.

↑ *Back to this question in Part A*

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Q13: A patient is in the recovery room after a transurethral resection of the Prostate performed under spinal anaesthesia. In what order will the following functions return as the block wears off? (Q885245)

A. Motor → Touch → Pain → Cold → Sympathetic

B. Sympathetic → Cold → Pain → Touch → Motor

C. Pain → Motor → Touch → Sympathetic → Cold

D. Motor → Cold → Touch → Pain → Sympathetic

Correct Answer: A. Motor → Touch → Pain → Cold → Sympathetic

Explanation: The order of recovery is the exact reverse of the order of onset. First to recover: Motor function (heaviest fibres recover first as local anaesthetic concentration drops). Last to recover: Autonomic/Sympathetic function (thinnest fibres retain the block longest). Recovery order: Motor → Touch → Pain → Cold → Sympathetic Onset order: Sympathetic → Cold → Pain → Touch → Motor (Option B)

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 2080.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: According to current safety guidelines ASRA/AAGBI, what is the preferred antiseptic agent for skin preparation before a central neuraxial block? (Q885248)

A. 10% Povidone-iodine aqueous solution

B. 0.5% - 2% Chlorhexidine in 70% Alcohol

C. 70% Isopropyl alcohol alone

D. Hydrogen peroxide

Correct Answer: B. 0.5% - 2% Chlorhexidine in 70% Alcohol

Explanation: According to ASRA and AAGBI guidelines , the preferred antiseptic for skin preparation before a central neuraxial block (spinal/epidural) is: Alcoholic chlorhexidine (0.5%–2% in 70% alcohol) Alcohol-based chlorhexidine is superior to aqueous Povidone-iodine because it has a Faster onset, Longer residual activity More effective reduction of skin flora. It must be allowed to dry completely before needle insertion to prevent the risk of chemical arachnoiditis. 10% Povidone-iodine aqueous solution (Option A): While still used, it requires longer contact time to be effective and is generally considered second-line to alcoholic chlorhexidine. 70% Isopropyl Alcohol alone (Option B): Lacks the residual antimicrobial effect of chlorhexidine. Hydrogen peroxide (Option D): It is not a standard antiseptic for neuraxial procedures.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 1822.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: During the administration of spinal anaesthesia via a midline approach, which of the following structures is NOT pierced? (Q885251)

A. Supraspinous ligament

B. Ligamentum flavum

C. Posterior longitudinal ligament

D. Dura mater

Correct Answer: C. Posterior longitudinal ligament

Explanation: Posterior longitudinal ligament The posterior longitudinal ligament is situated on the front wall of the spinal canal behind the vertebral bodies; to pierce it, the needle would have to pass entirely through the spinal cord/cauda equina, which is not done during anaesthesia. In a midline approach, the needle travels from posterior to anterior through the following layers: Skin Subcutaneous tissue Supraspinous ligament (Option A): First ligament encountered Interspinous ligament Ligamentum flavum (Option B) : Loss of resistance/pop is felt as the needle penetrates. Epidural space Dura mater (Option D) Arachnoid matter Subarachnoid space (Target).

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 1822.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q16: During the performance of a subarachnoid block, the needle must traverse several layers to reach the target space. Between which two layers is the local anaesthetic actually deposited to achieve a successful block? (Q885252)

A. Dura mater and Ligamentum flavum

B. Dura mater and Arachnoid mater

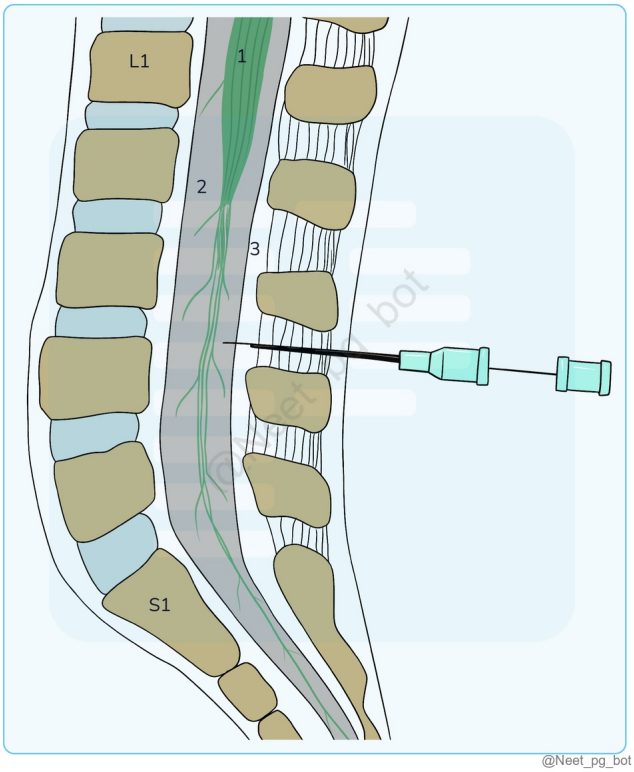
C. Arachnoid mater and Pia mater

D. Pia mater and the Spinal cord

Correct Answer: C. Arachnoid mater and Pia mater

Explanation: The goal of spinal anaesthesia is to inject the drug into the Subarachnoid Space, which contains the Cerebrospinal Fluid (CSF). Anatomically, this space is located between the Arachnoid mater (the middle layer) and the Pia mater (the innermost layer that tightly adheres to the spinal cord). **1 - Spinal cord ; 2 - Subarachnoid space ; 3 - Epidural space** When the needle pierces the arachnoid mater, you often feel a "pop" and see a clear flow of CSF, confirming you are in the correct location for injection. In a subarachnoid (spinal) block , the needle pierces: Skin → Supraspinous ligament → Interspinous ligament → Ligamentum flavum → Epidural space → Dura mater → Arachnoid mater Space Boundaries Epidural space Ligamentum flavum and Dura mater Subdural

space Dura mater and Arachnoid mater (Potential space) Subarachnoid space Arachnoid mater and pia Dura mater and Ligamentum flavum (Option A): This describes the Epidural Space. If you inject here, you are performing an Epidural block, not a Spinal block. The onset of action is slower, and a much larger volume of anaesthetic is required. Dura mater and Arachnoid mater (Option B): This is the Subdural Space. It is a "potential space." Accidental injection here is a known complication of neuraxial anaesthesia; it results in a "Subdural Block," which is often patchy, unpredictable, and can spread dangerously high toward the brainstem. Pia mater and the Spinal cord (Option D): The Pia mater is directly attached to the surface of the spinal cord. There is no natural space here. Attempting to inject "between" these would mean the needle has actually penetrated the spinal cord (Intramedullary injection), which causes permanent neurological damage or paralysis.



References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 1826.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: In a normal-sized adult, which of the following patient-related factors has the least influence on the final level of a spinal block? (Q885253)

A. Patient Height

B. Patient Age

C. CSF Volume

D. Pregnancy

Correct Answer: A. Patient Height

Explanation: Studies have shown that in adults of average height, there is little to no correlation between the height of the patient and the spread of the local anaesthetic. Standard doses are typically used for both a 5'2" and a 6'0" adult. Factors affecting Neuraxial block level: 1. Primary Pharmaceutical Factors The characteristics of the local anaesthetic solution are critical for determining the level and duration of the block: Baricity: This is one of the most important factors. Hyperbaric solutions (heavier than CSF) tend to move to the most dependent areas of the spine, such as T4-T8, in a supine patient. Drug Dosage and Volume: The total dose and volume of the drug injected directly influence the dermatomal spread. Specific Gravity: Different agents like Bupivacaine, Lidocaine, and Tetracaine have varying specific gravities, which dictate their movement within the CSF. 2. Patient Positioning The patient's position is a dominant factor in how the anaesthetic distributes During and After Injection: Position immediately following the block determines where a hyperbaric or hypobaric solution will settle. Supine Position: In this position, the apex of the thoracolumbar curvature is T4, which limits hyperbaric spread at or below this level. 3. Anatomical and Physiological Factors Physical characteristics of the patient can alter the expected level of anaesthesia: Patient Age (Option B): Advanced age is associated with higher blocks due to decreased CSF volume and changes in the permeability of nerve roots. CSF Volume (Option C): CSF volume is inversely proportional to the spread of the drug; lower CSF volume (common in the elderly or obese) leads to a higher spread of the drug Intra-abdominal Pressure: Conditions that increase this pressure (e.g., pregnancy (Option D) , ascites, or large tumours) cause engorgement of epidural veins, decreasing CSF volume and increasing dermatomal spread. Spinal Curvature: Severe kyphosis, scoliosis, or kyphoscoliosis can make the block technically difficult to perform and lead to unpredictable spread. 4. Technical Factors Site of Injection: The specific interspace chosen for needle insertion. Needle Direction: The orientation of the needle during the injection process.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 1828, 1839.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: A 37-year-old man is on the surgical table for inguinal hernia repair. At what level of the spinal cord is spinal anaesthesia administered to achieve the preferred level of the block? (Q846790)

A. L1 - L2

B. L5 - S1

C. S1 - S2

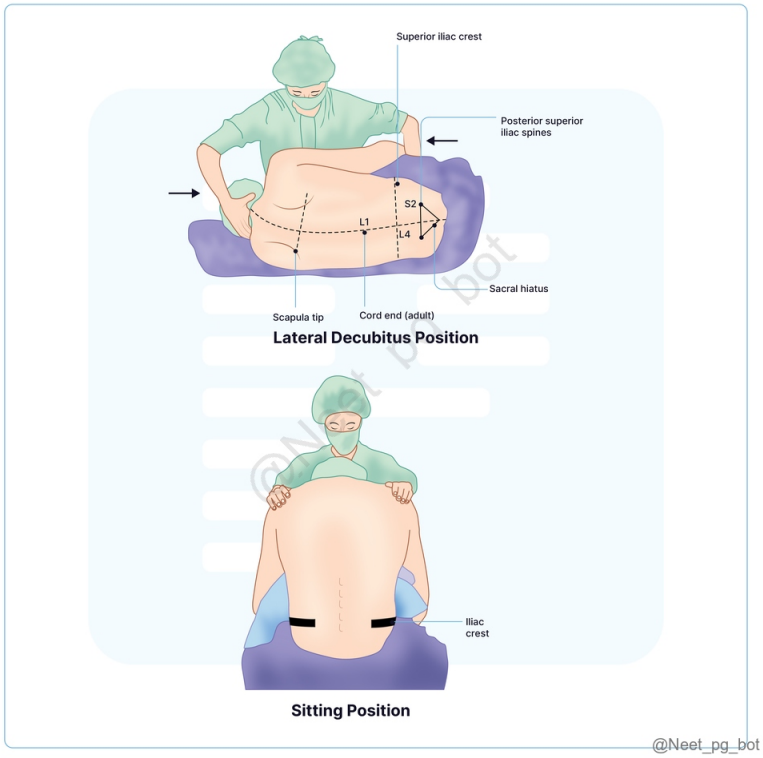
D. L3 - L4

Correct Answer: D. L3 - L4

Listen (English)

Listen (Hindi)

Explanation: Spinal anaesthesia is ideally administered below the termination of the spinal cord, known as the conus medullaris (at L1-L2). Therefore, the preferred spaces for administering spinal anaesthesia in adults are between L2 and L3, L3 and L4, or L4 and L5 due to their accessibility and the presence of cerebrospinal fluid (CSF). In infants, the preferred space for spinal anaesthesia is between L4 and L5, as their conus medullaris is situated lower in the vertebral column. The L4 - L5 space is easily identified by the intercristal line (Tuffier's line), an imaginary line drawn between the highest points of the iliac crests, which typically corresponds to the L4 spinous process.



References:

Miller's Anesthesia, 9th edition, Page 1429 Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1821, 1819.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: A 48-year-old male is undergoing an open inguinal hernia repair. The anesthesiologist decides to use epidural anaesthesia instead of spinal anaesthesia for better postoperative pain management. What is an additional advantage of epidural anaesthesia over spinal in this patient? (Q846806)

A. Complete sensory and motor block

B. Less volume of anaesthesia is required

C. Immediate onset of anaesthesia

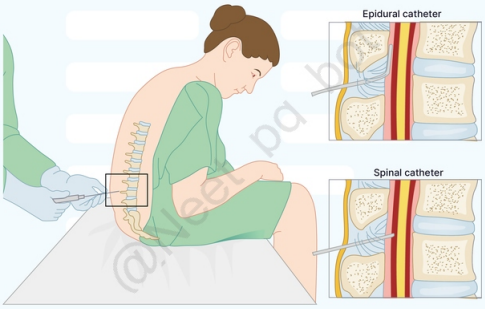
D. Longer duration of anaesthesia

Correct Answer: D. Longer duration of anaesthesia

Listen (English)

Listen (Hindi)

Explanation: Epidural anaesthesia is a better option for the given condition, as it provides selective, segmental blockade of sympathetic fibres, preserves some sympathetic function, helps maintain vascular tone, and reduces the risk of hypotension. It also offers a longer duration of analgesia due to the larger volume of anaesthetic used via a catheter and allows for continuous infusion. Complete sensory and motor block (Optio A): Epidural anesthesia gives a pathcy or an incomplete block. Less volume of anesthesia is required (Option B): Epidural anesthesia requires 15-20 ml, whereas spinal anesthesia requires 2-3 ml. Immediate onet of anesthesia (Option C): Epidural anesthesia has a delayed onset of anesthesia



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References:

Miller’s Anesthesia, 9th edition, Pages 1435 to 1438

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 1832 to 1842

↑ *Back to this question in Part A*

@Neet_pg_bot

Q20: A 67-year-old female with a history of osteoarthritis, significantly affecting her quality of life, is scheduled for knee replacement surgery. After exploring her options, she decides to opt for epidural anaesthesia. All of the following are the disadvantages of epidural anaesthesia, except? (Q846804)

A. High risk of post-dural headache

B. Late onset of anaesthesia

C. Patchy level of blockade

D. Difficult technique

Correct Answer: A. High risk of post-dural headache

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Epidural anaesthesia presents a very low risk of post-dural headache. Advantages and disadvantages of epidural anaesthesia: Advantages Disadvantages It can be used for long-duration surgeries (catheter) Low risk of Post dural headache (PDH) (Option A) The level of anaesthesia can be altered (drug volume) Hemodynamic stability Difficult technique (Option D) Patchy (inadequate) level of blockade (due to the presence of fat) (Option C) Accidental dural puncture (severe PDH) Bupivacaine toxicity: Cardiac arrhythmias Lignocaine toxicity: Seizures Not used for emergency surgeries (due to the late onset of anaesthesia) (Option B)

References:

Miller’s Anesthesia, 9th edition, Pages 2628, 2629. Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 1832, 1833.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q21: A 75-year-old male with osteoarthritis is undergoing hip replacement surgery. After obtaining proper consent and following necessary precautions, the catheter was successfully inserted. What is the most likely factor that could hinder the administration of epidural anaesthesia in this patient? (Q846803)

A. Increase in epidural venous pressure

B. Decrease in epidural venous pressure

C. Narrowing of epidural space

D. Widening of epidural space

Correct Answer: C. Narrowing of epidural space

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Age-related alterations, such as intervertebral disc degeneration and osteophyte formation, can narrow the epidural space , making it more challenging to place the catheter properly. Factors affecting epidural anaesthesia: Drug factor The larger volume of drugs leads to a higher level of blockade. Typically, 1 to 2 mL of the solution is administered per segment for blockade. Patient factor Old age: Narrowing of epidural space (higher level of blockade with the same amount of drug) (Option C) Pregnancy: Increase in epidural venous pressure (decrease in volume of drug required). (Option A ruled out) Procedure factor The level of injection affects the spread as:

References:

Miller’s Anesthesia, 9th edition, Page 1432. Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 1839.

↑ *Back to this question in Part A*

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Q22: A 30-year-old primigravida presents to the hospital with progressively intense contractions over the past few hours. After discussing her pain management options, she chooses epidural anaesthesia for labour. What is the dermatome level associated with the first stage of labour? (Q846802)

A. S2 to S4

B. T10 to L1

C. L1 to S4

D. T10 to S1

Correct Answer: B. T10 to L1

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The dermatome for the first stage of labour spans from T10 to L1. Epidural Anesthesia in Labor: Dermatome level 1st Stage of labour: T10 to L1 (Option B) 2nd Stage of Labor: S2 to S4 (Option A ruled out)

References:

Miller's Anesthesia, 9th edition, Page 2382. Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1617-1619.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q23: A 25-year-old primigravida is scheduled for a caesarean section. After discussing the risks, she chooses epidural anaesthesia. Which sign is not seen in correct placement of the epidural needle in the epidural space? (Q846801)

A. CSF drops following guidewire removal

B. Loss of resistance

C. Aspiration of solution in the needle hub.

D. Absence of knee-jerk

Correct Answer: A. CSF drops following guidewire removal

Explanation: Cerebrospinal fluid (CSF) drops following guidewire removal are observed in spinal anaesthesia, not epidural. Signs for identification of the epidural space: Loss of Resistance As the tip of the needle enters the epidural space, there is a sudden loss of resistance. (Option B) Hanging drop test The hub of the needle should be filled with solution, allowing a drop to hang from its external opening, which is sucked in due to high negative pressure in the epidural space. (Option C) Duran sign If the catheter is placed in the epidural space, then there is no resistance for the drug to pass (the drug passes easily) Westphal sign Absence of PULSATING MOVEMENTS of CSF in the catheter confirms correct needle placement in the epidural space. Absence of knee-jerk (Option D): Not a primary confirmation, but deep sensory/motor block can occur after successful epidural anaesthesia and could abolish reflexes like the patellar (knee-jerk) reflex depending on drug spread.

References:

Miller's Anesthesia, 9th edition, Pages 1435, 1436. Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1836, 1837.

↑ *Back to this question in Part A*

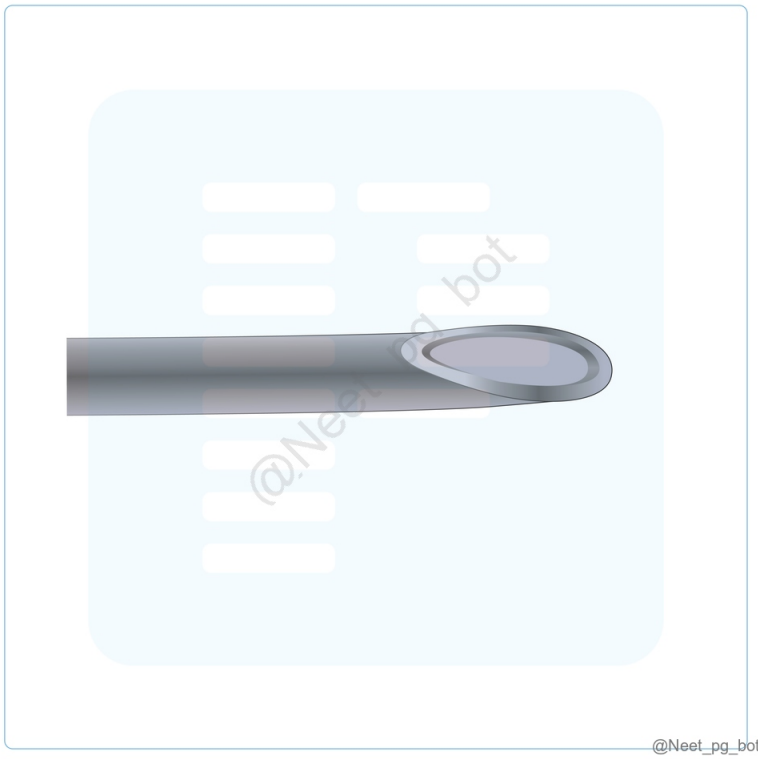
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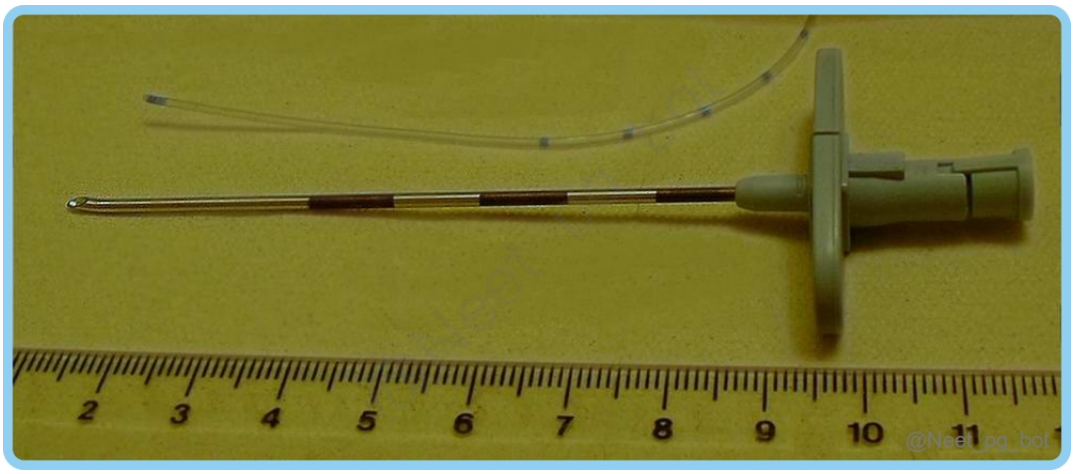
Q24: A 52-year-old male is scheduled for a prostatectomy under regional anaesthesia. The anesthesiologist decides to perform epidural anaesthesia for postoperative pain control. Which of the following needles is typically used for administering epidural anaesthesia? (Q846800)

Correct Answer: Unknown

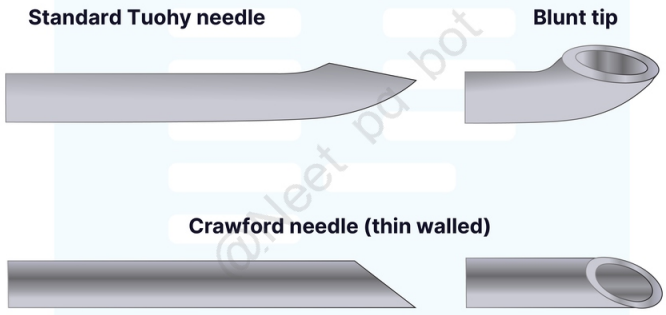
- *Listen (English)*
- *Listen (Hindi)*

Explanation: The needle depicted in the image is a Tuohy needle (Option D), which is preferred for epidural anaesthesia. A thick-bore needle is used in epidural anesthesia (to minimise damage to the dura and facilitate the insertion of the epidural catheter). On reaching the epidural space, the guidewire is removed, and the catheter is then placed. Crawford needle Straight needles without a curved tip Greater incidence of dural puncture It is the image of the Quincke Needle (Dura cutting) used in spinal anaesthesia. (Option A): It is the image of the Sprotte Needle (conical, pencil-point tip; Dura splitting) is used in spinal anaesthesia. (Option B): It is the image of Whitacre Needle with a conical, pencil-point tip (Dura splitting) used mainly in spinal anaesthesia. (Option C):




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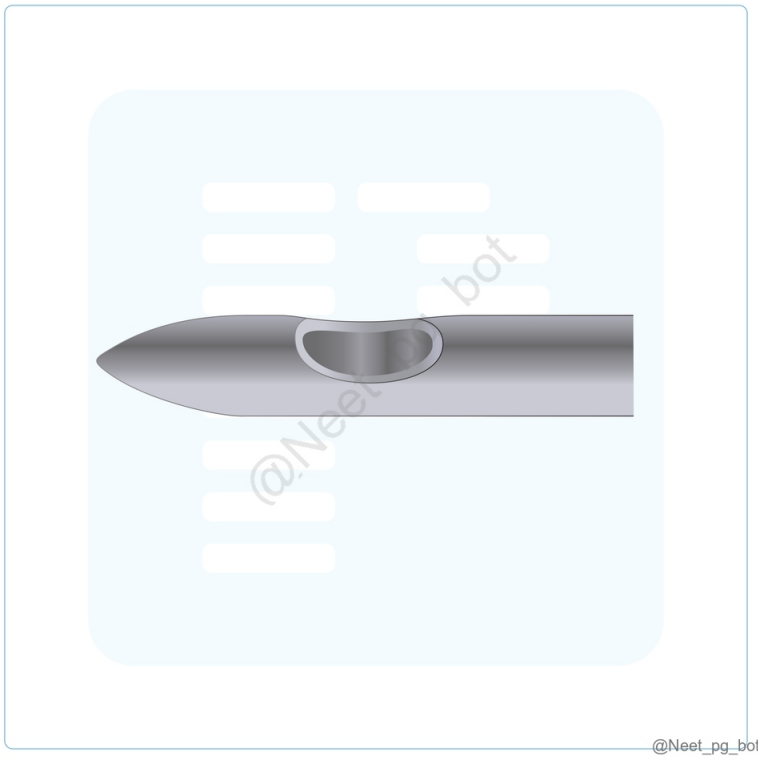

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References:

Miller’s Anesthesia, 9th edition, Page 1435. Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 1835.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q25: A 65-year-old male with a history of aortic stenosis, hypertension, and recent cerebral venous thrombosis on anticoagulant therapy is scheduled for lower limb surgery. The anesthesiology team is evaluating the use of spinal anaesthesia. Which of the following is not a contraindication for spinal anaesthesia in this patient? (Q846799)

A. Aortic stenosis

B. Cerebral venous thrombosis

C. Hypertension

D. Vertebral osteomyelitis

Correct Answer: C. Hypertension

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Hypertension is not a contraindication for spinal anaesthesia. Spinal anaesthesia can be safely used in patients with well-controlled hypertension. It is essential to monitor blood pressure closely during and after the procedure, as spinal anaesthesia can cause hypotension due to sympathetic blockade. Contraindications of Spinal Anesthesia Absolute Contraindications Patient refusal Localized sepsis Allergy to planned medications Patient's inability to remain still Raised intracranial pressure (ICP) Relative Contraindications Myelopathy or Peripheral Neuropathy Spinal Stenosis Previous spine surgery Neural Tube Defects Inherited Coagulopathy System infections Cardiac valvular stenosis Multiple sclerosis Anticoagulant medication Aortic stenosis (Option A) decreases the heart’s ability to maintain adequate blood flow. The sudden drop in blood pressure from spinal anaesthesia could lead to dangerously low coronary perfusion and cardiac ischemia. Cerebral venous thrombosis (Option B), combined with anticoagulant therapy, is a contraindication for spinal anaesthesia due to the risk of elevated intracranial pressure and bleeding complications. Vertebral osteomyelitis (Option C): Introducing a needle into an infected area carries a high risk of spreading the infection to the spinal canal, potentially leading to meningitis or epidural abscess.

References:

Miller’s Anesthesia, 9th edition, Pages 1420,1421

↑ *Back to this question in Part A*

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Q26: A 65-year-old male scheduled for foot and ankle surgery under spinal anaesthesia is unable to raise his leg or move his knee but can move his feet. To ensure adequate sensory block, at which dermatomal level should the spinal anaesthesia be achieved, and what is his motor blockade score according to the Modified Bromage Scale? (Q846798)

A. L2-L3, Score: 2

B. L4-L5, Score: 1

C. L2-L3, Score: 3

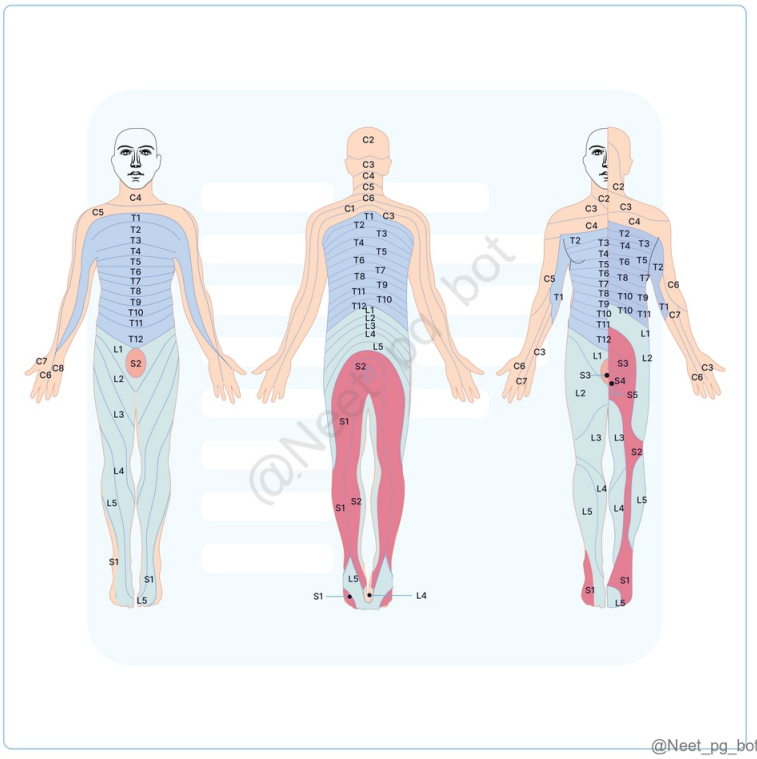
D. L4-L5, Score: 2

Correct Answer: A. L2-L3, Score: 2

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Adequate sensory block for foot and ankle surgery typically requires a dermatomal level of L2-L3. A Bromage scale score of 2 indicates partial motor block, where the patient is unable to raise an extended leg or move a knee but can move feet. Type of Surgery Dermatomal Level Upper abdominal surgery T4 Caesarean delivery Transurethral resection of prostate T10 Hip surgery Foot and ankle surgery L2 Block Monitoring Motor block - Modified Bromage Scale Sensory block 0: No motor block 1: Inability to raise extended leg; able to move knees and feet 2: Inability to raise extended leg and move knee; able to move feet 3: Complete block of motor limb Cold sensation Pinprick Light touch



References:

Gray's Anatomy, 42nd edition, Page 392 Miller's Anesthesia, 9th edition, Pages 1423,1431,1432

↑ *Back to this question in Part A*

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Q27: A 40-year-old male undergoing hernia repair under spinal anaesthesia is being assessed by the anesthesiologist for factors influencing the level of anaesthesia. Which of the following factors is least likely to affect the level of spinal anaesthesia? (Q846797)

A. Baricity of the local anaesthetic

B. Volume of cerebrospinal fluid

C. Age of the patient

D. Type of spinal needle

Correct Answer: D. Type of spinal needle

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The type of needle used for the spinal injection does not have a significant impact on the level of anesthesia achieved, but it may affect the risk of complications, such as post-dural puncture headache. Other factors affecting the level of spinal anesthesia include: Dose of the drugs Pregnancy Positioning of the patient Epidural Injection Post-Spinal Anesthesia Baricity of the local anaesthetic (Option A): Hypobaric drug floats in CSF, leading to a higher level of anaesthesia. Hyperbaric drugs settle down, resulting in a lower level of anesthesia . Volume of CSF (Option B): A ■■■■■■ Higher cerebrospinal fluid (CSF) volume dilutes the anaesthetic , reducing its spread and resulting in a lower level of spinal anaesthesia. Age of the patient (Option C): Advanced age is associated with ↓CSF volume , leading to a higher level of spinal anaesthesia.

References:

Miller’s Anesthesia, 9th edition, Pages 1421,1423-1425

↑ *Back to this question in Part A*

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Q28: A 30-year-old female undergoes spinal anaesthesia for a caesarean section. Twenty hours later, she develops a severe occipital headache that worsens when standing up and improves on lying down. Which of the following is the most definitive treatment for her condition? (Q846796)

A. Oral caffeine

B. Supine positioning

C. Epidural blood patch

D. Intravenous fluids

Correct Answer: C. Epidural blood patch

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient's symptoms are indicative of a post-dural puncture headache (PDPH), which occurs due to a cerebrospinal fluid (CSF) leak following a puncture of the dura mater. Definitive Management of PDPH: Conservative therapy is tried first An epidural blood patch is usually done after 24 hours of persistent symptoms or after the dural puncture. It involves injecting 15-20 mL of autologous blood into the epidural space to create a clot that seals the dural puncture, providing relief from the headache. If the first blood patch does not provide sufficient relief, a second epidural blood patch can be administered 24 to 48 hours after the first. A supine position (Option B) can help reduce the headache by decreasing the pressure gradient and allowing the cerebrospinal fluid (CSF) to stabilize. Hydration (Option C) : Ensuring adequate fluid intake can help replenish lost CSF and alleviate

symptoms. Oral caffeine (Option A) (500mg) can constrict blood vessels and increase CSF production, providing symptomatic relief.

References:

Miller's Anesthesia, 9th edition, Page 1441,1442

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 1852

↑ *Back to this question in Part A*

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Q29: A 45-year-old woman undergoes a caesarean section under spinal anaesthesia. During her recovery, she is monitored for potential complications associated with the anaesthesia. Which of the following is not related to spinal anaesthesia? (Q846795)

A. Transient Neurologic Symptoms

B. Post-Dural Puncture Headache

C. Respiratory Depression

D. Malignant Hyperthermia

Correct Answer: D. Malignant Hyperthermia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Malignant Hyperthermia is more likely associated with general anaesthesia, triggered by volatile anaesthetics and the depolarising muscle relaxant. Post-Op Complications of Spinal Anesthesia Neurological Nerve injury Epidural hematoma Transient Neurologic Symptoms (Option A) Postdural puncture headache (Option B) Arachnoiditis Meningitis Cardiovascular Hypotension Bradycardia Cardiac arrest Other complications Urinary retention (Most common) Respiratory depression (Option C) Backache Nausea & vomiting

References:

Miller's Anesthesia, 9th edition, Pages 1440-1444

↑ *Back to this question in Part A*

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Q30: A 58-year-old man undergoing urological surgery under spinal anaesthesia develops hypotension that does not improve with fluid resuscitation. Which of the following should be administered to manage his hypotension? (Q846794)

A. Metoprolol

B. Atropine

C. Pethidine

D. Ephedrine

Correct Answer: D. Ephedrine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Hypotension is the most common intraoperative complication of spinal anaesthesia due to sympathetic blockage of the lower body, leading to vasodilation and hypotension. If this occurs mid-surgery, the patient can initially be resuscitated with fluids; if the condition does not improve, it can be managed by Vasopressors like Phenylephrine (the drug of choice in Pregnancy) or Ephedrine. Preloading with IV fluids , typically crystalloids , before spinal anaesthesia can help prevent Hypotension. Metoprolol (Option A) : Administering beta-blockers would worsen the hypotension. Atropine (Option B): Used to manage bradycardia Pethidine (Option C): Used to manage shivering

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 1848

↑ *Back to this question in Part A*

@Neet_pg_bot

Q31: A 63-year-old man with benign prostatic hyperplasia (BPH) is scheduled for prostate surgery. During the pre-anaesthesia evaluation, spinal anaesthesia is selected. To ensure adequate anaesthesia for this procedure, what is the required level of the sensory block? (Q846793)

A. Block till L1

B. Block till L2

C. Block till T4

D. Block till T10

Correct Answer: D. Block till T10

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Spinal anaesthesia is generally preferred for surgeries involving areas below the umbilicus and for procedures lasting between 2 to 3 hours. For prostate surgery, a spinal block is administered up to the T10 level; however, the required level can vary for different procedures. Type of surgery Preferred dermatome for spinal block Prostate Surgery Block till T10 Lower segment caesarean section (LSCS) Block till T4 or T6 (Option C) Diabetic foot L1 or L2 (Option A and B) Assessing the level of block: Dermatome level Landmark Area T4 Nipples T6 Sternum T8 Area between Xiphoid and Umbilicus T10 Umbilicus T12 Pubic symphysis

References:

Miller’s Anesthesia, 9th edition, Page 1432 Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 1627, 1832

↑ *Back to this question in Part A*

@Neet_pg_bot

Q32: A 32-year-old woman is on the surgical table for a lower segment caesarean section (LSCS). During the administration of spinal anaesthesia, the anaesthetist suddenly feels a "snap." Which structure is most likely responsible for this sensation? (Q846792)

A. Arachnoid mater

B. Infraspinatus Ligament

C. Supraspinous Ligament

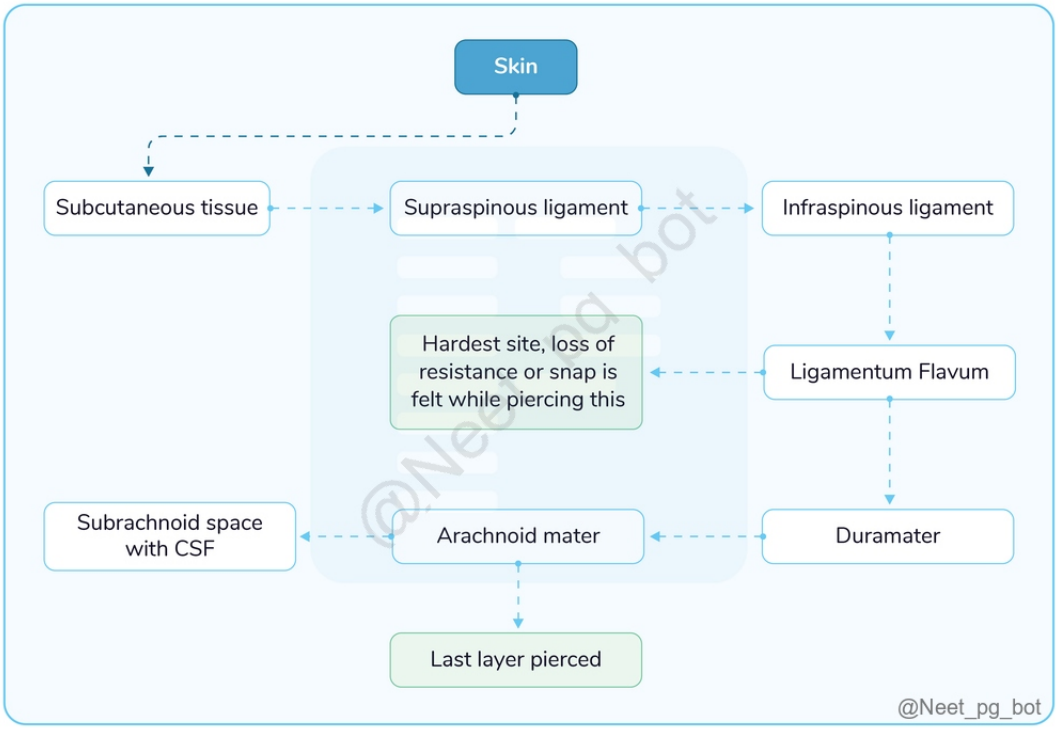
D. Ligamentum Flavum

Correct Answer: D. Ligamentum Flavum

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ligamentum flavum is the toughest ligament and is easily identifiable during a lumbar puncture for spinal anaesthesia, as it presents as a sudden loss of resistance or a snap. Order of structures pierced during lumbar puncture:



References:

Miller's Anesthesia, 9th edition, Pages 1693-1694

↑ *Back to this question in Part A*

@Neet_pg_bot

Q33: A 27-year-old male diagnosed with testicular torsion is scheduled for emergency surgery. During the pre-anesthesia assessment, the type of anaesthesia was decided. Which of the following about the needle (in the image below) used for administering the necessary anaesthesia is incorrect? (Q846791)

A. It creates a smaller puncture

B. Less chances of Post dural puncture headache

C. Used commonly in spinal anaesthesia

D. It is a dura-cutting needle

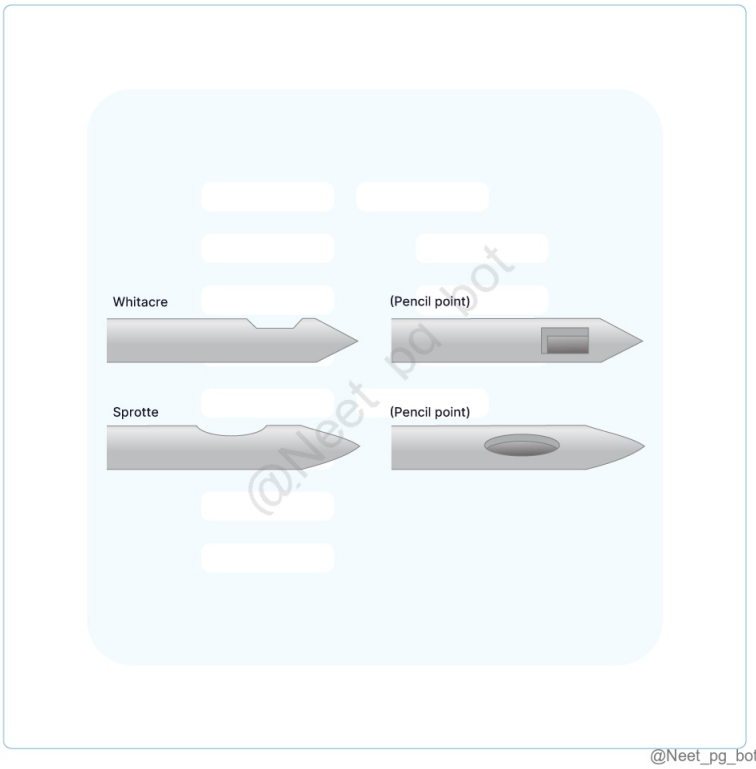


Correct Answer: D. It is a dura-cutting needle

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image depicts a Whitacre needle, a dura-separating needle (not a dura-cutting needle) commonly used in spinal anaesthesia. (Option C ruled out) Characteristics of the Dura separating needle: ■■■■■■■ The pencil point tip creates a smaller puncture. (Option A ruled out) Reduced chances of PDPH (Option B ruled out) 25, 26, or 27 G are regularly used The Dura cutting needle is called Quincke’s needle



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References:

Miller’s Anesthesia, 9th edition, Page 1428

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• [03_Regional Anaesthesia] 006 Previous Year Questions

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[03_Regional Anaesthesia] 006 Previous Year Questions — Quick Jump

Q1 (p. 332) *Q2 (p. 333)* *Q3 (p. 333)* *Q4 (p. 334)* *Q5 (p. 335)* *Q6 (p. 336)*
Q7 (p. 337) *Q8 (p. 338)* *Q9 (p. 339)*

Q1: Which of the following is false regarding Lumbar puncture (Q865390)

A. PDPH is commonly seen in young females

B. Meningitis is not a common complication of lumbar puncture

C. Lumbar puncture must be done in patients with SAH with normal NCCT

D. Lumbar puncture is safe in thrombocytopenia<10k

Correct Answer: D. Lumbar puncture is safe in thrombocytopenia<10k

Explanation: Lumbar Puncture is contraindicated in patients with Platelet count below 50,000 (plts)/µLas it carries a high risk of spinal/epidural hematoma. (Option D) Post-dural puncture headache (PDPH) is a well-known complication of LP, more common in young adults , especially females. (Option A) It occurs due to CSF leak following a puncture of the dura mater in procedures involving spinal anesthesia, epidural catheter placement. Meningitis after LP is rare if aseptic technique is followed, hence this statement is correct. (Option B) Introducing a needle into an infected area carries a high risk of spreading the infection to the spinal canal, potentially leading to meningitis or epidural abscess. In suspected subarachnoid hemorrhage (SAH) the first-line investigation is non-contrast CT (NCCT) of the head and sometimes NCCT can show normal findings. In such cases, LP is mandatory to confirm or rule out SAH, to look for Xanthochromia (yellow discoloration due to breakdown of RBCs) in the CSF. (Option C) Indications of Lumbar Puncture: Meningitis Encephalitis Subarachnoid hemorrhage (SAH) Suspicion of nervous system diseases (like Guillain-Barré syndrome and carcinomatous meningitis) Therapeutic relief of pseudotumor cerebri Encephalitis Dementia Myelitis Leukemia Autoimmune diseases such as multiple sclerosis Contraindications of Lumbar Puncture: Absolute Contraindications Relative Contraindications Presence of infected skin or cellulitis at the site of needle insertion. Evidence of unequal intracranial pressures between the supratentorial and infratentorial compartments Increased ICP Coagulopathy or bleeding disorders Brain abscess

References:

Miller’s Anesthesia, 9th edition, Pages 1440-1444

Medscape

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Q2: A female following an RTA injured her chest. On X-ray, fracture of 3rd to 5th ribs was noted. Pain was not responsive to analgesics. Which block will be given to reduce the pain? (Q852832)

A. Cervical block

B. Thoracic epidural block

C. Supra-clavicular block

D. Lumbar epidural block

Correct Answer: B. Thoracic epidural block

Explanation: Pain Origin: The patient has rib fractures (3rd to 5th ribs), leading to severe pain that is not relieved by analgesics . Best Pain Management: A thoracic epidural block provides excellent analgesia for rib fractures by blocking intercostal nerves at multiple levels. Mechanism: It involves injecting local anesthetics and opioids into the thoracic epidural space , leading to segmental pain relief without systemic opioid side effects. Indications: Used for rib fractures, thoracic surgeries, and trauma-related pain management. Thoracic Epidural Block in Rib Fractures Feature Details Indication Rib fractures, thoracic surgeries, trauma pain Mechanism Blocks intercostal nerves via epidural space Level of Block Usually T4-T8 , depending on rib injury Drugs Used Local anesthetics (e.g., bupivacaine) + opioids (e.g., fentanyl) Advantages Superior pain control, reduces respiratory complications, prevents opioid overuse Complications Hypotension, motor blockade, infection (rare) Cervical block (Option A): Incorrect because cervical plexus blocks are used for neck surgeries, not rib fractures. Supra-clavicular block (Option C): Incorrect because it targets the brachial plexus and is used for upper limb anesthesia, not chest pain. Lumbar epidural block (Option D): Incorrect because lumbar epidurals are used for lower body surgeries and labor analgesia, not rib fractures.

References:

Miller’s Anesthesia, 9th Edition, Page 1033

https://pmc.ncbi.nlm.nih.gov/articles/PMC9840019/

https://pmc.ncbi.nlm.nih.gov/articles/PMC7151756/

https://pubmed.ncbi.nlm.nih.gov/24488821/

↑ *Back to this question in Part A*

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Q3: In epidural anesthesia, which of the following layers is least likely to be punctured during the procedure? (Q860370)

A. Arachnoid mater

B. Ligamentum flavum

C. Supraspinous

D. Infraspinous

Correct Answer: A. Arachnoid mater

Explanation: It is least likely to be punctured in epidural anesthesia as it is not intended to be pierced. Order in which structures are pierced: Skin Subcutaneous fat Supraspinous ligament (Option C) Interspinous ligament (Option D) Ligamentum flavum (Option B)

References:

https://www.ncbi.nlm.nih.gov/books/NBK542219/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Which of the following is most suitable local anesthetic for intravenous regional anesthesia? (Q857814)

A. Bupivacaine

B. Mepivacaine

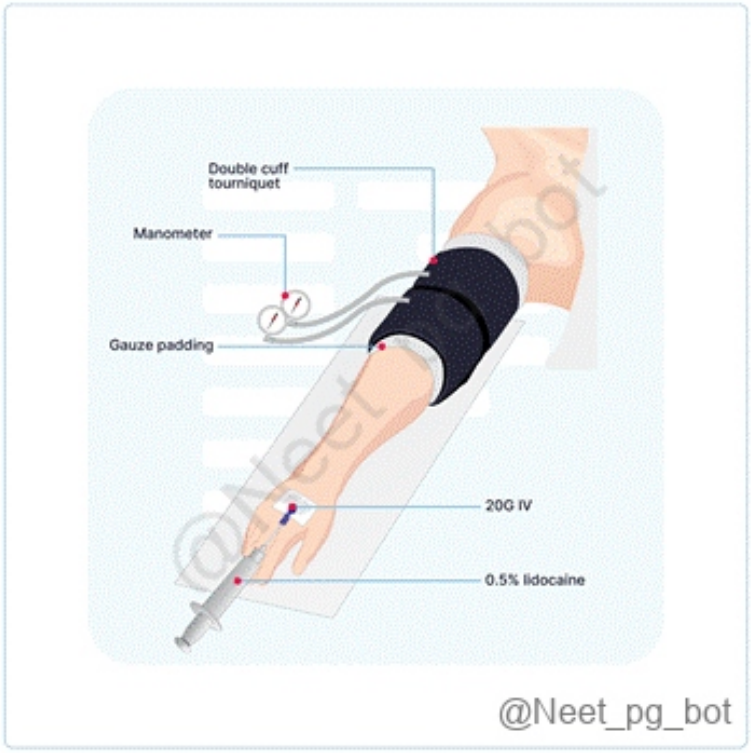
C. Procaine

D. Lidocaine

Correct Answer: D. Lidocaine

Explanation: The most suitable local anesthetic for intravenous regional anesthesia (IVRA), commonly known as Bier's block , is Lidocaine. Intravenous regional anesthesia (IVRA): Indications Suitable for minor surgical procedures on the upper or lower extremities (hand surgeries, forearm procedures, and foot surgeries). Used when general anesthesia is not necessary and for patients with contraindications to other forms of anesthesia. Anesthetic Agents Commonly used local anesthetics include Lidocaine (most frequent) Prilocaine Procedure Steps Tourniquet Application: Apply a tourniquet to the proximal part of the extremity to prevent blood flow and keep the local anesthetic localized. Venous Access: Establish intravenous access in the selected limb. Administration of Anesthetic agent: Inject the local anesthetic into the IV line, typically in a volume of 40-50 mL. Tourniquet

Management The tourniquet should be inflated to a pressure that is approximately 50 mmHg above systolic blood pressure. It is typically safe to keep the tourniquet inflated for 30-60 minutes; prolonged inflation can increase the risk of complications. Advantages Provides effective analgesia with minimal systemic absorption. Allows for a bloodless surgical field. Quick onset of action and ease of administration. Disadvantages and Complications Local Anesthetic Systemic Toxicity (LAST) Can occur if the local anesthetic enters the systemic circulation. Tourniquet Pain Nerve Damage Contraindications Infection at the injection site or over the tourniquet. Severe peripheral vascular disease. Patient refusal or inability to cooperate. Lipid Emulsion Therapy Used as a treatment for Local anesthesia systemic toxicity, acts by sequestering the local anesthetic from circulation and mitigating toxic effects. Administer a 20% lipid emulsion intravenously if toxicity occurs. Bupivacaine (Option A) is the most cardiotoxic drug, and it should never be administered intravenously. Mepivacaine (Option B) has the same anesthetic potency as lidocaine but also has a milder dilating ability, leading to a longer duration of anesthesia without a vasoconstrictor. Procaine (Option C) can be used as an alternative if allergic to lignocaine. It can cause methemoglobinemia.



References:

www.ncbi.nlm.nih.gov/books/NBK430760/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which drug is most likely responsible for the occurrence of hyperthermia and muscle rigidity in a patient undergoing surgery while being administered anesthesia with halothane? (Q856020)

A. D-curare

B. Suxamethonium

C. Cis-atracurium

D. Rocuronium

Correct Answer: B. Suxamethonium

Explanation: Suxamethonium (Succinylcholine) : This depolarizing muscle relaxant can trigger malignant hyperthermia (MH) in genetically susceptible individuals, especially when used with volatile anesthetics like halothane. MH is characterized by hyperthermia, muscle rigidity, hypercapnia, and tachycardia due to excessive calcium release in skeletal muscle. Malignant hyperthermia is a rare but life-threatening condition triggered by drugs like succinylcholine and volatile anesthetics (e.g., halothane), requiring prompt treatment with dantrolene to prevent fatal outcomes. Incorrect Options: D-curare (Option A) : A non-depolarizing muscle relaxant, but it is not associated with triggering malignant hyperthermia. Cis-atracurium (Option C) : A non-depolarizing agent with minimal side effects and no association with MH. Rocuronium (Option D) : Another non-depolarizing muscle relaxant not linked to malignant hyperthermia.

References:

Morgan and Mikhail's Clinical Anesthesiology, Edition 5, Pg 1185- 1188

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A patient presented with headache, vomiting, and fever. Meningitis was suspected. While performing a lumbar puncture, which is the last structure you will pierce just before entering the lumbar cistern? (Q856025)

A. Ligamentum flavum

B. Dura mater

C. Arachnoid membrane

D. Pia mater

Correct Answer: C. Arachnoid membrane

Explanation: Arachnoid membrane : This is the final structure pierced during a lumbar puncture before the needle enters the lumbar cistern, where cerebrospinal fluid (CSF) is present. During a lumbar puncture, the sequence of structures pierced includes skin → subcutaneous tissue → supraspinous ligament → interspinous ligament → ligamentum flavum → dura mater → arachnoid membrane. The needle stops in the lumbar cistern, which lies between the arachnoid membrane and pia mater. Incorrect Options: Ligamentum flavum (Option A) : This is pierced earlier, just after passing through the skin, subcutaneous tissue, and supraspinous and interspinous ligaments. Dura mater (Option B) : This tough, outer meningeal layer is pierced before the arachnoid membrane. Pia mater (Option D) : This innermost meningeal layer closely adheres to the spinal cord and is not pierced during a lumbar puncture unless there is accidental trauma.

References:

Miller's Anaesthesia, Edition 9, Pg 1685, 1700, 1712

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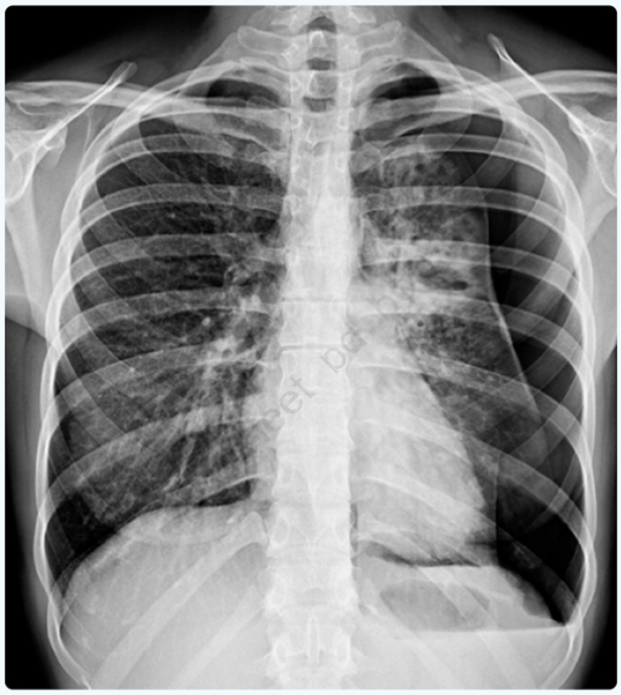
Q7: A smoker who underwent an interscalene block for an arthroscopic acromioclavicular joint reconstruction 2 days ago presents for a follow-up. A chest X-ray is performed, which shows an abnormality. The patient is asymptomatic and is resting comfortably in bed. What is the next step in management? (Q859335)

A. Insert chest drain as soon as possible

B. Do thoracostomy

C. Elective intubation and IPPV

D. Wait and watch and give supplementary oxygen if needed



Correct Answer: D. Wait and watch and give supplementary oxygen if needed

Explanation: Given that the patient is asymptomatic and resting comfortably , the most appropriate course of action is close observation . This approach ensures that any changes in the patient's condition are promptly identified. If the patient develops any signs of respiratory distress or hypoxia , supplementary oxygen can be administered as necessary. Key points: The patient’s asymptomatic status suggests that immediate intervention is not required. Close monitoring helps detect any subtle signs of complications such as pneumothorax or diaphragmatic paralysis . Supplementary oxygen can be provided if respiratory symptoms emerge, ensuring optimal management in case the patient becomes symptomatic. Incorrect Options: Insert chest drain as soon as possible (Option A): Since the patient is asymptomatic and comfortably resting, there is no indication for immediate chest drain insertion. Do thoracostomy (Option B): Thoracostomy is not necessary in this case as there are no indications of a pneumothorax or hemothorax. Elective intubation and IPPV (Option C): Elective intubation and invasive positive pressure ventilation (IPPV) are not warranted in this scenario as the patient is asymptomatic and comfortably resting.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7478996/

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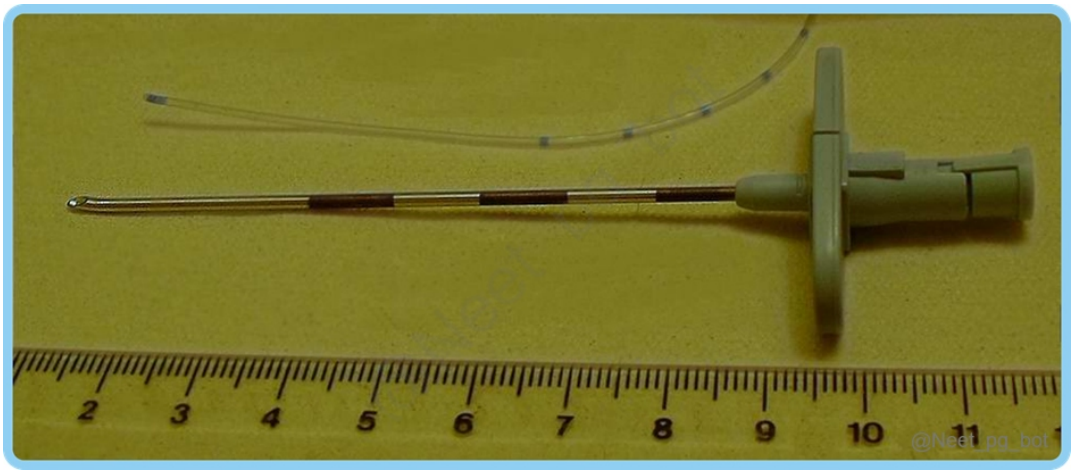
Q8: What is the needle shown in the picture? (Q859735)

A. Whitacre needle

B. Sprotte needle

C. Tuohy needle

D. Quincke-Babcock needle



Correct Answer: C. Tuohy needle

Explanation: The Tuohy needle is characterised by its curved, blunt tip, which is specifically designed to guide catheters into the epidural space for procedures such as: Epidural anaesthesia. Pain management (e.g., labour analgesia). Key features of the Tuohy needle: Blunt curved tip : Minimises the risk of puncturing the dura. Epidural markings : Assist in depth estimation during insertion. Side hole (lateral aperture) : Allows the passage of an epidural catheter. Incorrect Options: Whitacre needle (option A): This is a pencil-point needle used for spinal anaesthesia. It has a non-cutting tip to reduce the risk of post-dural puncture headache. Sprotte needle (option B): Another pencil-point needle designed for spinal anaesthesia with a longer side hole for smooth cerebrospinal fluid flow. Quincke-Babcock needle (option D): A cutting-tip needle used for spinal anaesthesia. It creates a sharp puncture, which increases the risk of post-dural puncture headache compared to pencil-point needles.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 955

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: Identify the nerve block shown in the given image: (Q879122)

A. Inferior alveolar

B. Anterior ethmoidal

C. Maxillary

D. Greater palatine



Correct Answer: D. Greater palatine

Explanation: The image shows a needle inserted into the posterior hard palate , near the second or third molar , aimed toward the greater palatine foramen — classic site for greater palatine nerve block . Areas anesthetized: Posterior hard palate Palatal mucosa and gingiva up to the midline (from third molar to canine region) Incorrect Options: Inferior alveolar (Option A): Used for mandibular teeth, not palate. Approach is from the opposite premolar region at mandibular level, not intra-palatal. Anterior ethmoidal (Option B): Not given intraorally. Used in nasal and orbital procedures. Maxillary (Option C): Given high up in the pterygopalatine fossa via intraoral or extraoral approach.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC4606598/

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@Neet_pg_bot

• [04_Neuromuscular Blockade] 007 Muscle Relaxants

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[04_Neuromuscular Blockade] 007 Muscle Relaxants — Quick Jump

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Q7 (p. 347) *Q8 (p. 347)* *Q9 (p. 348)* *Q10 (p. 349)* *Q11 (p. 350)* *Q12 (p. 351)*
Q13 (p. 352) *Q14 (p. 352)* *Q15 (p. 353)*

Q1: A patient undergoing rapid sequence induction of anaesthesia receives succinylcholine as a muscle relaxant. Shortly after administration, the anesthesiologist notices muscle fasciculations followed by flaccid paralysis. What is the mechanism responsible for these observed effects? (Q846704)

A. Prolonged depolarization of the muscle membrane

B. Competitive inhibition of Ach at the neuromuscular junction

C. Rapid hydrolysis by acetylcholinesterase

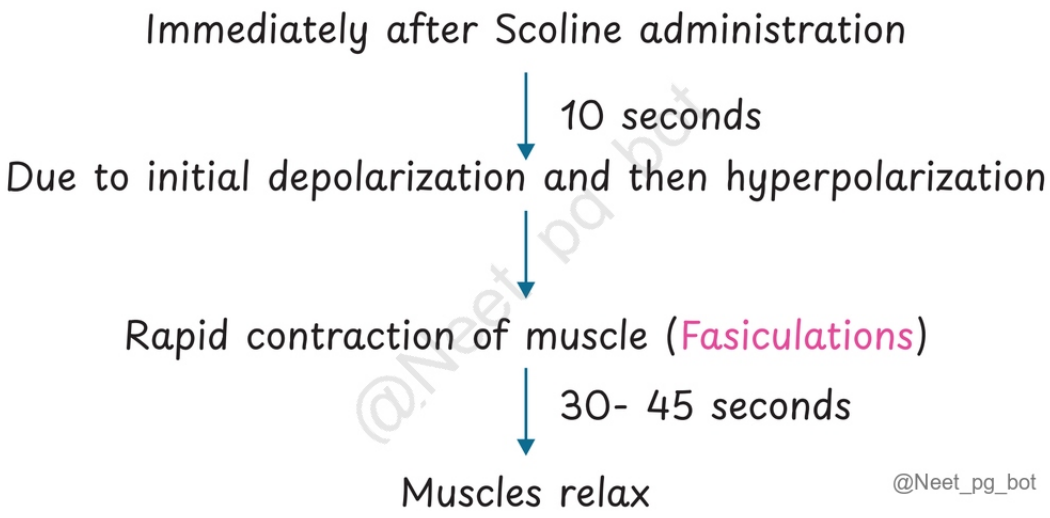
D. Blockade of presynaptic nicotinic receptors

Correct Answer: A. Prolonged depolarization of the muscle membrane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Succinylcholine is a depolarizing neuromuscular blocker. It mimics acetylcholine (Ach) and binds to nicotinic receptors at the neuromuscular junction, causing prolonged depolarization of the muscle membrane. It is metabolised in plasma via pseudocholinesterase. This initial depolarization results in muscle fasciculations, followed by flaccid paralysis because the muscle fibers cannot repolarize, leading to the observed effects. After 3-8 minutes, the muscles contract, and the patient will breathe spontaneously Competitive inhibition of Ach at the neuromuscular junction (Option B): This is characteristic of nondepolarizing muscle relaxants like vecuronium. These agents prevent acetylcholine from binding to nicotinic receptors, without causing depolarization, and thus do not induce fasciculations. Rapid hydrolysis by acetylcholinesterase (Option C): Unlike ACh, which is rapidly hydrolyzed by acetylcholinesterase (AChE), succinylcholine is not quickly broken down. It primarily depends on plasma cholinesterase (butyrylcholinesterase) for metabolism. This rapid metabolism accounts for the short duration of succinylcholine’s action but does not explain the muscle fasciculations. Blockade of presynaptic nicotinic receptors (Option D): Succinylcholine acts directly on postsynaptic receptors, causing continuous depolarization and fasciculations. It does not act on presynaptic receptors.



References:

Miller's Anaesthesia, 9th Edition, Page 334, 351, 792

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which muscle is the first to regain function after muscle relaxation? (Q846705)

A. Triceps

B. Adductor pollicis

C. Quadriceps

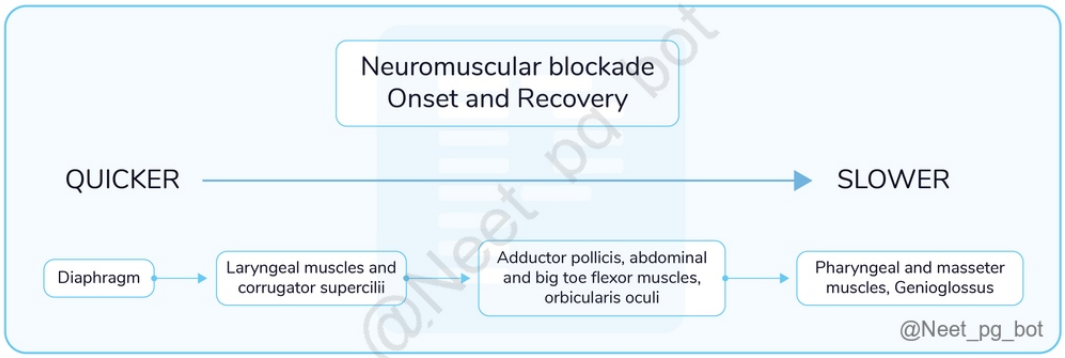
D. Diaphragm

Correct Answer: D. Diaphragm

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The diaphragm , a central muscle involved in breathing, receives a high blood supply, making it one of the first to recover after muscle relaxants wear off. The fast recovery of the diaphragm is important for restoring normal respiratory function following surgery. Triceps (Option A): The triceps, located in the upper arm, are peripherally situated and recover later than centrally located muscles. Adductor pollicis (Option B): Located in the hand, this peripheral muscle tends to recover more slowly because it has lower blood flow compared to central muscles. Quadriceps (Option C): Quadriceps exhibit a slower recovery because they are more distant from central circulation and have less blood flow compared to muscles like the diaphragm.



References:

Miller's Anaesthesia, 9th Edition, Page 792, 805, 809, 811

Neuromuscular block management

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: What type of muscle relaxant works by blocking acetylcholine at the neuromuscular junction? (Q846706)

A. Depolarizing muscle relaxant

B. Non-depolarizing muscle relaxants

C. Centrally acting muscle relaxants

D. Cholinesterase inhibitor

Correct Answer: B. Non-depolarizing muscle relaxants

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Non-depolarizing Muscle Relaxants block acetylcholine by competitively binding to nicotinic acetylcholine receptors at the neuromuscular junction, preventing depolarization. Depolarizing Muscle Relaxants (Option A): Mimic acetylcholine, bind to the Acetylcholine receptors, causing continuous depolarization of the muscle membrane. Centrally acting muscle relaxants (Option C): These drugs work within the central nervous system and are primarily used to reduce muscle spasticity or tension in conditions like multiple sclerosis or spinal cord injuries. Cholinesterase inhibitor (Option D): Cholinesterase inhibitors, like neostigmine, increase the levels of acetylcholine at the neuromuscular junction by inhibiting the enzyme that breaks it down.

References:

Miller’s Anaesthesia, 9th Edition, Page 342, 343, 792 Understanding Neuromuscular Monitoring

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: During surgery, a patient receives a long-acting steroidal non-depolarizing muscle relaxant that is mainly excreted by the kidneys. Which drug is likely used? (Q846708)

A. Vecuronium

B. Rocuronium

C. Pancuronium

D. Gallamine

Correct Answer: C. Pancuronium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Pancuronium is an aminosteroid muscle relaxant with a long duration of action. It is primarily excreted through the kidneys , making it suitable for patients with normal kidney function. Its limited metabolism means it maintains its effectiveness throughout the surgical procedure. Vecuronium (Option A): This is an intermediate-acting aminosteroid muscle relaxant. Vecuronium undergoes significant hepatic metabolism. Rocuronium (Option B): It is an intermediate-acting steroidal muscle relaxant, and its primary elimination occurs in the liver and therefore does not undergo renal excretion. Gallamine (Option D): It is now rarely used in clinical practice due to its side effects. Gallamine blocks both the acetylcholine recognition site and the ion channel of the Nicotinic acetylcholine receptors(nAChR).

References:

Miller’s Anaesthesia, 9th Edition, Page 801, 812, 813, 345

Gallamine

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A patient undergoing prolonged surgery is given the most effective muscle relaxant that undergoes Hofmann elimination. Which of the following benzylisoquinolinium muscle relaxant has been administered? (Q846709)

A. Alcuronium

B. d-Tubocurarine

C. Atracurium

D. Cisatracurium

Correct Answer: D. Cisatracurium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Cisatracurium is the most potent benzylisoquinolinium muscle relaxant . It is a single isomer of atracurium and is metabolised through Hofmann elimination. Due to its high potency, it is administered in lower doses compared to atracurium, making it highly effective in prolonged surgeries. Its breakdown is independent of kidney or liver function, reducing the risk of accumulation and toxicity in patients with organ dysfunction. Benzylisoquinolinium: Benzylisoquinolinium muscle relaxants are non■depolarizing competitive antagonists at nicotinic N M receptors at the neuromuscular junction; they block ACh, prevent end■plate depolarisation, and cause flaccid paralysis in a dose■dependent, train■of■four–depressing manner. Mechanism of Action (MOA): They act as competitive antagonists at nicotinic acetylcholine (ACh) receptors. They bind to the alpha-subunits of the receptor, blocking ACh from attaching. This prevents depolarization of the motor endplate, resulting in skeletal muscle paralysis. Clinical Uses & Reversal: Uses: Facilitating intubation, providing surgical immobility, and managing mechanical ventilation in the ICU. Reversal: Reversed using Neostigmine (Anticholinesterase). Note: They are not compatible with Sugammadex. Main Benzylisoquinolinium muscle relaxants and metabolism: 1. Long-acting agents: d-Tubocurarine (Curare) (Option B): It is a long-acting, non-depolarizing muscle relaxant that is excreted unchanged by the kidneys. Metabolism: Primarily renal excretion. Issue: Heavy histamine release and autonomic ganglion blockade, leading to significant hypotension (low blood pressure). Alcuronium (Alloferin) (Option A): MOA: Competitive antagonist at nicotinic ACh receptors. Elimination: Primarily Renal (70–90% excreted unchanged in urine). Key Features: Derived from toxiferine (a potent curare alkaloid). Causes vagolytic effects (increased heart rate/tachycardia). Low histamine release compared to its predecessor, d-tubocurarine. ■■■■■■■ Metocurine: A methylated derivative of tubocurarine. It was more potent and caused less histamine release than its predecessor but still relied heavily on the kidneys. Doxacurium: The Longest Acting: The most potent neuromuscular blocking agent in this class. Metabolism: Almost entirely renal excretion . Use: Reserved for very long surgeries where cardiovascular stability was a priority, as it does not release histamine. 2. Intermediate-Acting Agents: Their metabolism is "organ-independent." Atracurium (Option C): Uses Hofmann Elimination (spontaneous breakdown) and Ester Hydrolysis . Laudanosine Risk: Its metabolite can cross the blood-brain barrier and potentially cause seizures in extremely high doses (rare in clinical practice). Cisatracurium: An isomer of atracurium. Clinical Advantage: 3-4x more potent, produces far less laudanosine, and has zero histamine release . 3. Short-Acting Agents: Mivacurium: Metabolism: Unique among this class because it is broken down by Plasma Cholinesterase (like Succinylcholine). Drawback: Causes the most histamine release of the modern agents, often resulting in a noticeable "flush" and transient drop in blood pressure. Gantacurium (Experimental/Newer): A "next-generation" ultra-short-acting agent. Metabolism: Degrades via non-enzymatic conjugation with L-cysteine . Goal: Designed to be a non-depolarizing alternative to Succinylcholine for rapid intubation.

References:

Miller’s Anaesthesia, 9th Edition, Page 799, 813, 815, 828

journals.lww.com/anesthesia-analgesia/Fulltext/1995/02000/Alcuronium__A_Pharmacodynamic_and_Pharmacokinetic.29.aspx?trendmd-shared=0&generateEpub=Article%7Canesthesia-analgesia:1995:02000:00029%7C%7C

↑ *Back to this question in Part A*

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Q6: A 45-year-old woman with a known history of myasthenia gravis is undergoing an emergency appendicectomy. The anesthesiologist plans to use muscle relaxants for rapid tracheal intubation. The patient is currently on pyridostigmine. Which of the following is the most appropriate muscle relaxant of choice for this patient? (Q846711)

A. Succinylcholine at a standard dose

B. Rocuronium with sugammadex available for reversal

C. Succinylcholine at a reduced dose

D. Pancuronium for longer paralysis duration

Correct Answer: B. Rocuronium with sugammadex available for reversal

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Myasthenia Gravis (MG) involves reduced acetylcholine (ACh) receptors at neuromuscular junctions due to an autoimmune process, causing muscle weakness and fatigue. Rocuronium is a steroidal neuromuscular blocker, and sugammadex provides a safer, effective reversal option in MG patients, especially in those receiving anticholinesterase treatment. Sugammadex : Offers safer and more effective reversal of steroidal neuromuscular blockers (e.g., rocuronium, vecuronium), especially in MG patients, where neuromuscular recovery can be more complex. Succinylcholine in MG : Larger doses (1.5-2.0 mg/kg) may be needed for rapid tracheal intubation due to fewer ACh receptors. However, anticholinesterase treatment prolongs the effect due to decreased cholinesterase activity. (Options A & C ruled out) Pancuronium for longer paralysis duration (Option D): Pancuronium is a non-depolarizing muscle relaxant. It is generally not used in patients with MG as it is unpredictable, due to uneven muscle weakness in these patients.

References:

Miller’s Anaesthesia, 9th Edition, Page 972, 1042, 1138

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: A 30-year-old male is brought to the emergency department after a motor vehicle accident and requires rapid tracheal intubation. The patient has a history of spinal cord injury from a previous accident 6 months ago. Which of the following muscle relaxants should be used with utmost caution? (Q846712)

A. Rocuronium

B. Suxamethonium

C. Vecuronium

D. Atracurium

Correct Answer: B. Suxamethonium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Suxamethonium (succinylcholine) is a depolarizing muscle relaxant. In patients with a history of spinal cord injury, especially several months after the injury, there is an increased risk of hyperkalemia due to upregulation of acetylcholine receptors in the muscle. This can lead to excessive potassium release when succinylcholine is administered, potentially causing life-threatening cardiac arrhythmias. Hence, it should be used with utmost caution. Rocuronium and vecuronium & Atracurium (Option A, C & D) are non-depolarizing muscle relaxants that do not cause significant potassium release (leading to cardiac arrhythmias), like how succinylcholine does.

References:

Miller's Anaesthesia, 9th Edition, Page 334, 343, 793, 796, 797, 798

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 40 y/o man undergoes surgery and receives suxamethonium for rapid sequence induction. After surgery, he experiences prolonged apnea. Genetic testing reveals he has a homozygous atypical pseudocholinesterase enzyme. What is the most likely explanation for his prolonged apnea? (Q846713)

A. Increased acetylcholinesterase activity

B. Increased sensitivity to suxamethonium due to genetic predisposition

C. Interaction with a non-depolarizing muscle relaxant

D. Hyperkalemia caused by suxamethonium

Correct Answer: B. Increased sensitivity to suxamethonium due to genetic predisposition

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Suxamethonium (succinylcholine) is broken down by pseudocholinesterase (plasma cholinesterase). In individuals with a genetic variant that leads to atypical pseudocholinesterase, the breakdown of suxamethonium is significantly slower, resulting in prolonged muscle paralysis and apnea. This condition is more common in individuals with a homozygous atypical variant of the pseudocholinesterase enzyme, causing them to be more sensitive to the drug and leading to a prolonged duration of action. Increased acetylcholinesterase activity (Option A) : Acetylcholinesterase does not significantly metabolize suxamethonium. Interaction with a non-depolarizing muscle relaxant (Option C) : Suxamethonium can interact with other muscle relaxants (e.g., mivacurium), prolonging their effects and potentially exacerbating respiratory muscle paralysis but is not the most likely cause in this scenario as there is the presence of atypical pseudocholinesterase. Hyperkalemia caused by suxamethonium (Option D) : While suxamethonium can cause hyperkalemia in certain conditions, the main cause of prolonged apnea here is genetic pseudocholinesterase deficiency.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 7th Edition, Page 368, 382

Miller’s Anaesthesia, 9th Edition, Page 795

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: A 45-year-old male is undergoing surgery and is given repeated doses of suxamethonium for muscle relaxation. After some time, his muscle response starts to fade despite continuous stimulation. This is most likely due to the development of a phase II block. Which of the following is not a characteristic feature of phase II block with suxamethonium? (Q846714)

A. It is associated with a fade in muscle response during repetitive nerve stimulation

B. It can be influenced by prolonged exposure to suxamethonium

C. It responds predictably to cholinesterase inhibitors like neostigmine

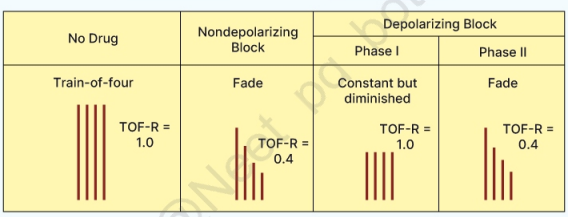
D. Fast-twitch muscle fibres are more susceptible to phase II block than slow-twitch fibres

Correct Answer: C. It responds predictably to cholinesterase inhibitors like neostigmine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The response to cholinesterase inhibitors is unpredictable and may even worsen the block. TOF of Phase II depolarizing block Phase II block occurs with continuous or repeated exposure to depolarizing muscle relaxants, particularly suxamethonium, and is characterized by a gradual fade in muscle response. (Option A ruled out) Duration of exposure : Prolonged exposure to suxamethonium increases the chance of developing Phase II block. (Option B ruled out) Muscle type : Fast-twitch muscle fibres are more susceptible to Phase II block than slow-twitch fibres. (Option D ruled out)



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References:

Miller’s Anaesthesia, 9th Edition, Page 345, 346

↑ *Back to this question in Part A*

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Q10: A 30-year-old male with a history of extensive burns sustained two weeks ago requires rapid sequence intubation for surgery. The anaesthetist considers using suxamethonium for muscle relaxation. Which of the following is the most appropriate reason to avoid using suxamethonium in this patient? (Q846715)

A. Risk of increased intracranial pressure

B. Risk of phase II block

C. Risk of hyperkalemia

D. Risk of myalgia

Correct Answer: C. Risk of hyperkalemia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Suxamethonium can cause a dangerous release of potassium in patients with burns or muscle trauma due to upregulated acetylcholine receptors, leading to life-threatening hyperkalemia and cardiac arrhythmias. Side effects of Suxamethonium: Bradycardia, Hyperkalemia, myalgia, and Masseter Muscle Rigidity Risk of increased intracranial pressure (Option A) : While suxamethonium can increase intracranial pressure, this is not the primary concern in patients with recent burns. Risk of Phase II block (Option B) : Phase II block can occur with repeated or prolonged use, but it is not the main concern in burn patients. Risk of myalgia (Option D) : Myalgia is a known side effect of suxamethonium, but it is not the primary contraindication in this scenario.

References:

Miller's Anaesthesia, 9th Edition, Page 796-799, 825, 826, 978, 1123

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: A 28-year-old man with a history of asthma is undergoing elective surgery. He is induced with isoflurane and given succinylcholine for muscle relaxation. Within minutes, the surgical team observes that he has developed severe muscle rigidity, a rapid heart rate, and a notable increase in body temperature. Which drug/s is/are most likely responsible for the onset of these symptoms in this patient? (Q846716)

A. Isoflurane only

B. Succinylcholine only

C. Both isoflurane and succinylcholine

D. Neither isoflurane nor succinylcholine

Correct Answer: C. Both isoflurane and succinylcholine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In this case, the diagnosis of malignant hyperthermia is typically made based on the presence of characteristic clinical signs—such as muscle rigidity, tachycardia, and hyperthermia—following exposure to certain anaesthetic agents. The combination of both isoflurane (an inhaled anaesthetic) and succinylcholine (a depolarizing muscle relaxant) heightens the risk of developing this serious condition, which is indicated by the rapid onset of symptoms in the patient after their administration. Triggers of Malignant Hyperthermia: Inhaled general anesthetics Ether Halothane Enflurane Isoflurane Desflurane Sevoflurane Depolarizing muscle relaxant Succinylcholine Prior exercise, even just an hour before anaesthesia induction, intensifies the severity and accelerates the onset of rigidity.

References:

Miller's Anaesthesia, 9th Edition, Pages 1120, 1121, 1123

Morgan and Mikhail's Clinical Anaesthesia, 7th Edition, Pages 2298-2300

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: During a routine orthopaedic surgery, a 35-year-old female patient develops muscle rigidity, tachycardia, and elevated body temperature shortly after being administered halothane and succinylcholine. Which of the following actions should the anesthesiologist take first to manage this patient's condition? (Q846717)

A. Administer dantrolene and bicarbonate immediately.

B. Stop halothane and succinylcholine, and hyperventilate with 100% oxygen.

C. Administer dantrolene and continue the surgery with halothane only.

D. Administer cold IV fluids with dantrolene.

Correct Answer: B. Stop halothane and succinylcholine, and hyperventilate with 100% oxygen.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The priority in managing malignant hyperthermia is to immediately discontinue the triggering agents—halothane and succinylcholine—and then hyperventilate the patient with 100% oxygen. This helps to counteract hypoxia and stabilize the patient's condition. Treatment for malignant hyperthermia Discontinue volatile anaesthetics and succinylcholine immediately. Notify the surgeon and call for assistance. (Option B) Hyperventilate the patient with 100% oxygen at a fresh flow rate of at least 10 L/min. Mix dantrolene sodium with sterile distilled water and administer 2.5 mg/kg intravenously as soon as possible. Repeat every 5 to 10 minutes until symptoms improve, with a maximum total dose of 10 mg/kg. (Option A) Administer bicarbonate to address metabolic acidosis. Implement cooling measures, such as lavage, cooling blankets, and cold intravenous fluids.

(Option D) For severe hyperkalemia, administer dextrose (25–50 g IV) along with regular insulin (10–20 units IV for adults). Provide antiarrhythmic medications as necessary. Monitor end-tidal CO 2 levels, electrolytes, blood gases, creatine kinase, serum myoglobin, core temperature, urinary output and colour, and coagulation status.

References:

Miller's Anaesthesia, 9th Edition, Page 1118, 1123, 1124, 1125

Morgan and Mikhail's Clinical Anaesthesia, 7th Edition, Page 2301, 2302

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: Which of the following factors will not potentiate the effect of neuromuscular blockade? (Q846718)

A. Hypercalcemia, Alkalosis

B. Hypermagnesemia, Hypothermia

C. Lithium, Tetracycline

D. Local anesthetics, Clindamycin

Correct Answer: A. Hypercalcemia, Alkalosis

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Both hypercalcemia and alkalosis can reduce the effectiveness of neuromuscular blockers thus shortening their effects. Factors That Potentiate the Effect of Neuromuscular Blockade Physiological changes in older adults Hypothermia (Option B ruled out) Hypermagnesemia (Option B ruled out) Hypocalcemia Acidosis Antimicrobials (aminoglycosides, tetracyclines, polymyxins, clindamycin) (Option C & D ruled out) Inhaled anesthetics Lithium (Option C ruled out) Local anaesthetics (Option D ruled out)

References:

www.ncbi.nlm.nih.gov/books/NBK538301/

www.sciencedirect.com/topics/immunology-and-microbiology/neuromuscular-blocking#

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 45-year-old female presents to the emergency department with altered mental status, flushed skin, and tremors after starting a new antidepressant. On examination, there is hyperreflexia in the lower extremities, muscle rigidity, and clonus. Which syndrome should be considered in her case? (Q846719)

A. Malignant Hyperthermia

B. Serotonin Syndrome

C. Neuroleptic Malignant Syndrome

D. Heat Exhaustion

Correct Answer: B. Serotonin Syndrome

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given scenario is suggestive of Serotonin Syndrome. A potentially life-threatening condition resulting from excessive serotonergic activity. Triggers: Use of serotonergic medications, antidepressants , drug interactions, or overdose (e.g., SSRIs , tramadol). Pathophysiology: Increased serotonin synthesis, impaired metabolism, or enhanced receptor activation. Symptoms: Altered mental status (e.g., agitation, confusion) Autonomic instability (e.g., tachycardia, hypertension) Neuromuscular signs (e.g., tremors, clonus) Hyperreflexia, positive Babinski sign, muscle rigidity, and flushed skin. Management: Discontinue serotonergic agents. Supportive care, including IV fluids and benzodiazepines. Malignant Hyperthermia (Option A) occurs in response to certain anesthetic agents, not antidepressants, and presents during or after surgery with muscle rigidity, hyperthermia, and metabolic acidosis. Neuroleptic Malignant Syndrome (Option C) is triggered by antipsychotics (not antidepressants), it features lead-pipe rigidity and bradyreflexia rather than clonus and hyperreflexia. Heat Exhaustion (Option D) is caused by prolonged heat exposure, it presents with dehydration and fatigue but lacks neuromuscular signs like clonus or hyperreflexia.

References:

Miller’s Anaesthesia, 9th Edition, Page 498

Malignant hyperthermia

Neuroleptic Malignant Syndrome

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A 30-year-old female patient is scheduled for laparoscopic cholecystectomy under daycare anaesthesia. Which muscle relaxant would be appropriate to ensure rapid recovery while minimising residual effects? (Q846721)

A. Succinylcholine

B. Cisatracurium

C. Rocuronium with Sugammadex

D. Pancuronium

Correct Answer: C. Rocuronium with Sugammadex

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: An ideal muscle relaxant used in daycare surgery should have a rapid onset, minimal side effects, and a rapid and reliable recovery to avoid postoperative residual curarization (PORC). Rocuronium, when used with sugammadex , allows for rapid onset of muscle relaxation and a reliable and fast reversal of the neuromuscular blockade. This is ideal for day-care procedures where a quick recovery and discharge are essential. Sugammadex binds rocuronium directly, providing a rapid and safe reversal of muscle paralysis. Succinylcholine (Option A): It is often avoided in daycare anaesthesia due to the risk of severe side effects, including malignant hyperthermia, hyperkalemia, and postoperative muscle pain, which can complicate recovery. Cisatracurium (Option B): Its onset is slower than rocuronium, and it lacks a specific reversal agent as fast as sugammadex, which can prolong the time to discharge in daycare settings. Pancuronium (Option D): This long-acting muscle relaxant is known for significant residual neuromuscular effects, which can lead to extended recovery times.

References:

Rocuronium and sugammadex and rapid emerge in day-care surgery

DaycareAnaesthesia, Page 7

Residual neuromuscular block

Miller’s Anaesthesia, 9th Edition, Page 799, 812

↑ *Back to this question in Part A*

@Neet_pg_bot

• [04_Neuromuscular Blockade] 008 Previous Year Questions

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[04_Neuromuscular Blockade] 008 Previous Year Questions — Quick Jump

Q1 (p. 355) *Q2 (p. 356)* *Q3 (p. 357)* *Q4 (p. 358)* *Q5 (p. 358)* *Q6 (p. 359)*
Q7 (p. 360)

Q1: A 50-year-old male patient underwent lower abdominal surgery under general anaesthesia. Vecuronium was administered as a muscle relaxant during the procedure. At the end of the surgery, which of the following is the most appropriate agent to reverse the effects of vecuronium? (Q865383)

A. Neostigmine

B. Baclofen

C. Atropine

D. Drotaverine

Correct Answer: A. Neostigmine

Explanation: Vecuronium is an intermediate-acting Nondepolarizing Muscle Relaxant , and its action is reversed by cholinesterase inhibitors that increase acetylcholine levels . Vecuronium acts by blocking acetylcholine by competitively binding to nicotinic acetylcholine receptors at the neuromuscular junction, preventing depolarisation. Cholinesterase inhibitors, like neostigmine, increase the levels of acetylcholine at the neuromuscular junction by inhibiting the enzyme that breaks it down, increasing its concentration and restoring muscle activity. Commonly given along with atropine or glycopyrrolate to counteract muscarinic side effects. (Option C) Baclofen (Option B) is a GABA-B receptor agonist used as a muscle relaxant in spasticity. It has no role in reversing neuromuscular blockade, in fact, it causes relaxation , not reversal. Drotaverine (Option D) is an antispasmodic drug used for smooth muscle spasms , like in renal colic or dysmenorrhea. It has no effect on skeletal muscle or neuromuscular blockers.

References:

Miller’s Anaesthesia, 9th Edition, Page 342, 343, 792

Understanding Neuromuscular Monitoring

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which of the following conditions is not reversed with the administration of atropine? (Q852519)

A. Bradycardia

B. Muscle weakness due to neuromuscular blockade

C. Excessive salivation

D. Bronchoconstriction

Correct Answer: B. Muscle weakness due to neuromuscular blockade

Explanation: Muscle weakness due to neuromuscular blockade is not reversed by atropine administration. Atropine is an antimuscarinic (anticholinergic) agent that competitively blocks muscarinic acetylcholine receptors. It has no effect on nicotinic acetylcholine receptors at the neuromuscular junction , which are responsible for skeletal muscle contraction. Therefore, atropine cannot reverse muscle weakness caused by neuromuscular blocking agents. Atropine Classification Anticholinergic drug (Muscarinic receptor antagonist) Competitive antagonist at muscarinic receptors Mechanism of Action Competitive inhibition of postganglionic acetylcholine muscarinic receptors Blocks all subtypes of muscarinic receptors (M■, M■, M■) Direct vagolytic action leading to parasympathetic inhibition Allows preexisting sympathetic stimulation to predominate Pharmacological Actions 1. CNS Effects Overall CNS stimulant action Stimulates medullary centers (vagal, respiratory, vasomotor) Depresses vestibular excitation (antimotion sickness property) Suppresses tremor and rigidity in parkinsonism High doses: cortical excitation, restlessness, hallucinations, delirium Very high doses: respiratory depression and coma 2. CVS Heart: Tachycardia (primary effect) - blocks M■ receptors on SA node (Option A Ruled Out) Initial transient bradycardia may occur with IM/SC injection Abbreviates refractory period of A-V node Facilitates A-V conduction Shortens P-R interval Blood Pressure: No consistent/marked effect on BP Tachycardia and vasomotor center stimulation tend to raise BP Histamine release and direct vasodilator action (at high doses) tend to lower BP Blocks vasodepressor action of cholinergic agonists 3. Eye Mydriasis (pupil dilation) Cycloplegia (paralysis of accommodation) Abolition of light reflex Effects last 7-10 days with topical application May increase intraocular tension, especially in narrow angle glaucoma Has mild local anesthetic action on cornea 4. Smooth Muscles Relaxes all visceral smooth muscles with parasympathetic innervation (M■ blockade) Reduces tone and amplitude of GI contractions Slows passage of chyme; may cause constipation Causes bronchodilation , reduces airway resistance (Option D Ruled Out) Relaxes ureter and urinary bladder Relaxation of biliary tract (less marked) Minimal effect on uterus 5. Glandular Secretions Markedly decreases sweat, salivary , tracheobronchial and lacrimal secretions (M■ blockade) (Option C Ruled Out) 6. Body Temperature Higher doses can cause rise in body temperature Due to inhibition of sweating and stimulation of temperature regulating center Children are highly susceptible to atropine fever Relative Sensitivity of Organs Decreasing order of sensitivity: Saliva, sweat, bronchial secretion > eye, bronchial muscle, heart > smooth muscle of intestine, bladder > gastric glands and smooth muscle

References:

Essentials of Medical Pharmacology, KD Tripathi, 8th Edition, Page 124-136

↑ *Back to this question in Part A*

Q3: A patient who received a supraclavicular brachial plexus block with 0.5% bupivacaine develops hypotension and arrhythmias. What is the first-line treatment for this situation? (Q860371)

A. Invasive ventilation

B. 20% intralipid infusion

C. Sodium bicarbonate

D. Cardiopulmonary resuscitation

Correct Answer: B. 20% intralipid infusion

Explanation: This is a case of Local Anesthetic Systemic Toxicity (LAST) caused by bupivacaine as seen by the cardiac side effects (hypotension and arryhthmia). Treatment of choice is 20% intralipid infusion. Local Anesthetic Systemic Toxicity (LAST): Clinical Features CNS effects: Early and less severe. First symptom: circumoral paraesthesia First sign: nystagmus At low plasma concentration: mild sensory disturbances. Increased concentration: CNS excitation, seizure activity. Higher concentration: CNS depression, coma, respiratory depression, arrest. Cardiac effects: Usually late but severe form of toxicity, may lead to death. Hypotension, dysrhythmias, myocardial depression. Potent agents (bupivacaine, ropivacaine, levobupivacaine) linked to cardiovascular collapse, heart block. Safety profile Bupivacaine has more risk to cause LAST than Lidocaine Most potent highly lipid soluble drugs are more likely to cause Prevention Risk recognition and dose reduction. Careful aspiration before injection. Incremental administration (3-5 mL) with continuous heart rate monitoring. Use ultrasonographic guidance to confirm anesthetic deposit. Use a vasoactive agent like epinephrine to reduce systemic absorption and serve as an intravascular indicator. Treatment Recognize LAST (Local Anesthetic Systemic Toxicity) early and call for help. Airway management: Secure airway, ventilate with 100% oxygen. Administer 20% Lipid Emulsion: Bolus: 12 mL/kg over 2-3 min. Infusion: at 0.25 mL/kg/min-0.5ml/kg/min for 15-20 mins Maximum initial dose: 12 ml/kg Administration of antiepileptics: for seizure control, benzodiazepines such as Lorazepam is preferred. Cardiopulmonary resuscitation: if necessary, monitor the patient at least for initial 2-6 hours following resuscitation. Incorrect Options: Invasive ventilation and Cardiopulmonary resuscitation (Option A and D): This is indicated only if there is a cardiac arrest. Since the question stem indicates hypotension and arrhythmia, this is not the correct answer. Sodium bicarbonate (Option C): Lipid emulsion therapy is preferred over sodium bicarbonate for bupivacaine toxicity because it directly binds and sequesters bupivacaine, reducing its concentration and toxic effects on the heart and brain. Sodium bicarbonate can help correct metabolic acidosis, but it doesn’t target bupivacaine toxicity directly and is less effective in severe cases. Lipid emulsion therapy is considered the most effective treatment for life-threatening toxicity.

References:

Barash Clinical Anesthesia 9th edition pages 1706-1721

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 45-year-old patient undergoing surgery was administered 85 mg of rocuronium to induce anesthesia, but the induction failed. Which drug should be administered for immediate reversal of the rocuronium? (Q839916)

A. Neostigmine

B. Sugammadex

C. Glycopyrrolate

D. Edrophonium

Correct Answer: B. Sugammadex

Explanation: Correct Option B - Sugammadex: Sugammadex is a modified gamma-cyclodextrin that is used to reverse steroidal non-depolarizing neuromuscular blocking drugs rocuronium and vecuronium. It works by rapidly encapsulating free rocuronium in the plasma, which decreases its concentration. This creates a concentration gradient that drives more rocuronium out of the neuromuscular junction and into the plasma, where it is then encapsulated by sugammadex. It increases the speed of neuromuscular blockade reversal and greatly reduces the risk of residual neuromuscular paralysis. Incorrect Options: Options A , C, and D are less effective than sugammadex for reversing rocuronium.

References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A patient is given a nicotinic receptor antagonist as a muscle relaxant. Which drug is given postoperatively to recover from muscle weakness? (Q854895)

A. Physostigmine

B. Neostigmine

C. Carbachol

D. Succinylcholine

Correct Answer: B. Neostigmine

Explanation: The drug commonly used postoperatively to reverse muscle weakness induced by a nicotinic receptor antagonist (such as a non-depolarizing neuromuscular blocking agent) is Neostigmine . Neostigmine : An acetylcholinesterase inhibitor that increases the concentration of acetylcholine at the neuromuscular junction. This facilitates the activation of nicotinic receptors, effectively reversing the effects of non-depolarizing neuromuscular blockers (e.g., rocuronium, vecuronium) and restoring normal muscle function. Neostigmine is often co-administered with an anticholinergic agent (e.g., glycopyrrolate or atropine) to counteract muscarinic side effects such as bradycardia and excessive salivation. It is specifically effective against non-depolarizing neuromuscular blockers and is not used for depolarizing agents like succinylcholine. Incorrect Options: Physostigmine (Option A): Although physostigmine is also a cholinesterase inhibitor, it primarily crosses the blood-brain barrier and is used to reverse central nervous system effects of anticholinergic toxicity. It is not routinely used to reverse neuromuscular blockade. Carbachol (Option C) is a direct cholinergic agonist that mimics acetylcholine. It is used in ophthalmology (e.g., for glaucoma) but not for reversing the effects of muscle relaxants. Succinylcholine (Option D) is a depolarising neuromuscular blocker used to induce paralysis during short procedures. It is not used to reverse muscle relaxation and may even worsen weakness if given postoperatively.

References:

Miller’s Anesthesia, 8th Edition, Page 425

https://pmc.ncbi.nlm.nih.gov/articles/PMC5568091/

↑ *Back to this question in Part A*

@Neet_pg_bot

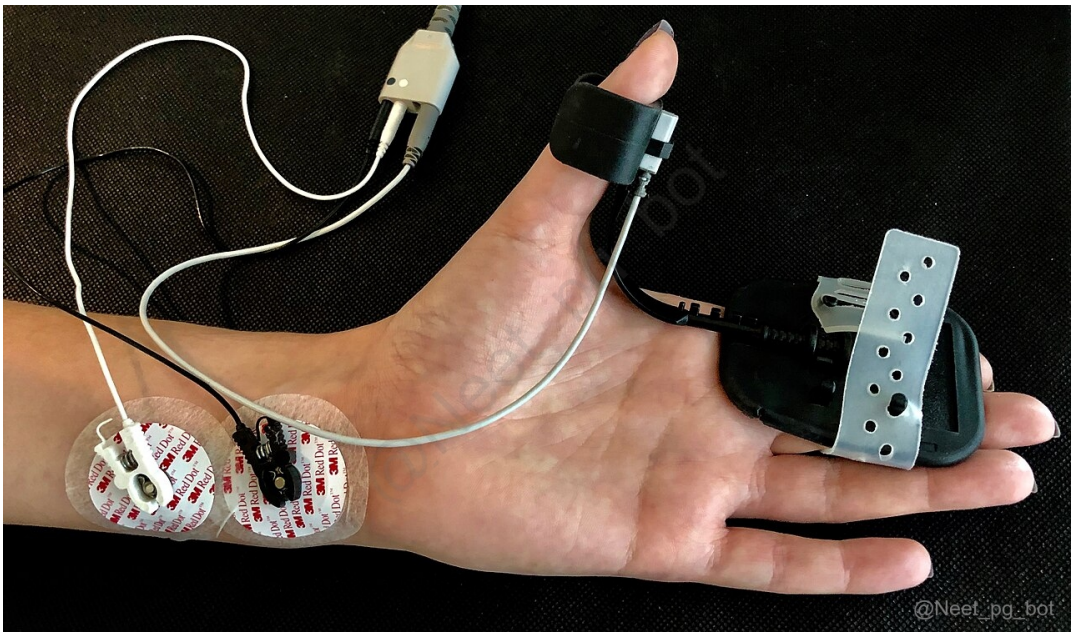
Q6: The image given below shows neuromuscular monitoring of the patient after anesthesia. What is the most commonly used nerve for monitoring? (Q855547)

A. Ulnar nerve

B. Median nerve

C. Radial nerve

D. Metacarpal nerve



Correct Answer: A. Ulnar nerve

Explanation: The ulnar nerve is the most common choice for neuromuscular monitoring because it is easily accessible at the wrist and provides a reliable measure of muscle response, specifically of the adductor pollicis (thumb). Monitoring this nerve helps ensure proper assessment of neuromuscular blockade and recovery before extubation.■ Most reliable and accessible site. Assesses contraction of the thumb (adductor pollicis). Helps prevent residual paralysis and improve patient safety.■ This nerve's stimulation remains the gold standard for confirming adequate neuromuscular function during anesthesia. Median nerve (Option B): Stimulating the median nerve usually elicits thumb flexion, but it is less commonly used for neuromuscular monitoring as it’s not as reliable for blockade assessment. Radial nerve (Option C): While the radial nerve controls wrist and finger extension, it is less commonly monitored because it’s harder to standardize the response. Metacarpal nerve (Option D): This is not typically used for neuromuscular monitoring as it does not provide consistent or reliable muscle response for assessing blockade.

References:

Miller’s Anaesthesia, Edition 9, Pg 1356, 1357, 1361

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Which method is considered the most effective for evaluating the extent of muscle relaxation? (Q793429)

A. Tetanic stimulation

B. Double-burst stimulation

C. Train of four

D. Electromyography

Correct Answer: C. Train of four

Explanation: Correct Option C: Train-of-four: The train-of-four (TOF) method is considered the gold standard for assessing the degree of muscle relaxation during anesthesia. It involves stimulating a motor nerve at a high frequency and observing the resulting muscle twitch responses. By comparing the amplitude of the fourth twitch to the first, anesthesiologists can accurately quantify neuromuscular blockade and tailor drug dosages to achieve optimal relaxation while minimizing the risk of residual paralysis.. Incorrect Options A, B, and D are not the most effective for evaluating the extent of muscle relaxation. Option A: Tetanic stimulation: Unlike tetanic stimulation, which induces sustained muscle contraction, TOF delivers a series of four brief stimuli, allowing for the assessment of fade in muscle twitch responses as neuromuscular blockade increases. Option B: Double burst stimulation: While double burst stimulation delivers two bursts of electrical impulses in rapid succession, TOF provides four individual stimuli, allowing for a more detailed assessment of fade in muscle twitch responses. Option D: Electromyography: EMG measures muscle electrical activity, which may be influenced by factors other than neuromuscular blockade, such as muscle fatigue or electrode placement.

References:

Morgan & Mikhail's Clinical Anesthesiology

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• [05_General Anaesthesia] 009 Previous Year Questions

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[05_General Anaesthesia] 009 Previous Year Questions — Quick Jump

Q1 (p. 362) *Q2 (p. 362)* *Q3 (p. 363)* *Q4 (p. 364)* *Q5 (p. 364)* *Q6 (p. 365)*
Q7 (p. 366) *Q8 (p. 367)* *Q9 (p. 368)* *Q10 (p. 369)* *Q11 (p. 370)* *Q12 (p. 371)*
Q13 (p. 371) *Q14 (p. 372)* *Q15 (p. 373)*

Q1: Which drug is used to reverse the muscle relaxant effects of vecuronium when renal function is normal? (Q844119)

A. Sugammadex

B. Neostigmine

C. Atropine

D. Physostigmine

Correct Answer: A. Sugammadex

Explanation: Correct Option A - Sugammadex Sugammadex is a selective reversal agent that binds to vecuronium and reverses its effects. It is particularly useful in patients with normal renal function and is known for its rapid action. Incorrect Options: Options B, C, and D are not preferred in a reversal of vecuronium.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: A 25-year-old patient undergoing orthopedic surgery who underwent general anesthesia suddenly developed a rise in EtCO2, temperature, and also muscle rigidity. Which of the following drugs leads to such complications? (Q844125)

A. Propofol

B. Nitrous oxide

C. Etomidate

D. Halothane

Correct Answer: D. Halothane

Explanation: Correct Option D – Halothane: The scenario describes malignant hyperthermia, a life-threatening reaction to certain anesthetic agents, including halothane. It is characterized by increased EtCO2, hyperthermia, and muscle rigidity. Incorrect Options: Options A, B, and C are not associated with malignant hyperthermia.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Arrange the following agents on the basis of their potency. Nitrous Oxide Halothane Isoflurane Methoxyflurane (Q854960)

A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

B. Methoxyflurane > Isoflurane > Halothane > Nitrous Oxide

C. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

D. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

Correct Answer: A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

Explanation: The potency of inhalational anesthetic agents is measured by their Minimum Alveolar Concentration (MAC) . A lower MAC value indicates higher potency because less anesthetic is required to achieve anesthesia. Methoxyflurane : The most potent inhalational anesthetic with the lowest MAC value. Halothane : More potent than isoflurane but less potent than methoxyflurane. Isoflurane : Has a higher MAC than halothane, indicating lower potency. Nitrous Oxide : Has the highest MAC (over 100%), making it the least potent anesthetic. Minimum Alveolar Concentration (MAC) is a measure used to compare the potency of inhalational anesthetic agents. It is defined as: The alveolar concentration of an anesthetic at 1 atmosphere of pressure that prevents movement in 50% of patients in response to a standard surgical stimulus, such as a skin incision. Key Points about MAC: Inverse Relationship with Potency : Lower MAC = Higher potency (less anesthetic needed to achieve the desired effect). Higher MAC = Lower potency (more anesthetic required). Factors Affecting MAC : Age : MAC decreases with age. Body temperature : Hypothermia reduces MAC. Concurrent medications : Drugs like opioids and benzodiazepines decrease MAC. Physiological state : Pregnancy and certain conditions (e.g., hypoxia, hypotension) lower MAC. Alcohol : Acute alcohol intake reduces MAC, while chronic use increases it. Clinical Use : MAC is used to determine the dosing of inhalational anesthetics. For surgical anesthesia, a concentration higher than MAC (e.g., 1.2–1.5 MAC) is typically used to ensure immobility in nearly all patients. MAC Values for Common Agents (Approximate): Nitrous Oxide : >100% (very low potency) Methoxyflurane : 0.16% (extremely high potency) Halothane : 0.75% Isoflurane : 1.15%

References:

Miller’s Anaesthesia, Edition 9, Pg 551

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Glycopyrrolate is used as a preanesthetic agent for: (Q856455)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

Correct Answer: A. Reducing the secretions

Explanation: Glycopyrrolate is an anticholinergic medication that reduces airway secretions and minimizes bronchospasm by blocking acetylcholine at muscarinic receptors . It is especially important for asthmatic patients at risk of increased secretions and bronchoconstriction. Pre-Op medications: Class of Medication Common Drugs Use Anxiolytics (Option D ruled out) Midazolam , Lorazepam , Diazepam, Ketamine (pediatrics) Preoperative anxiety reduction Midazolam is preferred for adults due to short half-life and potency. Avoid premedication in pediatric patients < 6 months. Antiemetics Ondansetron, Dexamethasone, Metoclopramide , Droperidol, Transdermal Scopolamine Prevention of postoperative nausea and vomiting (PONV) Aspiration Prophylaxis H2-Receptor Blockers (Ranitidine), Proton Pump Inhibitors (PPIs) Reduce risk of pulmonary aspiration Effective in reducing gastric acidity and volume. Recommended for patients with conditions like GERD, obesity, or non-fasted status Antibiotics Infection prevention at surgical sites Anticholinergic Glycopyrrolate To reduction of secretions (Option A) Analgesics Fentanyl (Option D) , NSAIDs (Celecoxib) Pain management, opioid dependency Fentanyl is preferred for rapid clearance and potency. - NSAIDs may be given preoperatively to reduce pain.

References:

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg no. 516, 555

Basic Anesthesia Review Edited by Alaa Abd-Elsayed pg no. 235, 236, 237

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: What is the most frequent reason for hospital admission following daycare surgery? (Q856576)

A. Respiratory distress

B. Post-surgical pain

C. Postoperative nausea and vomiting

D. Bleeding

Correct Answer: C. Postoperative nausea and vomiting

Explanation: The most frequent reason for hospital admission following daycare surgery is: Postoperative nausea and vomiting Daycare surgery: Also known as same-day, outpatient, or ambulatory surgery, involves procedures where patients are admitted and discharged within a 12-hour period. Key aspects: Advantages: Reduced healthcare costs due to elimination of overnight hospital stays. Decreased risk of hospital-acquired infections. Increased patient comfort and satisfaction by recovering at home. Patient Selection Criteria: Generally healthy individuals (ASA I or II). Procedures with minimal anticipated postoperative complications. Availability of a responsible adult at home for post-discharge care. Common Procedures: Carpal tunnel release. Dental extractions. Postoperative Care: Monitoring in a recovery area until anesthesia effects diminish. Provision of discharge instructions, including signs of complications. Scheduled follow-up appointments to ensure proper recovery. In daycare (ambulatory) surgery, the most common postoperative complication: PONV Postoperative Nausea and Vomiting (PONV): Category Details Risk factors Female gender Non-smoker History of PONV/motion sickness Post-op opioid Intra-op modifications Use Propofol (antiemetic) Use Nitrogen (N) instead of Nitrous Oxide (N■O) Use Remifentanil (least incidence of PONV) Drug of Choice Ondansetron (4-8 mg) Anticholinergics (e.g., Scopolamine) Steroids (e.g., Dexamethasone) Post-surgical pain(Option B): This is the second most frequent reason for delayed discharge, often manageable with multimodal analgesia, but can lead to admission if refractory. Bleeding(Option D): Significant postoperative bleeding is a major complication but occurs less frequently than PONV. Respiratory distress(Option A): Serious respiratory events are rare due to careful patient selection and monitoring during ambulatory procedures, though they represent the highest severity risk.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC3216269/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: What is the most likely cause of a young patient experiencing desaturation and bilateral basal crepitations shortly after undergoing surgery with general anesthesia using 02, Nitrous oxide, and Desflurane? (Q857032)

A. ARDS

B. Pleural effusion

C. Negative pressure pulmonary oedema

D. Atelectasis

Correct Answer: C. Negative pressure pulmonary oedema

Explanation: The most likely cause of desaturation and bilateral basal crepitations in a young patient shortly after undergoing surgery with general anesthesia using O2, nitrous oxide, and desflurane is Negative Pressure Pulmonary Edema (NPPE). NPPE can occur when there is significant negative intrathoracic pressure, often due to upper airway obstruction or laryngospasm post-extubation. The presentation of Laryngospasm: Chest movement with limited airflow at the mouth or nose and limited bag movement Silence or stridor Body movements; engorged neck veins Intercostal retraction Tracheal tug Paradoxical breathing Desaturation Bradycardia Cyanosis Absence of ETCO2 on capnography Extubation: Factors associated with increased risk Complications Airway risk factors Known difficult airway Airway deterioration (bleeding, edema, trauma) Restricted airway access Obesity and obstructive sleep apnea Cardiovascular disease Respiratory disease Neuromuscular disease Special surgical requirements Laryngospasm Bronchospasm Negative pressure pulmonary edema Hypoventilation Aspiration Paradoxical vocal cord motion Upper airway obstruction Laryngeal edema Arytenoid dislocation ARDS, pleural effusion, and atelectasis (Options A, B, and D): are also potential causes, but the rapid onset and specific clinical presentation of NPPE due to laryngospasm make NPPE the most likely diagnosis.

References:

https://pdfs.semanticscholar.org/0e45/10a17eb759aee2cd3514c6cfd9717068a468.pdf

https://pmc.ncbi.nlm.nih.gov/articles/PMC3134440/#

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: The following are non depolarizing muscle relaxants except? (Q857063)

A. Pancuronium

B. Rocuronium

C. Suxamethonium

D. Vecuronium

Correct Answer: C. Suxamethonium

Explanation: Suxamethonium (Succinylcholine) is a depolarizing neuromuscular blocker, while Pancuronium, Rocuronium, and Vecuronium are non-depolarizing muscle relaxants. Neuromuscular Blocking Agents (NMBAs) Type Examples Mechanism of Action Duration Reversal Depolarizing NMBAs Suxamethonium (Succinylcholine) Binds to nicotinic receptors at the neuromuscular junction, causing persistent depolarization and temporary paralysis Ultra-short acting (5-10 min) Not reversed by neostigmine ; metabolized by plasma cholinesterase Non-Depolarizing NMBAs Pancuronium, Rocuronium, Vecuronium, Atracurium, Cisatracurium Competitively inhibit ACh binding at nicotinic receptors, preventing depolarization and muscle contraction Short (Rocuronium, Vecuronium), Intermediate, or Long-acting (Pancuronium) Reversed by neostigmine or sugammadex (for steroidal NMBAs) Pancuronium (Option A): Incorrect because it is a non-depolarizing, long-acting muscle relaxant. Rocuronium (Option B): Incorrect because it is a non-depolarizing, intermediate-acting muscle relaxant. Vecuronium (Option D): Incorrect because it is a non-depolarizing,

intermediate-acting muscle relaxant.

References:

Miller's Anaesthesia, 9th Edition, Page 334, 343, 793, 796, 797, 798

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: Which of the following structures are not pierced during epidural anesthesia? (Q857789)

A. Supraspinous ligament

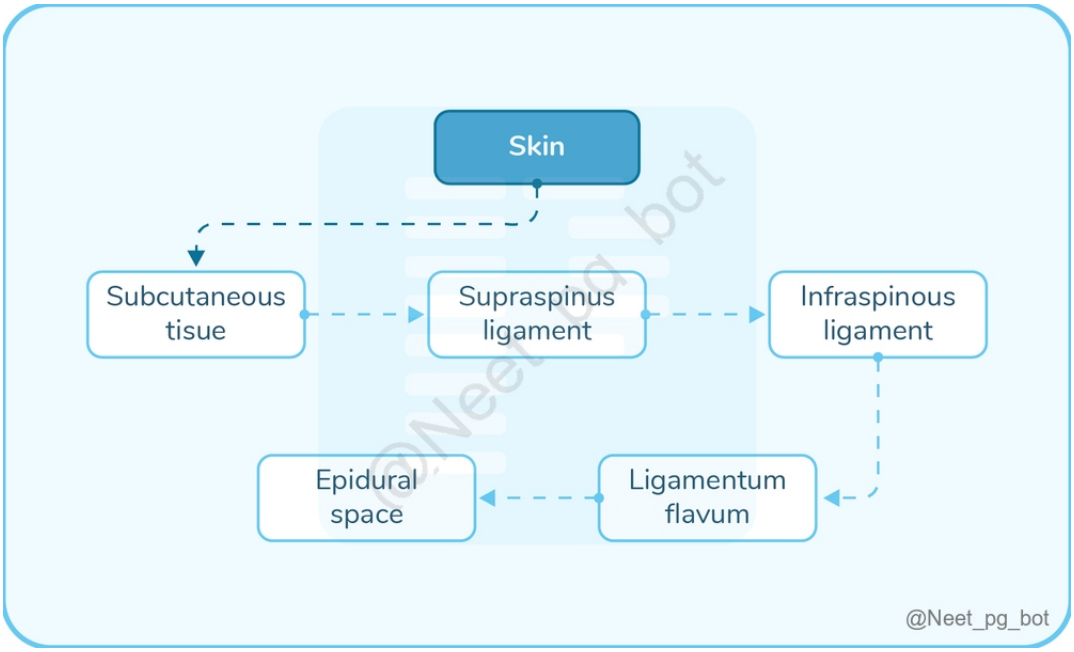
B. Interspinous ligament

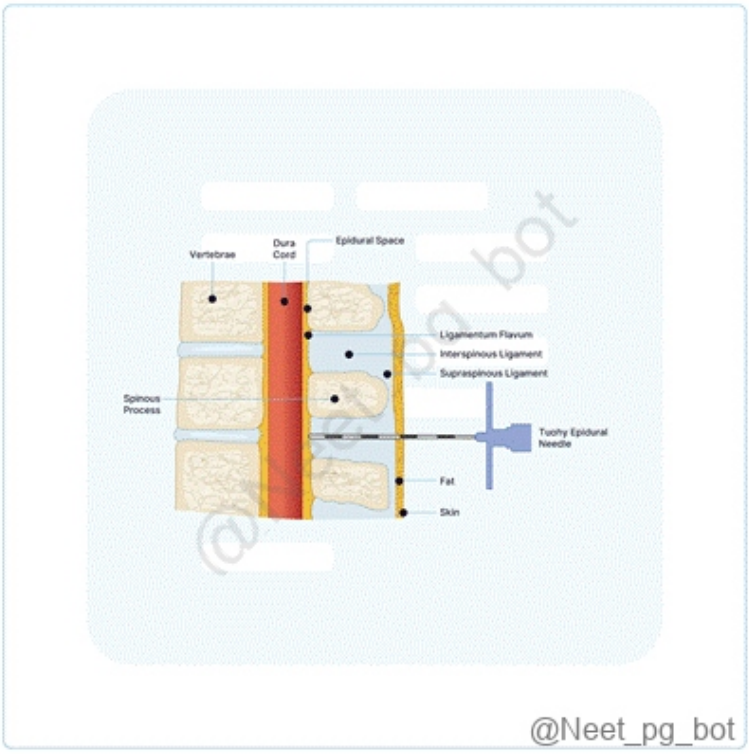
C. Ligamentum flavum

D. Dura

Correct Answer: D. Dura

Explanation: Dura is not pierced during epidural anesthesia. The local anesthetic is injected using a Tuohy needle into the epidural space which lies between dura and ligamentum flavum and the site of action is the nerve roots. Structures pierced to reach epidural space: {{caption_text}} (Options A, B, and C) {{caption_text}}





References:

Miller's Anesthesia, 9th edition, Pages 1435, 1436.

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1836, 1837.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: Inhalational induction of choice in children is: (Q857812)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

Correct Answer: A. Sevoflurane

Explanation: The preferred method for inducing anesthesia through inhalation in children is Sevoflurane. Sevoflurane Properties Sevoflurane is a fluorinated ether with low blood solubility (λb/g 0.65), allowing for rapid

induction and emergence. Its non-pungency makes it suitable for inhalation induction, especially in pediatric patients. It is used with conventional vaporizers. Uses Ideal for smooth and rapid inhalation induction, particularly in daycare procedures (4-8% concentration with nitrous oxide and oxygen). It is commonly used for both pediatric and adult anesthesia. C/I Should be avoided in cases of severe hypovolemia, susceptibility to malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Mild myocardial depression with slight reduction in systemic vascular resistance and blood pressure. It causes minimal heart rate increase and may prolong the QT interval. Hepatic Decreases portal vein flow but increases hepatic artery flow, maintaining overall hepatic perfusion. Renal Slightly decreases renal blood flow but has no known association with significant renal toxicity. Compound A , a degradation product of sevoflurane, is nephrotoxic in animals but has no known adverse effects on humans. Neuromuscular Provides adequate muscle relaxation for intubation but is often combined with other agents or muscle relaxants. Cerebral Slight increases in cerebral blood flow (CBF) and intracranial pressure. High concentrations may impair CBF autoregulation. Seizures have not been reported. Respiratory Depresses respiration and helps reverse bronchospasm. Thus agent of choice in asthmatics.

References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg. 312-315 (PDF)

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Which of the following can be used for induction of anesthesia, maintenance and can be safely used in endotracheal intubation? (Q858069)

A. Halothane

B. Desflurane

C. Sevoflurane

D. Isoflurane

Correct Answer: C. Sevoflurane

Explanation: Sevoflurane is widely used for both induction and maintenance of anesthesia. It is less pungent than other agents, making it suitable for inhalational induction, and it provides smooth intubation conditions. Its rapid onset and offset properties also make it ideal for both induction and maintenance phases. Sevoflurane Properties Sevoflurane is a fluorinated ether with low blood solubility (λb/g 0.65), allowing for rapid induction and emergence. Its non-pungency makes it suitable for inhalation induction, especially in pediatric patients. It is used with conventional vaporizers. Uses Ideal for smooth and rapid inhalation induction, particularly in daycare procedures (4-8% concentration with nitrous oxide and oxygen). It is commonly used for both pediatric and adult anesthesia. C/I Should be avoided in cases of severe hypovolemia, susceptibility to malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Mild myocardial depression with slight reduction in systemic vascular resistance and blood pressure. It causes minimal heart rate increase and may prolong the QT interval. Hepatic Decreases portal vein flow but increases hepatic artery flow, maintaining overall hepatic

perfusion. Renal Slightly decreases renal blood flow but has no known association with significant renal toxicity. Compound A , a degradation product of sevoflurane, is nephrotoxic in animals but has no known adverse effects on humans. Neuromuscular Provides adequate muscle relaxation for intubation but is often combined with other agents or muscle relaxants. Cerebral Slight increases in cerebral blood flow (CBF) and intracranial pressure. High concentrations may impair CBF autoregulation. Seizures have not been reported. Respiratory Depresses respiration and helps reverse bronchospasm. Thus agent of choice in asthmatics. Halothane (Option A): It is primarily used for the maintenance of anesthesia and is not recommended for induction due to its potential for hepatotoxicity and its undesirable side effects. Halothane is also associated with a higher risk of cardiac arrhythmias than other inhalation anesthetics. Desflurane (Option B): is a volatile inhalation anesthetic that is primarily used for the maintenance of anesthesia. It has low blood-gas solubility and a rapid onset and offset, making it suitable for long surgical procedures. However, desflurane has a pungent odor that can cause airway irritation and coughing, making it less suitable for induction and endotracheal intubation. Isoflurane (Option D): is a volatile inhalation anesthetic that is commonly used for the maintenance of anesthesia. It has a good safety profile and provides a smooth anesthetic depth. However, it is not the ideal choice for induction due to its slower onset than sevoflurane

References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg. 312-315 (PDF)

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: During recovery from anesthesia, a patient started experiencing hallucinations and vivid dreams. Which inducing agent is most likely responsible? (Q859315)

A. Ketamine

B. Propofol

C. Thiopentone

D. Etomidate

Correct Answer: A. Ketamine

Explanation: Ketamine is the most likely inducing agent responsible for the patient's hallucinations and vivid dreams. It is known to cause emergence reactions, such as hallucinations, delirium, and vivid dreams, particularly during the recovery phase. These reactions are more common in adult patients and can be distressing, but are typically short-lived. Incorrect Options: Propofol (option B) is known for its smooth induction and recovery profiles. It typically does not cause hallucinations or vivid dreams. In fact, it has anti-emetic properties and is preferred for minimizing post-operative nausea and discomfort. Thiopentone (option C) is a barbiturate that is commonly used for induction. While it has a rapid onset, it does not typically cause hallucinations or vivid dreams. Its longer duration of action may result in a more prolonged recovery, but not in the same manner as ketamine. Etomidate (option D) is generally associated with less frequent emergence reactions compared to ketamine. It is

favoured in patients at risk for hemodynamic instability, but it does not typically cause hallucinations or vivid dreams.

References:

Miller's Anesthesia, 8th Edition, Page 848

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: How do local anesthetics work? (Q859318)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

Correct Answer: A. Block sodium channels

Explanation: Local anesthetics work by blocking sodium channels in the nerve cells. This action inhibits the influx of sodium ions during depolarization, preventing the generation and propagation of action potentials along nerve fibers. Without the ability to generate action potentials, the sensation of pain (or any other nerve signal) is blocked, leading to a localized numbing effect. Incorrect Options: Block potassium channels (option B): Potassium channels play a role in repolarizing the membrane after an action potential. While important in the process of nerve conduction, local anesthetics primarily target sodium channels rather than potassium channels to block nerve transmission. Block calcium channels (option C): Calcium channels are involved in neurotransmitter release at synapses, but they are not the primary target of local anesthetics. While calcium ions are involved in nerve signaling, local anesthetics specifically block sodium channels to prevent the initiation and propagation of action potentials. Block chloride channels (option D): Chloride channels are involved in maintaining the resting membrane potential and controlling cell volume, but they are not directly blocked by local anesthetics. The primary mechanism of local anesthetics is the blockade of sodium channels.

References:

Morgan and Mikhail's Clinical Anaesthesia, 5th Edition, Page 264- 266

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: Which of the following drugs is used for the reversal of anesthesia? (Q860083)

A. Neostigmine

B. Atropine

C. Glycopyrrolate

D. Midazolam

Correct Answer: A. Neostigmine

Explanation: Correct Option: A) Neostigmine Neostigmine is the most commonly used medication for the reversal of neuromuscular blockade. Neostigmine is a cholinesterase inhibitor that increases acetylcholine levels by blocking the enzyme acetylcholinesterase, enhancing nerve transmission. Uses: Myasthenia Gravis : Improves muscle strength by enhancing neuromuscular transmission. Reversal of Neuromuscular Blockade : Reverses muscle paralysis from certain anesthetics after surgery. Postoperative Urinary Retention : Stimulates bladder function. Anticholinergic Toxicity : Helps treat toxicity from anticholinergic drugs. Side Effects: Muscarinic effects : Bradycardia, hypotension, excessive salivation, nausea, diarrhea. Nicotinic effects : Muscle weakness, twitching, respiratory issues (in overdose). Cholinergic Crisis : Overdose can cause severe muscle weakness and respiratory distress. Incorrect Options: Atropine & Glycopyrrolate (Options B and C) are used to manage bradycardia and to reduce secretions and are not used for reversing neuromuscular blockade Midazolam (Option D): Benzodiazepine is not used as a reversal agent.

References:

Miller’s Anaesthesia, 9th Edition, Page 345, 346

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 35-year-old male undergoing abdominal surgery under general anesthesia develops sudden generalized muscle rigidity, rapid increase in body temperature, and tachycardia shortly after administration of sevoflurane and succinylcholine. His end-tidal CO■ is rising despite controlled ventilation. What is the most appropriate immediate treatment? (Q866521)

A. Dantrolene

B. Diazepam

C. Pancuronium

D. Vecuronium

Correct Answer: A. Dantrolene

Explanation: This patient has classic features of malignant hyperthermia - muscle rigidity, hyperthermia, tachycardia, and rising end-tidal CO■ after exposure to triggering agents (volatile anesthetics like sevoflurane and succinylcholine). The immediate and definitive treatment is intravenous dantrolene , a ryanodine receptor antagonist that inhibits calcium release from the sarcoplasmic reticulum in skeletal muscle, thereby reversing hypermetabolism and rigidity. Triggers of Malignant Hyperthermia: Inhaled general anesthetics Ether Halothane Enflurane Isoflurane Desflurane Sevoflurane Depolarizing muscle relaxant Succinylcholine Prior exercise, even just an hour before anaesthesia induction, intensifies the severity and accelerates the onset of rigidity. Initial Indicators of Malignant Hyperthermia (MH) During Anesthesia: Muscle rigidity Masseter spasm Tachycardia Unexplained hypercarbia Increased temperature Other Features: Cyanosis, metabolic acidosis, hypertension, fever, sweating, Hyperkalemia, Hyperphosphatemia, Myoglobinemia, Myoglobinuria, Cardiac Arrest, DIC, etc. Diazepam (Option B): Benzodiazepine for seizures/muscle spasm, but ineffective in malignant hyperthermia. Pancuronium (Option C): Non-depolarizing neuromuscular blocker; does not treat the underlying calcium dysregulation. Vecuronium (Option D): Another non-depolarizing muscle relaxant; similarly ineffective in malignant hyperthermia.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A55 y/o man is undergoing general anaesthesia for abdominal pain and surgery. Shortly after administration of a non-depolarising neuromuscular blocker, he develops bronchospasm, hypotension and flushing of the face. Which of the following skeletal muscle relaxants is most likely responsible for this reaction? (Q866524)

A. Atracurium

B. Cisatracurium

C. Vecuronium

D. Pancuronium

Correct Answer: A. Atracurium

Explanation: The patient’s presentation of flushing and rash over the neck and chest during surgery is due to histamine release from a muscle relaxant. Atracurium is known for causing histamine release, which can lead to flushing, hypotension, and bronchospasm in sensitive individuals. This reaction is dose-related and occurs more commonly with atracurium than with other neuromuscular blockers. Cisatracurium (Option B): Stereoisomer of atracurium, but much less histamine release; preferred in patients at risk. Vecuronium (Option C): Minimal cardiovascular or histamine effects. Pancuronium (Option D): Causes vagolytic effects (↑HR), no significant histamine release.

↑ *Back to this question in Part A*

@Neet_pg_bot

• [06_Anaesthesia for Co-existing Medical Conditons] 010 Anaesthesia For Special Conditions And Fluid Management

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[06_Anaesthesia for Co-existing Medical Conditons] 010 Anaesthesia For Special Conditions And Fluid Management — Quick Jump

Q1 (p. 374) *Q2 (p. 375)* *Q3 (p. 375)* *Q4 (p. 376)* *Q5 (p. 377)* *Q6 (p. 378)*
Q7 (p. 379) *Q8 (p. 381)* *Q9 (p. 381)* *Q10 (p. 382)* *Q11 (p. 383)* *Q12 (p. 384)*
Q13 (p. 385)

Q1: A 65 y/o male with coronary artery disease (CAD) is scheduled for an elective laparoscopic cholecystectomy. The patient is stable on medications with no recent chest pain or dyspnea. The anesthesiologist selects anaesthetic agents for the patient. Which of the following options is false regarding the choice of agents? (Q846862)

A. Propofol is used in CAD patients as the intravenous anaesthetic agent of choice.

B. Isoflurane is used as an inhalational agent for patients with good myocardial contractility.

C. Vecuronium is used as a muscle relaxant for cardiac patients.

D. Etomidate is used as an intravenous anaesthetic agent.

Correct Answer: A. Propofol is used in CAD patients as the intravenous anaesthetic agent of choice.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Propofol significantly lowers blood pressure and heart rate, making it less suitable for patients with coronary artery disease (CAD). It is not the anaesthetic agent of choice in CAD patients. Regional anaesthesia is preferred over general anaesthesia for cardiac patients when the procedure allows for it. Isoflurane: Recommended for patients with good myocardial contractility. (Option B) Vecuronium: Minimal hemodynamic changes; short-acting, suitable for cardiac patients. (Option C) Etomidate (Agent of choice): Causes minimal hemodynamic changes; good for patients with poor cardiac reserve. (Option D)

References:

Anaesthetic Considerations in Cardiac Patients Undergoing Non-Cardiac Surgery

Morgan and Mikhail’s Clinical Anaesthesiology, 7th Edition, Page 723

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which of the following is the IV induction agent of choice in a patient with decompensated Cirrhosis? (Q846863)

A. Thiopentone

B. Propofol

C. Etomidate

D. Ketamine

Correct Answer: B. Propofol

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Propofol is the IV induction agent of choice in patients with hepatic disease because it has a rapid onset and shorter recovery time, making it safer for these patients. Muscle relaxants of choice: Cis-atracurium/Atracurium due to organ-independent Hoffman degradation (do not rely on renal or hepatic clearance) All long-acting narcotics and sedatives should be avoided in Cirrhotic patients. Avoid using halothane: Risk of halothane-induced hepatitis Thiopentone (Option A): Prolonged recovery in liver disease. Etomidate (Option C): Hemodynamically stable but not first choice. Ketamine (Option D): Increases secretions and may worsen encephalopathy.

References:

Morgan and Mikhail's Clinical Anaesthesiology, 7th Edition, Pages 1375, 1388

www.ncbi.nlm.nih.gov/pmc/articles/PMC4080095/

Miller's Anaesthesia, 9th Edition, Page 528

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following anaesthetic agents should be avoided in patients undergoing neurosurgery who are at risk for developing pneumocephalus? (Q846864)

A. Propofol

B. Nitrous Oxide

C. Fentanyl

D. Mannitol

Correct Answer: B. Nitrous Oxide

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Nitrous Oxide is known for its rapid onset and strong anaesthetic properties, but it should be avoided in patients at risk for pneumocephalus. Nitrous oxide can diffuse into closed-air spaces, leading to the expansion of trapped air. In neurosurgical patients, this could worsen pneumocephalus by enlarging intracranial air pockets, leading to increased intracranial pressure and potential complications. Propofol (Option A): It reduces cerebral blood flow and intracranial pressure, making it a good choice for neurosurgical patients. Fentanyl (Option C): Fentanyl is an opioid that is commonly used to manage pain during surgery. Mannitol (Option D): Mannitol is an osmotic diuretic that is frequently administered in neurosurgery to lower intracranial pressure by drawing fluid out of brain tissue.

References:

Miller’s Anaesthesia, 9th Edition, Pages 1872, 1874, 1878, 1893

Morgan and Mikhail’s Clinical Anaesthesiology, 7th Edition, Page 1114

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A pregnant patient with pre-eclampsia is scheduled for a cesarean section. The anaesthesiologist opts for general anaesthesia. Which drug commonly used in general anaesthesia may have a prolonged effect in a patient receiving magnesium sulphate? (Q846865)

A. Bupivacaine

B. Fentanyl

C. Lidocaine

D. Succinylcholine

Correct Answer: D. Succinylcholine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Magnesium sulfate is commonly used in pre-eclampsia to prevent seizures (eclampsia). It has several effects on neuromuscular transmission: Magnesium sulfate inhibits the release of acetylcholine at the neuromuscular junction and decreases the sensitivity of the motor endplate to acetylcholine. This potentiates the action of succinylcholine, a depolarizing neuromuscular blocker, which leads to a prolonged neuromuscular blockade and, thus, a prolonged duration of muscle paralysis. Bupivacaine (Option A): Bupivacaine is a local anaesthetic used in epidural and spinal anaesthesia, and its duration of action is not significantly prolonged by magnesium sulphate. Fentanyl (Option B): Fentanyl, an opioid, does not have a prolonged effect due to magnesium sulphate and is used for pain relief during general and regional anaesthesia. Lidocaine (Option C): Lidocaine is a local anaesthetic used in regional blocks. It is not commonly affected by magnesium sulphate in terms of duration of action.

References:

Miller's Anaesthesia, 9th edition, Pages 2018, 2201

Morgan and Mikhail's Clinical Anaesthesiology, 7th Edition, Pages 1617,1634

Postoperative residual neuromuscular block in a woman with severe preeclampsia treated with magnesium sulfate

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A 60-year-old obese patient with a history of ischemic heart disease is scheduled for surgery. The anesthesiologist decides to use Propofol for intravenous induction and Desflurane for maintenance. What is a crucial consideration for this anaesthetic management? (Q846866)

A. The need to keep the patient in a supine position during induction.

B. The potential for increased intraocular pressure with Desflurane.

C. The likelihood of respiratory depression with Propofol.

D. The requirement for a ramped position during induction.

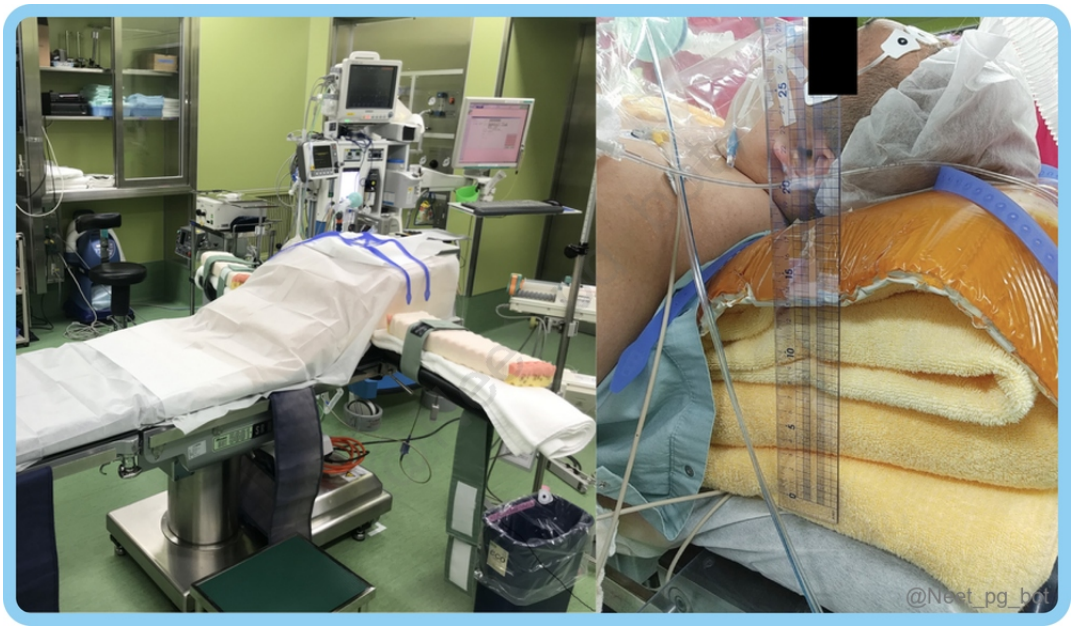
Correct Answer: D. The requirement for a ramped position during induction.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: A ramped position is commonly used in obese patients to help maintain a clear airway and reduce the risk of respiratory complications during induction. {{caption_text}} The need to keep the patient in a supine position during induction (Option A) : While the supine position is common, the ramped position is more appropriate for obese patients to optimize airway management. The potential for increased intraocular pressure with Desflurane (Option B): Desflurane is generally associated with minimal changes in intraocular pressure; thus, this is less of a concern compared to airway management. The likelihood of respiratory depression with Propofol

(Option C): Although respiratory depression can occur with Propofol, the more critical consideration in this scenario is airway management in an obese patient, which can significantly impact safety during induction.



References:

Morgan and Mikhail's Clinical Anaesthesiology, 7th Edition, Page 1436

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A pediatric anesthesiologist is evaluating the best practice for inducing anaesthesia in a 5-year-old child with a history of asthma. Which of the following is the most appropriate choice for inhalational induction? (Q846867)

A. Isoflurane

B. Sevoflurane

C. Nitrous oxide

D. Halothane

Correct Answer: B. Sevoflurane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Induction Agents : Inhalational Agent : Sevoflurane is the preferred inhalational agent for induction in pediatric patients due to its sweet odour and minimal airway irritation. Sevoflurane and halothane are less likely to irritate the airway or cause breath-holding and laryngospasm during induction. Volatile anaesthetics tend to depress ventilation more in infants than older children, with sevoflurane causing the least respiratory depression. IV Induction : Ketamine is commonly used. Isoflurane (Option A): Isoflurane can irritate the airway, making it less suitable for patients with asthma compared to other agents. Nitrous oxide (Option C): Nitrous oxide is not the best choice for induction in this scenario because it is a weak anaesthetic and is typically used as a carrier gas rather than a sole agent for anaesthesia induction. Halothane (Option D) is associated with potential complications, such as hepatic dysfunction, bradycardia and arrhythmias , and is not preferred in pediatric patients, especially those with asthma.

References:

Morgan and Mikhail's Clinical Anaesthesiology, 7th Edition, Pages 1686, 1699, 1700

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: A 70-year-old patient with a history of hypertension is scheduled for cataract surgery under local anaesthesia. Which of the following is true regarding anaesthesia considerations in ocular procedures? (Q846868)

A. The use of ketamine as the induction agent to prevent complications.

B. Atropine is preferred to treat bradycardia due to the oculocardiac reflex.

C. Nitrous oxide is the preferred analgesic agent during vitreoretinal surgeries.

D. Retrobulbar block for anaesthesia is preferred due to its least side effects.

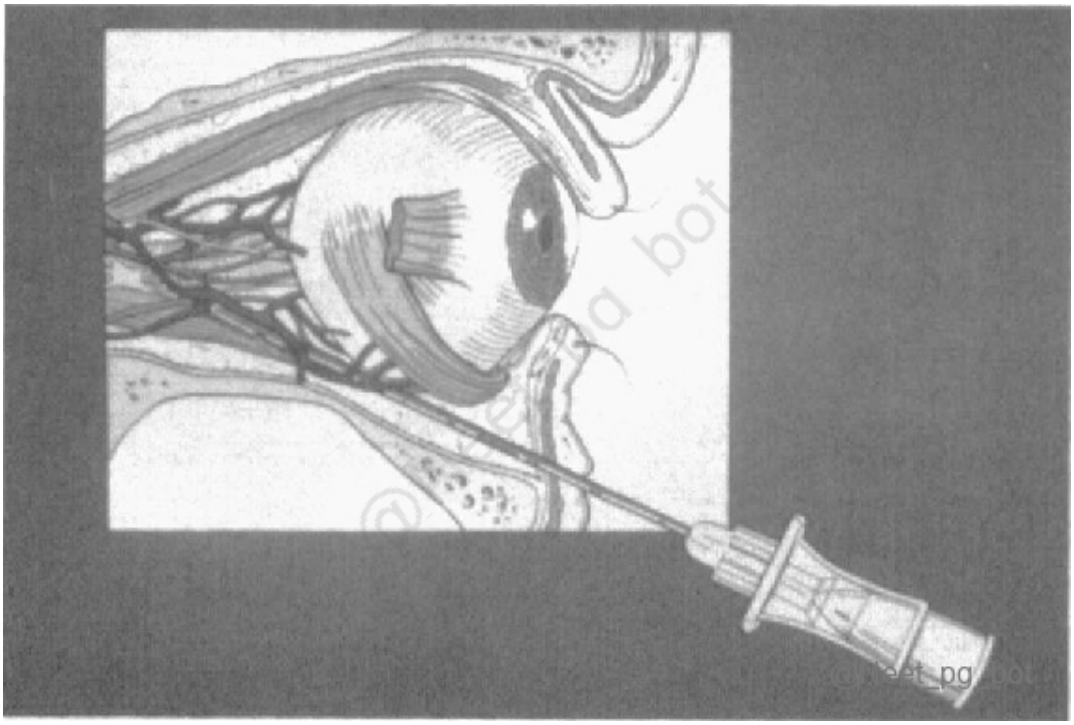
Correct Answer: B. Atropine is preferred to treat bradycardia due to the oculocardiac reflex.

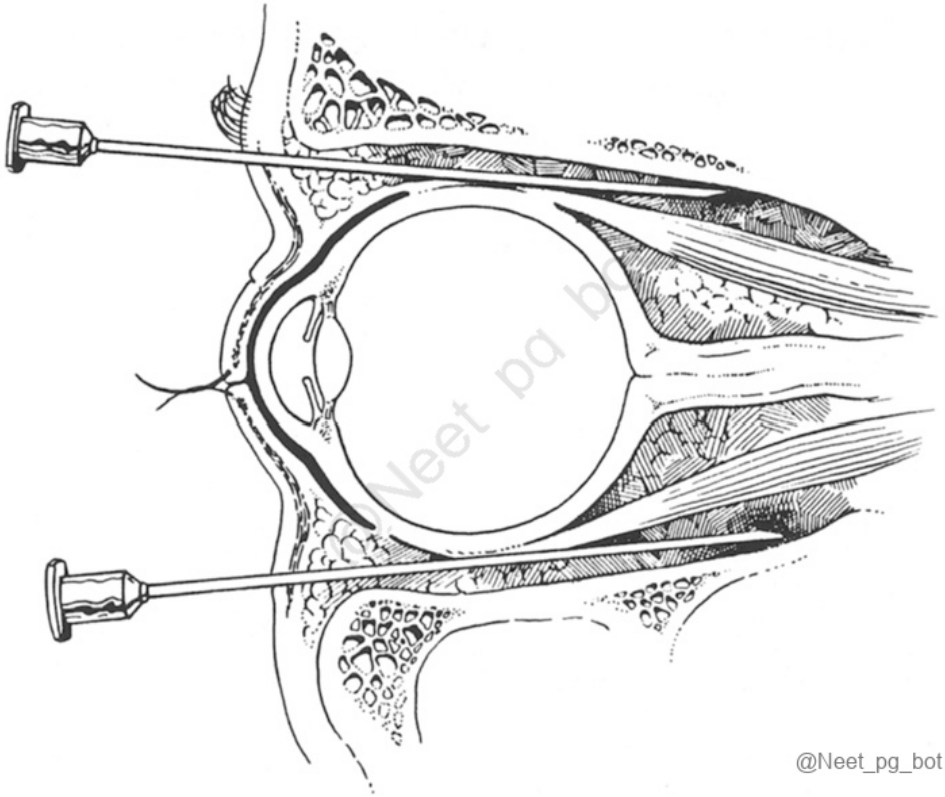
■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Atropine is preferred over glycopyrrolate due to its fast action to treat bradycardia and other symptoms occurring during the event of an oculocardiac reflex. The surgery is halted immediately. Anaesthesia in Ocular Surgeries: 1. Topical : Commonly used for cataract and glaucoma surgeries. Beneficial for patients on anticoagulants as it reduces injection-related bleeding risks. Topical eye drops or gels are available. Eg. Lidocaine 2. Local Anesthesia : (Option D ruled out) Retrobulbar : Generally avoided due to risks of optic nerve damage, global perforation and haemorrhage. Peribulbar : Most commonly used. Safer than retrobulbar block. (Has the least side effects) 3. General Anesthesia : Induction agents (e.g., propofol, thiopental, etomidate) and volatile anaesthetics decrease IOP significantly. Avoid Ketamine : Increases intraocular pressure (IOP) and may cause nystagmus. (Option A) Avoid Nitrous Oxide (N2O) : This should be avoided in surgeries involving gas bubble placement (Viteroretinal surgery) as it can Increase the size of the bubble, leading to increased ICP. (Option C) 4.

Neuromuscular Blockade: Preferably non-depolarizing agents are used e.g. Atracurium, Cisatracurium Sugammadex for reversal of non-depolarizing blockers to avoid IOP increases associated with anticholinergics. Oculocardiac reflex: Bradycardia may occur due to a stretch of the rectus muscle during surgery Treatment: Atropine (due to its fast onset of action) is immediately given, and surgery is halted. (Option B)





References:

Miller’s Anaesthesia, 9th Edition, Page 2196, 2199

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 35 y/o asthmatic patient is scheduled for a minor surgical procedure. Which induction agent and muscle relaxant combination is safest for this patient? (Q846888)

A. Propofol and Succinylcholine

B. Ketamine and d-tubocurarine

C. Ketamine and Vecuronium

D. Thiopental and Rocuronium

Correct Answer: C. Ketamine and Vecuronium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ketamine is beneficial in asthmatics as it provides analgesia and induces bronchodilation without significant hemodynamic instability . Vecuronium is a non-depolarizing muscle relaxant that does not release histamine, making it safe for use in asthmatic patients. Propofol and Succinylcholine (Option A) : Succinylcholine may provoke bronchospasm. Ketamine and d-tubocurarine (Option B) : d-tubocurarine releases histamine, which can trigger bronchospasm. Thiopental and Rocuronium (Option D) : Thiopental has slower recovery times and can cause respiratory depression.

References:

Miller’s Anaesthesia, 9th edition, Page 812

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: A 50-year-old patient is scheduled for a short elective procedure in a daycare setting. The anesthesiologist needs to ensure rapid induction, short-term muscle relaxation, and quick recovery to facilitate early discharge. Which muscle relaxant would be the most suitable for this scenario? (Q846889)

A. Vecuronium

B. Succinylcholine

C. Mivacurium

D. Pancuronium

Correct Answer: C. Mivacurium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Mivacurium is a short-acting, rapidly metabolized muscle relaxant, ideal for daycare surgeries where fast recovery is desired. Duration of Action Muscle Relaxant Long-Acting Pancuronium Intermediate-Acting Rocuronium, Vecuronium, Atracurium, Cisatracurium Short-Acting Mivacurium Ultrashort-Acting Gantacurium Anaesthesia in Day Care Surgery: IV Induction Agent : Propofol : Rapid onset and recovery; commonly used for induction and maintenance. Muscle Relaxant : Mivacurium : Short-acting; suitable for short procedures. Inhalational Agent : Desflurane : Best for rapid recovery but less commonly used due to cost and airway irritability. Sevoflurane : Most commonly used; provides smooth induction with minimal airway irritation. Vecuronium (Option A) is an intermediate-acting muscle relaxant, not ideal for short procedures where quick recovery is needed Succinylcholine (Option B) : While Succinylcholine provides short-term paralysis, it has significant side effects (e.g., hyperkalemia, malignant hyperthermia) that make it less favourable for routine daycare surgeries. Pancuronium (Option D) is long-acting and is not suitable for short, daycare procedures due to delayed recovery time.

References:

Miller’s Anaesthesia, 9th edition, Pages 806, 812

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: A 70 kg patient is scheduled for elective open-heart surgery that is expected to last over 4 hours. According to fluid replacement guidelines, which of the following is the most appropriate additional fluid replacement rate to compensate for the third space volume loss for this patient? (Q846890)

A. 140 mL/hr

B. 280 mL/hr

C. 560 mL/hr

D. 1000 mL/hr

Correct Answer: C. 560 mL/hr

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: For major surgery, such as open-heart surgery, the fluid replacement guideline recommends a rate of 6-8 mL/kg/hr . For a 70 kg patient: Minimum rate: 70 kg × 8 mL/kg/hr = 560 mL/hr Fluid Replacement Based on Type of Surgery Minor Surgery : Eg. Herniorrhaphy Fluid replacement: 2-4 ml/kg/hr Duration: 45 minutes to 1 hour Moderate Surgery : Eg. Cholecystectomy Fluid replacement: 4-6 ml/kg/hr Duration: Up to 2 hours Major Surgery : Eg. Bowel resection Eg. Fluid replacement: 6-8 ml/kg/hr Duration: Usually more than 4 hours

References:

Morgan and Mikhail's Clinical Anaesthesia, 7th Edition, Page 2262

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: A 45 y/o male undergoes abdominal surgery and requires fluid replacement. The patient has a history of chronic kidney disease. Which of the following fluids is most appropriate for maintenance during surgery to avoid the risk of hyperchloremic metabolic acidosis? (Q846891)

A. 0.9% Normal Saline

B. Ringer's Lactate

C. 3% NaCl

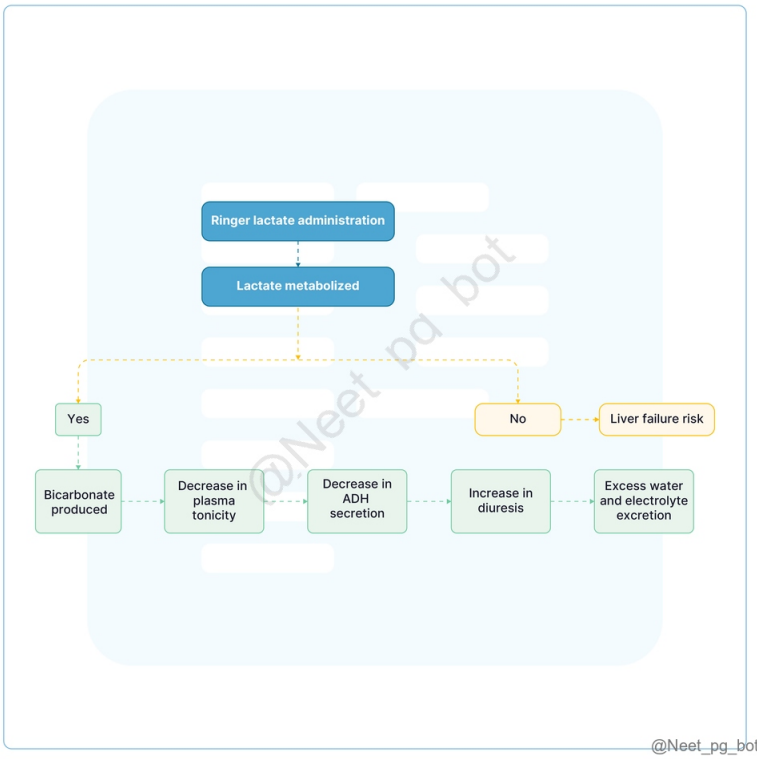
D. 5% Dextrose in Water

Correct Answer: B. Ringer's Lactate

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ringer's Lactate is often preferred because it contains a buffer (lactate) that helps to mitigate the risk of acidosis. It is isotonic and provides electrolytes in a more balanced way, making it a suitable option for patients with CKD. 0.9% Normal Saline (Option A) : It may lead to hyperchloremic metabolic acidosis due to its high chloride content. 3% NS (Option C): Careful electrolyte and osmolality monitoring is required to avoid complications like osmotic demyelination. There is also a potential to cause fluid overload and hypernatremia, not recommended as a maintenance fluid. 5% Dextrose in Water (Option D) : It is usually used perioperatively and must be avoided in the postoperative period as it can severely dilute plasma electrolytes and osmolality.



References:

Miller's Anaesthesia, 9th Edition, Pages 1492, 1495, 1503, 1513, 1514, 1518

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: A 6 y/o child weighs 20 kg and requires maintenance fluid based on the Holliday-Segar formula. What is the correct amount of fluid the child should receive in 24 hours? (Q846892)

A. 1500 mL

B. 1600 mL

C. 1800 mL

D. 2000 mL

Correct Answer: A. 1500 mL

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Using the Holliday-Segar "4-2-1" rule : To calculate maintenance fluid per hour: First 10 kgs × 4= a Next 10 kgs × 2= b Next 10 kgs × 1= c Total = a + b + c Hence, for this patient: For the first 10 kg of weight: 4 mL/kg/hour → 4 mL × 10 kg = 40 mL/hour For the next 10 kg (10-20 kg): 2 mL/kg/hour → 2 mL × 10 kg = 20 mL/hour Total per hour: 40 mL + 20 mL = 60 mL/hour In 24 hours: 60 mL/hour × 24 hours = 1440 mL (rounded to 1500 mL)

References:

Miller's Anaesthesia, 9th edition, Pages 1517, 1518

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: A 50 kg patient has been fasting for 6 hours before surgery. If the maintenance fluid rate is 1.2 mL/kg/h, what is the total maintenance fluid requirement? (Q846893)

A. 360 mL

B. 420 mL

C. 500 mL

D. 720 mL

Correct Answer: A. 360 mL

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Maintenance Rate: 1.2 mL/kg/h Hours of Fasting: 6 hours Body Weight: 50 kg Total Maintenance Fluid = Maintenance rate (mL/kg/h) × Hours of fasting (h) × Body weight (kg) Total Maintenance Fluid = 1.2 × 6 × 50 = 360 mL Maintenance Fluid Requirements: Purpose : Covers insensible losses and urine output during fasting before surgery. Rate : Typically 1 to 1.5 mL/kg/h, adjusted for surgery type and anticipated fluid shifts.

References:

Miller's Anaesthesia, 9th edition, Pages 1517, 1518

↑ *Back to this question in Part A*

@Neet_pg_bot

• [06_Anaesthesia for Co-existing Medical Conditons] 011 Previous Year Questions

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[06_Anaesthesia for Co-existing Medical Conditons] 011 Previous Year Questions — Quick Jump

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Q19 (p. 400)	*Q20 (p. 401)*	*Q21 (p. 402)*			

Q1: Which of the following drugs is used for the reversal of anesthesia? (Q860083)

A. Neostigmine

B. Atropine

C. Glycopyrrolate

D. Midazolam

Correct Answer: A. Neostigmine

Explanation: Correct Option: A) Neostigmine Neostigmine is the most commonly used medication for the reversal of neuromuscular blockade. Neostigmine is a cholinesterase inhibitor that increases acetylcholine levels by blocking the enzyme acetylcholinesterase, enhancing nerve transmission. Uses: Myasthenia Gravis : Improves muscle strength by enhancing neuromuscular transmission. Reversal of Neuromuscular Blockade : Reverses muscle paralysis from certain anesthetics after surgery. Postoperative Urinary Retention : Stimulates bladder function. Anticholinergic Toxicity : Helps treat toxicity from anticholinergic drugs. Side Effects: Muscarinic effects : Bradycardia, hypotension, excessive salivation, nausea, diarrhea. Nicotinic effects : Muscle weakness, twitching, respiratory issues (in overdose). Cholinergic Crisis : Overdose can cause severe muscle weakness and respiratory distress. Incorrect Options: Atropine & Glycopyrrolate (Options B and C) are used to manage bradycardia and to reduce secretions and are not used for reversing neuromuscular blockade Midazolam (Option D): Benzodiazepine is not used as a reversal agent.

References:

Miller’s Anaesthesia, 9th Edition, Page 345, 346

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: How do local anesthetics work? (Q859318)

A. Block sodium channels

B. Block potassium channels

C. Block calcium channels

D. Block chloride channels

Correct Answer: A. Block sodium channels

Explanation: Local anesthetics work by blocking sodium channels in the nerve cells. This action inhibits the influx of sodium ions during depolarization, preventing the generation and propagation of action potentials along nerve fibers. Without the ability to generate action potentials, the sensation of pain (or any other nerve signal) is blocked, leading to a localized numbing effect. Incorrect Options: Block potassium channels (option B): Potassium channels play a role in repolarizing the membrane after an action potential. While important in the process of nerve conduction, local anesthetics primarily target sodium channels rather than potassium channels to block nerve transmission. Block calcium channels (option C): Calcium channels are involved in neurotransmitter release at synapses, but they are not the primary target of local anesthetics. While calcium ions are involved in nerve signaling, local anesthetics specifically block sodium channels to prevent the initiation and propagation of action potentials. Block chloride channels (option D): Chloride channels are involved in maintaining the resting membrane potential and controlling cell volume, but they are not directly blocked by local anesthetics. The primary mechanism of local anesthetics is the blockade of sodium channels.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 264- 266

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: During recovery from anesthesia, a patient started experiencing hallucinations and vivid dreams. Which inducing agent is most likely responsible? (Q859315)

A. Ketamine

B. Propofol

C. Thiopentone

D. Etomidate

Correct Answer: A. Ketamine

Explanation: Ketamine is the most likely inducing agent responsible for the patient's hallucinations and vivid dreams. It is known to cause emergence reactions, such as hallucinations, delirium, and vivid dreams, particularly during the recovery phase. These reactions are more common in adult patients and can be distressing, but are typically short-lived. Incorrect Options: Propofol (option B) is known for its smooth induction and recovery profiles. It typically does not cause hallucinations or vivid dreams. In fact, it has anti-emetic properties and is preferred for minimizing post-operative nausea and discomfort. Thiopentone (option C) is a barbiturate that is commonly used for induction. While it has a rapid onset, it does not typically cause hallucinations or vivid dreams. Its longer duration of action may result in a more prolonged recovery, but not in the same manner as ketamine. Etomidate (option D) is generally associated with less frequent emergence reactions compared to ketamine. It is favoured in patients at risk for hemodynamic instability, but it does not typically cause hallucinations or vivid dreams.

References:

Miller’s Anesthesia, 8th Edition, Page 848

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Glycopyrrolate is used as a preanesthetic agent for: (Q856455)

A. Reducing the secretions

B. Sedative effect

C. Skeletal muscle relaxant

D. Anxiolytic

Correct Answer: A. Reducing the secretions

Explanation: Glycopyrrolate is an anticholinergic medication that reduces airway secretions and minimizes bronchospasm by blocking acetylcholine at muscarinic receptors . It is especially important for asthmatic patients at risk of increased secretions and bronchoconstriction. Pre-Op medications: Class of Medication Common Drugs Use Anxiolytics (Option D ruled out) Midazolam , Lorazepam , Diazepam, Ketamine (pediatrics) Preoperative anxiety reduction Midazolam is preferred for adults due to short half-life and potency. Avoid premedication in pediatric patients < 6 months. Antiemetics Ondansetron, Dexamethasone, Metoclopramide , Droperidol, Transdermal Scopolamine Prevention of postoperative nausea and vomiting (PONV) Aspiration Prophylaxis H2-Receptor Blockers (Ranitidine), Proton Pump Inhibitors (PPIs) Reduce risk of pulmonary aspiration Effective in reducing gastric acidity and volume. Recommended for patients with conditions like GERD, obesity, or non-fasted status Antibiotics Infection prevention at surgical sites Anticholinergic Glycopyrrolate To reduction of secretions (Option A) Analgesics Fentanyl (Option D) , NSAIDs (Celecoxib) Pain management, opioid dependency Fentanyl is preferred for rapid clearance and potency. - NSAIDs may be given preoperatively to reduce pain.

References:

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg no. 516, 555

Basic Anesthesia Review Edited by Alaa Abd-Elsayed pg no. 235, 236, 237

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: What is the most frequent reason for hospital admission following daycare surgery? (Q856576)

A. Respiratory distress

B. Post-surgical pain

C. Postoperative nausea and vomiting

D. Bleeding

Correct Answer: C. Postoperative nausea and vomiting

Explanation: The most frequent reason for hospital admission following daycare surgery is: Postoperative nausea and vomiting Daycare surgery: Also known as same-day, outpatient, or ambulatory surgery, involves procedures where patients are admitted and discharged within a 12-hour period. Key aspects: Advantages: Reduced healthcare costs due to elimination of overnight hospital stays. Decreased risk of hospital-acquired infections. Increased patient comfort and satisfaction by recovering at home. Patient Selection Criteria: Generally healthy individuals (ASA I or II). Procedures with minimal anticipated postoperative complications. Availability of a responsible adult at home for post-discharge care. Common Procedures: Carpal tunnel release. Dental extractions. Postoperative Care: Monitoring in a recovery area until anesthesia effects diminish. Provision of discharge instructions, including signs of complications. Scheduled follow-up appointments to ensure proper recovery. In daycare (ambulatory) surgery, the most common postoperative complication: PONV Postoperative Nausea and Vomiting (PONV): Category Details Risk factors Female gender Non-smoker History of PONV/motion sickness Post-op opioid Intra-op modifications Use Propofol (antiemetic) Use Nitrogen (N) instead of Nitrous Oxide (N■O) Use Remifentanil (least incidence of PONV) Drug of Choice Ondansetron (4-8 mg) Anticholinergics (e.g., Scopolamine) Steroids (e.g., Dexamethasone) Post-surgical pain(Option B): This is the second most frequent reason for delayed discharge, often manageable with multimodal analgesia, but can lead to admission if refractory. Bleeding(Option D): Significant postoperative bleeding is a major complication but occurs less frequently than PONV. Respiratory distress(Option A): Serious respiratory events are rare due to careful patient selection and monitoring during ambulatory procedures, though they represent the highest severity risk.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC3216269/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: Which of the following can be used for induction of anesthesia, maintenance and can be safely used in endotracheal intubation? (Q858069)

A. Halothane

B. Desflurane

C. Sevoflurane

D. Isoflurane

Correct Answer: C. Sevoflurane

Explanation: Sevoflurane is widely used for both induction and maintenance of anesthesia. It is less pungent than other agents, making it suitable for inhalational induction, and it provides smooth intubation conditions. Its rapid onset and offset properties also make it ideal for both induction and maintenance phases. Sevoflurane Properties Sevoflurane is a fluorinated ether with low blood solubility (λb/g 0.65), allowing for rapid induction and emergence. Its non-pungency makes it suitable for inhalation induction, especially in pediatric patients. It is used with conventional vaporizers. Uses Ideal for smooth and rapid inhalation induction, particularly in daycare procedures (4-8% concentration with nitrous oxide and oxygen). It is commonly used for both pediatric and adult anesthesia. C/I Should be avoided in cases of severe hypovolemia, susceptibility to malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Mild myocardial depression with slight reduction in systemic vascular resistance and blood pressure. It causes minimal heart rate increase and may prolong the QT interval. Hepatic Decreases portal vein flow but increases hepatic artery flow, maintaining overall hepatic perfusion. Renal Slightly decreases renal blood flow but has no known association with significant renal toxicity. Compound A , a degradation product of sevoflurane, is nephrotoxic in animals but has no known adverse effects on humans. Neuromuscular Provides adequate muscle relaxation for intubation but is often combined with other agents or muscle relaxants. Cerebral Slight increases in cerebral blood flow (CBF) and intracranial pressure. High concentrations may impair CBF autoregulation. Seizures have not been reported. Respiratory Depresses respiration and helps reverse bronchospasm. Thus agent of choice in asthmatics. Halothane (Option A): It is primarily used for the maintenance of anesthesia and is not recommended for induction due to its potential for hepatotoxicity and its undesirable side effects. Halothane is also associated with a higher risk of cardiac arrhythmias than other inhalation anesthetics. Desflurane (Option B): is a volatile inhalation anesthetic that is primarily used for the maintenance of anesthesia. It has low blood-gas solubility and a rapid onset and offset, making it suitable for long surgical procedures. However, desflurane has a pungent odor that can cause airway irritation and coughing, making it less suitable for induction and endotracheal intubation. Isoflurane (Option D): is a volatile inhalation anesthetic that is commonly used for the maintenance of anesthesia. It has a good safety profile and provides a smooth anesthetic depth. However, it is not the ideal choice for induction due to its slower onset than sevoflurane

References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg. 312-315 (PDF)

↑ *Back to this question in Part A*

Q7: Which of the following structures are not pierced during epidural anesthesia? (Q857789)

A. Supraspinous ligament

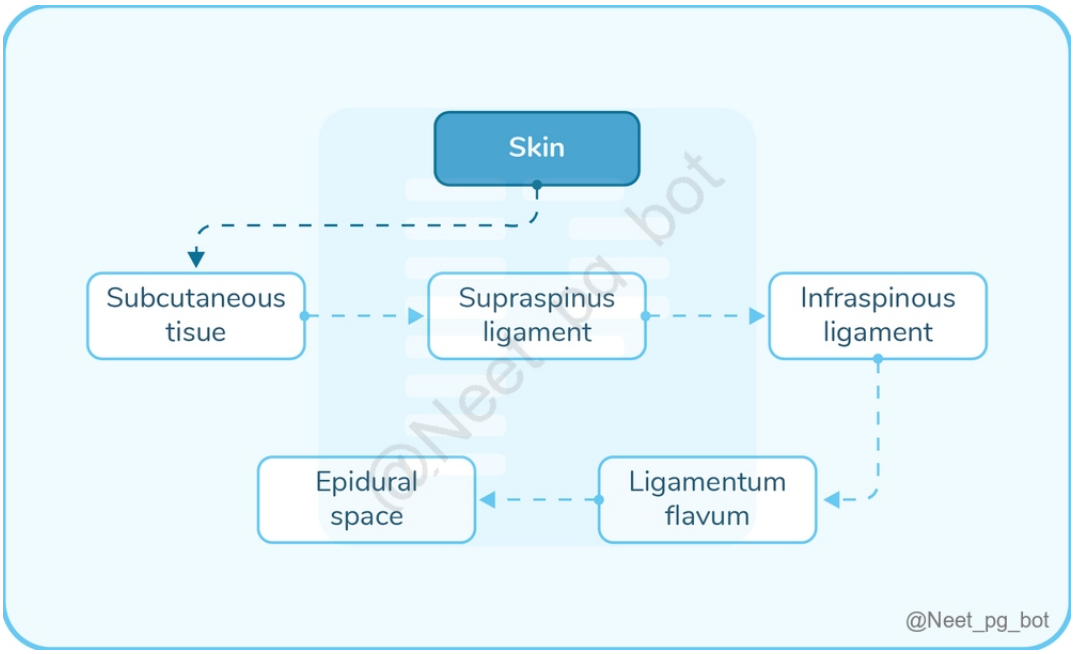
B. Interspinous ligament

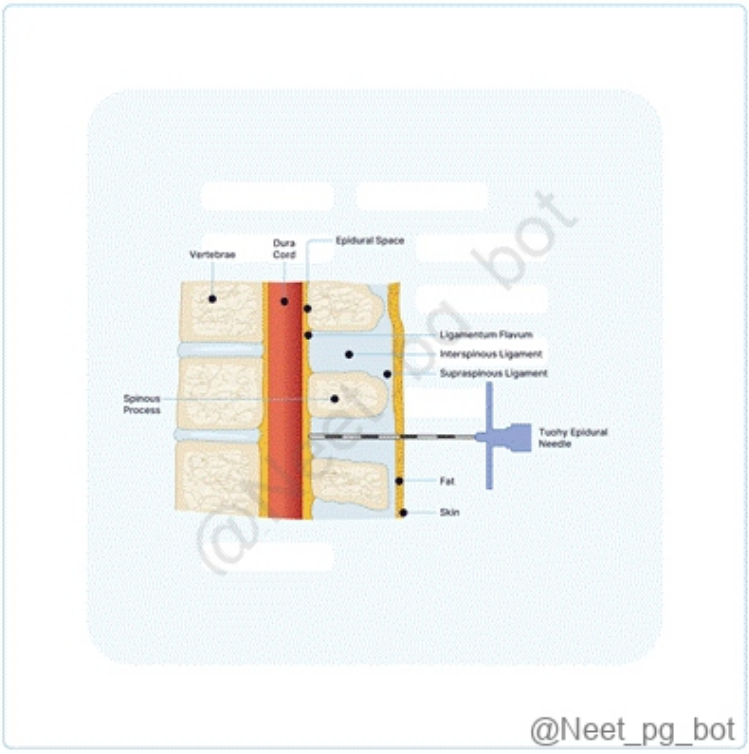
C. Ligamentum flavum

D. Dura

Correct Answer: D. Dura

Explanation: Dura is not pierced during epidural anesthesia. The local anesthetic is injected using a Tuohy needle into the epidural space which lies between dura and ligamentum flavum and the site of action is the nerve roots. Structures pierced to reach epidural space: {{caption_text}} (Options A, B, and C) {{caption_text}}





References:

Miller's Anesthesia, 9th edition, Pages 1435, 1436.

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 1836, 1837.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: The following are non depolarizing muscle relaxants except? (Q857063)

A. Pancuronium

B. Rocuronium

C. Suxamethonium

D. Vecuronium

Correct Answer: C. Suxamethonium

Explanation: Suxamethonium (Succinylcholine) is a depolarizing neuromuscular blocker, while Pancuronium, Rocuronium, and Vecuronium are non-depolarizing muscle relaxants. Neuromuscular Blocking Agents (NMBAs)

Type Examples Mechanism of Action Duration Reversal Depolarizing NMBAs Suxamethonium (Succinylcholine) Binds to nicotinic receptors at the neuromuscular junction, causing persistent depolarization and temporary paralysis Ultra-short acting (5-10 min) Not reversed by neostigmine ; metabolized by plasma cholinesterase Non-Depolarizing NMBAs Pancuronium, Rocuronium, Vecuronium, Atracurium, Cisatracurium Competitively inhibit ACh binding at nicotinic receptors, preventing depolarization and muscle contraction Short (Rocuronium, Vecuronium), Intermediate, or Long-acting (Pancuronium) Reversed by neostigmine or sugammadex (for steroidal NMBAs) Pancuronium (Option A): Incorrect because it is a non-depolarizing, long-acting muscle relaxant. Rocuronium (Option B): Incorrect because it is a non-depolarizing, intermediate-acting muscle relaxant. Vecuronium (Option D): Incorrect because it is a non-depolarizing, intermediate-acting muscle relaxant.

References:

Miller's Anaesthesia, 9th Edition, Page 334, 343, 793, 796, 797, 798

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: What is the most likely cause of a young patient experiencing desaturation and bilateral basal crepitations shortly after undergoing surgery with general anesthesia using 02, Nitrous oxide, and Desflurane? (Q857032)

A. ARDS

B. Pleural effusion

C. Negative pressure pulmonary oedema

D. Atelectasis

Correct Answer: C. Negative pressure pulmonary oedema

Explanation: The most likely cause of desaturation and bilateral basal crepitations in a young patient shortly after undergoing surgery with general anesthesia using O2, nitrous oxide, and desflurane is Negative Pressure Pulmonary Edema (NPPE). NPPE can occur when there is significant negative intrathoracic pressure, often due to upper airway obstruction or laryngospasm post-extubation. The presentation of Laryngospasm: Chest movement with limited airflow at the mouth or nose and limited bag movement Silence or stridor Body movements; engorged neck veins Intercostal retraction Tracheal tug Paradoxical breathing Desaturation Bradycardia Cyanosis Absence of ETCO2 on capnography Extubation: Factors associated with increased risk Complications Airway risk factors Known difficult airway Airway deterioration (bleeding, edema, trauma) Restricted airway access Obesity and obstructive sleep apnea Cardiovascular disease Respiratory disease Neuromuscular disease Special surgical requirements Laryngospasm Bronchospasm Negative pressure pulmonary edema Hypoventilation Aspiration Paradoxical vocal cord motion Upper airway obstruction Laryngeal edema Arytenoid dislocation ARDS, pleural effusion, and atelectasis (Options A, B, and D): are also potential causes, but the rapid onset and specific clinical presentation of NPPE due to laryngospasm make NPPE the most likely diagnosis.

References:

https://pdfs.semanticscholar.org/0e45/10a17eb759aee2cd3514c6cfd9717068a468.pdf

https://pmc.ncbi.nlm.nih.gov/articles/PMC3134440/#

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Arrange the following agents on the basis of their potency. Nitrous Oxide Halothane Isoflurane Methoxyflurane (Q854960)

A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

B. Methoxyflurane > Isoflurane > Halothane > Nitrous Oxide

C. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

D. Methoxyflurane > Nitrous Oxide > Halothane > Isoflurane

Correct Answer: A. Methoxyflurane > Halothane > Isoflurane > Nitrous Oxide

Explanation: The potency of inhalational anesthetic agents is measured by their Minimum Alveolar Concentration (MAC) . A lower MAC value indicates higher potency because less anesthetic is required to achieve anesthesia. Methoxyflurane : The most potent inhalational anesthetic with the lowest MAC value. Halothane : More potent than isoflurane but less potent than methoxyflurane. Isoflurane : Has a higher MAC than halothane, indicating lower potency. Nitrous Oxide : Has the highest MAC (over 100%), making it the least potent anesthetic. Minimum Alveolar Concentration (MAC) is a measure used to compare the potency of inhalational anesthetic agents. It is defined as: The alveolar concentration of an anesthetic at 1 atmosphere of pressure that prevents movement in 50% of patients in response to a standard surgical stimulus, such as a skin incision. Key Points about MAC: Inverse Relationship with Potency : Lower MAC = Higher potency (less anesthetic needed to achieve the desired effect). Higher MAC = Lower potency (more anesthetic required). Factors Affecting MAC : Age : MAC decreases with age. Body temperature : Hypothermia reduces MAC. Concurrent medications : Drugs like opioids and benzodiazepines decrease MAC. Physiological state : Pregnancy and certain conditions (e.g., hypoxia, hypotension) lower MAC. Alcohol : Acute alcohol intake reduces MAC, while chronic use increases it. Clinical Use : MAC is used to determine the dosing of inhalational anesthetics. For surgical anesthesia, a concentration higher than MAC (e.g., 1.2–1.5 MAC) is typically used to ensure immobility in nearly all patients. MAC Values for Common Agents (Approximate): Nitrous Oxide : >100% (very low potency) Methoxyflurane : 0.16% (extremely high potency) Halothane : 0.75% Isoflurane : 1.15%

References:

Miller’s Anaesthesia, Edition 9, Pg 551

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: Inhalational induction of choice in children is: (Q857812)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

Correct Answer: A. Sevoflurane

Explanation: The preferred method for inducing anesthesia through inhalation in children is Sevoflurane. Sevoflurane Properties Sevoflurane is a fluorinated ether with low blood solubility (λb/g 0.65), allowing for rapid induction and emergence. Its non-pungency makes it suitable for inhalation induction, especially in pediatric patients. It is used with conventional vaporizers. Uses Ideal for smooth and rapid inhalation induction, particularly in daycare procedures (4-8% concentration with nitrous oxide and oxygen). It is commonly used for both pediatric and adult anesthesia. C/I Should be avoided in cases of severe hypovolemia, susceptibility to malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Mild myocardial depression with slight reduction in systemic vascular resistance and blood pressure. It causes minimal heart rate increase and may prolong the QT interval. Hepatic Decreases portal vein flow but increases hepatic artery flow, maintaining overall hepatic perfusion. Renal Slightly decreases renal blood flow but has no known association with significant renal toxicity. Compound A , a degradation product of sevoflurane, is nephrotoxic in animals but has no known adverse effects on humans. Neuromuscular Provides adequate muscle relaxation for intubation but is often combined with other agents or muscle relaxants. Cerebral Slight increases in cerebral blood flow (CBF) and intracranial pressure. High concentrations may impair CBF autoregulation. Seizures have not been reported. Respiratory Depresses respiration and helps reverse bronchospasm. Thus agent of choice in asthmatics.

References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg. 312-315 (PDF)

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: Which of the following drugs causes adrenal suppression? (Q852833)

A. Thiopental

B. Ketamine

C. Etomidate

D. Propofol

Correct Answer: C. Etomidate

Explanation: Etomidate inhibits 11β-hydroxylase , an enzyme essential for cortisol synthesis in the adrenal glands. Single-dose administration can cause transient adrenal suppression , and prolonged use can lead to critical illness-related corticosteroid insufficiency (CIRCI) . It is often avoided in septic and critically ill patients due to the risk of adrenal insufficiency. Despite minimal cardiovascular depression, its use is limited in critically ill patients due to its endocrine effects. Etomidate and Adrenal Suppression Feature Details Drug Class Intravenous anesthetic Mechanism of Adrenal Suppression Inhibition of 11β-hydroxylase Effect Duration Lasts 6-24 hours after a single dose Clinical Impact Reduces cortisol production, leading to adrenal insufficiency Contraindications Sepsis, adrenal insufficiency, critically ill patients Advantages Minimal cardiovascular depression, rapid onset Thiopental (Option A): Incorrect because it does not inhibit cortisol synthesis and has no significant adrenal suppression effects. Ketamine (Option B): Incorrect because ketamine does not affect adrenal function; it increases sympathetic tone and is often used in shock. Propofol (Option D): Incorrect because it does not cause adrenal suppression, though it can cause hypotension due to vasodilation.

References:

Miller’s Anesthesia, 9th edition, Pages 648, 649, 667-669

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 165-179

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: A 25-year-old patient undergoing orthopedic surgery who underwent general anesthesia suddenly developed a rise in EtCO2, temperature, and also muscle rigidity. Which of the following drugs leads to such complications? (Q844125)

A. Propofol

B. Nitrous oxide

C. Etomidate

D. Halothane

Correct Answer: D. Halothane

Explanation: Correct Option D – Halothane: The scenario describes malignant hyperthermia, a life-threatening reaction to certain anesthetic agents, including halothane. It is characterized by increased EtCO2, hyperthermia, and muscle rigidity. Incorrect Options: Options A, B, and C are not associated with malignant hyperthermia.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: Which drug is used to reverse the muscle relaxant effects of vecuronium when renal function is normal? (Q844119)

A. Sugammadex

B. Neostigmine

C. Atropine

D. Physostigmine

Correct Answer: A. Sugammadex

Explanation: Correct Option A - Sugammadex Sugammadex is a selective reversal agent that binds to vecuronium and reverses its effects. It is particularly useful in patients with normal renal function and is known for its rapid action. Incorrect Options: Options B, C, and D are not preferred in a reversal of vecuronium.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A55 y/o man is undergoing general anaesthesia for abdominal pain and surgery. Shortly after administration of a non-depolarising neuromuscular blocker, he develops bronchospasm, hypotension and flushing of the face. Which of the following skeletal muscle relaxants is most likely responsible for this reaction? (Q866524)

A. Atracurium

B. Cisatracurium

C. Vecuronium

D. Pancuronium

Correct Answer: A. Atracurium

Explanation: The patient’s presentation of flushing and rash over the neck and chest during surgery is due to histamine release from a muscle relaxant. Atracurium is known for causing histamine release, which can lead to flushing, hypotension, and bronchospasm in sensitive individuals. This reaction is dose-related and occurs more

commonly with atracurium than with other neuromuscular blockers. Cisatracurium (Option B): Stereoisomer of atracurium, but much less histamine release; preferred in patients at risk. Vecuronium (Option C): Minimal cardiovascular or histamine effects. Pancuronium (Option D): Causes vagolytic effects (↑HR), no significant histamine release.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q16: A 35-year-old male undergoing abdominal surgery under general anesthesia develops sudden generalized muscle rigidity, rapid increase in body temperature, and tachycardia shortly after administration of sevoflurane and succinylcholine. His end-tidal CO■ is rising despite controlled ventilation. What is the most appropriate immediate treatment? (Q866521)

A. Dantrolene

B. Diazepam

C. Pancuronium

D. Vecuronium

Correct Answer: A. Dantrolene

Explanation: This patient has classic features of malignant hyperthermia - muscle rigidity, hyperthermia, tachycardia, and rising end-tidal CO■ after exposure to triggering agents (volatile anesthetics like sevoflurane and succinylcholine). The immediate and definitive treatment is intravenous dantrolene , a ryanodine receptor antagonist that inhibits calcium release from the sarcoplasmic reticulum in skeletal muscle, thereby reversing hypermetabolism and rigidity. Triggers of Malignant Hyperthermia: Inhaled general anesthetics Ether Halothane Enflurane Isoflurane Desflurane Sevoflurane Depolarizing muscle relaxant Succinylcholine Prior exercise, even just an hour before anaesthesia induction, intensifies the severity and accelerates the onset of rigidity. Initial Indicators of Malignant Hyperthermia (MH) During Anesthesia: Muscle rigidity Masseter spasm Tachycardia Unexplained hypercarbia Increased temperature Other Features: Cyanosis, metabolic acidosis, hypertension, fever, sweating, Hyperkalemia, Hyperphosphatemia, Myoglobinemia, Myoglobinuria, Cardiac Arrest, DIC, etc. Diazepam (Option B): Benzodiazepine for seizures/muscle spasm, but ineffective in malignant hyperthermia. Pancuronium (Option C): Non-depolarizing neuromuscular blocker; does not treat the underlying calcium dysregulation. Vecuronium (Option D): Another non-depolarizing muscle relaxant; similarly ineffective in malignant hyperthermia.

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@Neet_pg_bot

Q17: Which surgery should be avoided in a patient with a fibroma and moderate to severe cardiac disease? (Q859740)

A. Laparoscopic hysterectomy

B. Abdominal hysterectomy

C. Total hysterectomy

D. Subtotal hysterectomy

Correct Answer: A. Laparoscopic hysterectomy

Explanation: Laparoscopic hysterectomy should be avoided in patients with moderate to severe cardiac disease due to the physiological changes caused by pneumoperitoneum (insufflation of the abdomen with carbon dioxide), including: Increased intra-abdominal pressure : Can lead to decreased venous return, increased afterload, and reduced cardiac output, which are particularly dangerous for patients with compromised cardiac function. Carbon dioxide absorption : Can cause hypercapnia, leading to respiratory acidosis and increased cardiac workload. Positioning during surgery : Trendelenburg position (head-down tilt) commonly used in laparoscopic surgeries can exacerbate hemodynamic instability. Incorrect Options: Abdominal hysterectomy (option B): Although it is more invasive, it avoids the hemodynamic complications of pneumoperitoneum and is relatively safer for patients with cardiac disease. Total hysterectomy (option C): This term refers to the removal of the uterus and cervix and can be performed abdominally or vaginally. The abdominal approach is safer than laparoscopic surgery in patients with cardiac disease. Subtotal hysterectomy (option D): This involves removing the uterus while leaving the cervix intact and can also be performed abdominally, which is safer for cardiac patients.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 379

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: Which of the following is contraindicated in patients with acute intermittent porphyria? (Q859720)

A. Thiopentone

B. Propofol

C. Etomidate

D. Ketamine

Correct Answer: A. Thiopentone

Explanation: Thiopentone is contraindicated in patients with acute intermittent porphyria (AIP). AIP is a disorder of heme biosynthesis, and thiopentone, a barbiturate used for induction of anesthesia, can trigger an acute attack of porphyria. It induces the synthesis of porphyrin precursors, exacerbating the disease and leading to symptoms such as abdominal pain, neuropathy, and mental changes. Incorrect Options: Propofol (option B) is considered safe for use in patients with acute intermittent porphyria. It does not induce the production of porphyrin precursors and is a commonly used anesthetic agent in these patients. Etomidate (option C) is another anesthetic agent that is generally safe for use in patients with acute intermittent porphyria. It does not affect the heme pathway and is often preferred in situations where other agents might be contraindicated. Ketamine (option D) can be used in patients with acute intermittent porphyria. It does not interfere with the porphyrin biosynthesis pathway and is often used in situations where general anesthesia is required, especially in cases of trauma or when other agents are contraindicated.

References:

Morgan and Mikhail's Clinical Anaesthesia, 6th Edition, Page 309

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: Which of the following induction agents is most appropriate for a patient with cardiac disease? (Q857058)

A. Ketamine

B. Etomidate

C. Propofol

D. Thiopentone

Correct Answer: B. Etomidate

Explanation: It is an α2-receptors agonist therefore it maintains the vascular tone and myocardial contractility, thus maintaining cardiovascular haemodynamics which makes it an anesthetic of choice in cardiac disease. General Anesthetics for Cardiac Patients Intravenous Anesthetics: Thiopentone: Reduces myocardial contractility, preload, and blood pressure; administer slowly with caution. (Option D ruled out) Propofol: Significantly lowers blood pressure and heart rate; not ideal for patients with coronary artery disease (CAD) (Option C ruled out) Ketamine: Not suitable for ischemic heart disease (IHD) and valvular heart disease; useful in cardiac tamponade and cyanotic heart disease. Only IV agent to increase BP and HR. (Option A ruled out) Midazolam: Decreases mean arterial pressure and increases heart rate; provides excellent amnesia; safe for CAD patients. Etomidate: Causes minimal hemodynamic changes; good for patients with poor cardiac reserve. Agent of choice. (Option B) Narcotics: Preferred for cardiac stability and analgesia; newer agents like fentanyl and sufentanil also provide stability. Inhalational Agents: Isoflurane: Recommended for patients with good myocardial contractility. Halothane: Causes myocardial depression and dysrhythmias; Not used. Nitrous Oxide: Maintains stable hemodynamics in cardiac patients. Muscle Relaxants: Vecuronium: Minimal hemodynamic changes; short-acting,

suitable for cardiac patients. Pipecuronium, Mivacurium, Doxacurium: Newer non-depolarizing agents with minimal cardiovascular side effects. Anticholinergics: Glycopyrrolate: Preferred over atropine for less tachycardia; use only as needed.

References:

Anaesthetic Considerations in Cardiac Patients Undergoing Non-Cardiac Surgery

Morgan and Mikhail's Clinical Anaesthesia, 7th Edition, Page 723 (PDF)

↑ *Back to this question in Part A*

@Neet_pg_bot

Q20: A 35 y/o asthmatic patient is scheduled for a minor surgical procedure. Which induction agent and muscle relaxant combination is safest for this patient? (Q852743)

A. Propofol and Succinylcholine

B. Ketamine and d-tubocurarine

C. Ketamine and Vecuronium

D. Thiopental and Rocuronium

Correct Answer: C. Ketamine and Vecuronium

Explanation: Ketamine is beneficial in asthmatics as it provides analgesia and induces bronchodilation without significant hemodynamic instability. Vecuronium is a non-depolarizing muscle relaxant that does not release histamine, making it safe for use in asthmatic patients. Anaesthesia in Asthmatics IV Induction Agent : Propofol : Preferred for stable patients, promotes bronchodilation. Ketamine : Ideal for hemodynamically unstable asthmatics, promotes bronchodilation. Muscle Relaxant : Vecuronium , Rocuronium , Cis-atracurium : Safe for use in asthmatics, no significant histamine release. Pancuronium : Releases low levels of histamine. Inhalational Agent : Sevoflurane , Isoflurane , Halothane : Ideal choices as they depress airway reflexes and relax bronchial smooth muscle. Desflurane : This should be avoided due to airway irritation and increased airway resistance. Propofol and Succinylcholine (Option A) : Succinylcholine may provoke bronchospasm. Ketamine and d-tubocurarine (Option B) : d-tubocurarine releases histamine, which can trigger bronchospasm. Thiopental and Rocuronium (Option D) : Thiopental has slower recovery times and can cause respiratory depression.

References:

Anasethsia asthma

Miller's Anaesthesia, 9th edition, Page 812

↑ *Back to this question in Part A*

@Neet_pg_bot

Q21: Which of the following is incorrect regarding thiopentone? (Q852834)

A. It is lipid soluble

B. It achieves maximum concentration in the brain after an IV infusion

C. Redistribution to adipose tissue and muscle is seen

D. Rapid decline in its effect is due to renal excretion

Correct Answer: D. Rapid decline in its effect is due to renal excretion

Explanation: Thiopentone is a highly lipid-soluble barbiturate, allowing rapid penetration into the brain. Peak brain concentration occurs quickly after IV administration due to high cerebral perfusion. Redistribution from the brain to muscle and adipose tissue leads to a rapid decline in anesthetic effect within minutes. Termination of action is due to redistribution , not renal excretion. Renal elimination is slow and plays a minimal role in terminating its effect. Pharmacokinetics of Thiopentone Feature Details Drug Class Barbiturate Solubility Highly lipid-soluble Onset of Action Rapid (within 30 seconds IV) Termination of Effect Redistribution to muscle and fat Metabolism Hepatic metabolism (slow clearance) Excretion Primarily renal but not responsible for rapid effect decline Clinical Uses Induction of anesthesia, status epilepticus, neuroprotection It is lipid soluble (Option A): Correct because thiopentone is highly lipid-soluble, allowing rapid CNS penetration. It achieves maximum concentration in the brain after an IV infusion (Option B): Correct because peak brain levels occur within seconds after IV injection. Redistribution to adipose tissue and muscle is seen (Option C): Correct because redistribution accounts for rapid recovery from anesthesia rather than metabolism or excretion. Rapid decline in its effect is due to renal excretion (Option D): Incorrect because the effect declines due to redistribution , not renal clearance.

References:

Miller’s Anesthesia, 9th edition, Pages 648, 649

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 165-179

KD Tripathi Essentials of Medical Pharmacology, 8th edition, Page 408

↑ *Back to this question in Part A*

@Neet_pg_bot

• [07_Monitoring in Anaesthesia] 012 Monitoring During Anaesthesia - I

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[07_Monitoring in Anaesthesia] 012 Monitoring During Anaesthesia - I — Quick Jump

Q1 (p. 403) *Q2 (p. 404)* *Q3 (p. 405)* *Q4 (p. 406)* *Q5 (p. 406)* *Q6 (p. 408)*
Q7 (p. 409) *Q8 (p. 410)* *Q9 (p. 412)* *Q10 (p. 412)* *Q11 (p. 415)*

Q1: Refer to the readings depicted in the image. Which statement is inaccurate based on these readings? (Q846679)

A. 76% is due to shivering

B. 76% is due to Methemoglobinemia

C. 76% is due to Carboxyhemoglobinemia

D. 76% is due to Peripheral Vasoconstriction



@Neet_pg_bot

Correct Answer: C. 76% is due to Carboxyhemoglobinemia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given image shows a pulse oximetry with a low SpO 2 . Out of 4 options, only carboxyhemoglobin can show false high readings, not false low readings. Principle of pulse oximeter: Based on Beer-Lambert's law , which relates solute concentration to light intensity. False low reading False high reading No change in reading Methemoglobinemia (Option B). Peripheral vasoconstriction (shock, hypotension) (Option C). Anemia Shivering (Option A). Nail paint (Dark blue - maximum) Carboxyhaemoglobin Skin pigmentation Sulph Hb Polycythemia Jaundice

References:

Miller's Anesthesia, 9th Edition, Page 1302-1305 https://www.ncbi.nlm.nih.gov/books/NBK362376/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which combination of ECG leads is considered the best for diagnosing intraoperative myocardial ischemia? (Q846684)

A. Leads I, II, and III

B. Leads II, V4, and V5

C. Leads V1, V2, and V3

D. Leads aVR, aVL, and aVF

Correct Answer: B. Leads II, V4, and V5

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Best ECG Lead Combination: Leads II, V4, and V5 for intraoperative myocardial ischemia monitoring. ECG Monitoring 12 Leads: Leads II and V5 are crucial. Lead II: Detects intraoperative arrhythmias. Lead V5: Detects ischemia.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5766655/

https://ccforum.biomedcentral.com/articles/10.1186/s13054-020-02859-w

↑ *Back to this question in Part A*

@Neet_pg_bot

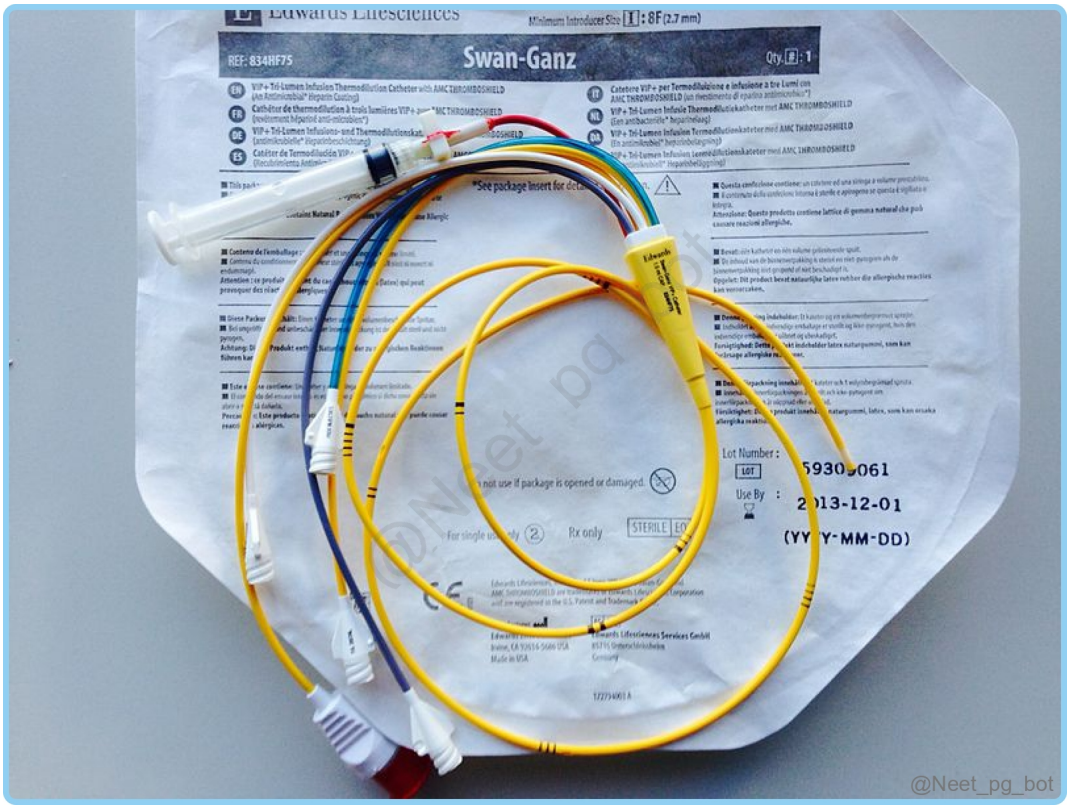
Q3: Which of the following is the correct function of the shown image? (Q846687)

A. Monitor Intracardiac pressures

B. Infuse solutions

C. Measure Temperature

D. All of the above



Correct Answer: D. All of the above

- *Listen (English)*
- *Listen (Hindi)*

Explanation: The device shown in the image is a Swan-Ganz catheter , also known as a pulmonary artery catheter (PAC) . It is a highly specialized diagnostic tool used in intensive care and surgery to monitor hemodynamic status. Uses includes: Monitor Intracardiac Pressures (Option A): The catheter is designed to be threaded through the right side of the heart into the pulmonary artery. It measures Central Venous Pressure (CVP), Right Ventricular Pressure, and Pulmonary Artery Wedge Pressure (PAWP), which helps assess left-sided heart function. Infuse Solutions (Option B): The catheter features multiple "lumens" (the different colored ports you see in the image). These allow clinicians to administer medications or fluids directly into the large veins or the right atrium. Measure Temperature (Option C): Most Swan-Ganz catheters include a thermistor (a temperature sensor) near the tip. This is used to measure core body temperature and, more importantly, to calculate cardiac output using a technique

called thermodilution.

References:

https://pubs.asahq.org/anesthesiology/article/134/1/111/108291/Perioperative-Temperature-Monitoring

https://www.edwards.com/healthcare-professionals/products-services/hemodynamic-monitoring/swan-ganz-catheters

↑ *Back to this question in Part A*

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Q4: Postoperatively, a patient reports feeling pain and recalling specific details from the operating room, during the procedure. Which of the following has no relevance to prevent this issue in the future? (Q846688)

A. Patient state analyzer

B. Visual Evoked Potentials

C. Evan's Score

D. Anxiolytics before anesthesia induction

Correct Answer: D. Anxiolytics before anesthesia induction

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: This is a case of Awareness during surgery While anxiolytics can help with preoperative anxiety, they have no relevance in preventing intraoperative awareness. Reasons for Awareness Insufficient inhalational agent No inhalational agent in the vaporizer Patient state analyzer (Option A): It is a spontaneous EEG activity monitor used to monitor brain electrical activity. Visual Evoked Potentials (Option B): This is also used to monitor brain electrical activity. Evan's score (Option C): Also called PRST score (P: Systolic blood Pressure; R: Heart Rate; S: Sweating; T: Tears). Monitors clinical signs

References:

https://www.ijca.in/html-article/10085

↑ *Back to this question in Part A*

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Q5: Which of the following is an incorrect statement for the image below? (Q846689)

A. The higher the value, the lower the awareness

B. Elevated EEG is seen in Ketamine

C. Depressed EEG is seen in COPD

D. Nitrous oxide shows elevated EEG



Correct Answer: A. The higher the value, the lower the awareness

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given image shows the Bispectral index (BIS). Higher values on BIS indicate higher awareness Bispectral Index (BIS) Monitoring Setup: EEG connected to the patient's frontal area. BIS is calculated based on EEG activity. BIS Values: (Option A) 100: Full Awareness 65 to 85: Moderate Sedation 40 to 65: Fully Anesthetized (adequate depth of anaesthesia) < 40: Cortical Depression or Deep Hypnotic State Depressed EEG Observations: Anesthetized Patients (IV induction and inhalational agents) Hypoxia or Hypercarbia (e.g., COPD) (Option C ruled out) Elevated EEG Observations: Ketamine (Option B ruled out) Nitrous Oxide (N■O) - has a low MAC value (Option D ruled out)

References:

https://resources.wfsahq.org/atotw/bispectral-index-monitoring-and-intraoperative-awareness/ Miller's Anesthesia, 9th Edition, Page 1282-1286

↑ *Back to this question in Part A*

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Q6: Which of the following is the most common nerve-muscle combination tested? (Q846691)

A. Ulnar Nerve & Adductor Pollicis Muscle

B. Ulnar Nerve & Abductor Pollicis Muscle

C. Radial Nerve & Adductor Pollicis Muscle

D. Radial Nerve & Abductor Pollicis Muscle



Correct Answer: A. Ulnar Nerve & Adductor Pollicis Muscle

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image given shows a Train of 4 stimulation. The most commonly tested pair in neuromuscular testing is the Ulnar Nerve & Adductor Pollicis Muscle. Common Nerve-Muscle Combinations: Ulnar Nerve & Adductor Pollicis Muscle (most common) (Option A) Facial Nerve & Orbicularis Oculi Muscle (second most common) Posterior tibial nerve and Flexor hallucis. Other nerves used: Common peroneal nerve.

References:

Miller's Anesthesia, 9th Edition, Page 771
https://www.sciencedirect.com/science/article/abs/pii/S1472029917300681
https://intraoperativeneuromonitoring.com/train-of-four/

↑ *Back to this question in Part A*

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Q7: A 65-year-old male patient is undergoing major abdominal surgery under general anesthesia. After induction of anesthesia, the patient's CVP is measured at 3 cm H 2 O. The patient's heart rate is 110/min, blood pressure is 80/50 mmHg. Which of the following is the most appropriate initial management step based on the CVP and clinical findings? (Q846692)

A. Administer vasopressors

B. Administer a fluid bolus

C. Transfuse blood

D. Increase the anesthetic depth

Correct Answer: B. Administer a fluid bolus

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Low CVP (3 cm H 2 O) suggests hypovolemia , which is consistent with the patient's tachycardia and hypotension. Administering a fluid bolus is the first-line treatment to increase preload and improve hemodynamics. Normal CVP range: 3-8 mmHg. Low CVP Causes: Elevated CVP Causes: Hypovolemia (blood loss or dehydration). Venodilation (e.g., in septic shock). Heart failure, fluid overload, valve dysfunction. Increased intrathoracic pressure (e.g., mechanical ventilation, tension pneumothorax). Vasopressors (Option A) may be required if hypotension persists after adequate fluid resuscitation, but not as the initial step. Blood transfusion (Option C) is not indicated unless there is evidence of blood loss or anemia. Increasing anesthetic depth (Option D) is inappropriate here, as the patient is likely hypovolemic.

References:

Miller's Anesthesia, 9th Edition, Page 1169 -1176 https://www.ncbi.nlm.nih.gov/books/NBK519493/#:~:text=The%20central%20venous%20pressure%20is,be%20zeroed%20to%20atmospheric%20pressure .

↑ *Back to this question in Part A*

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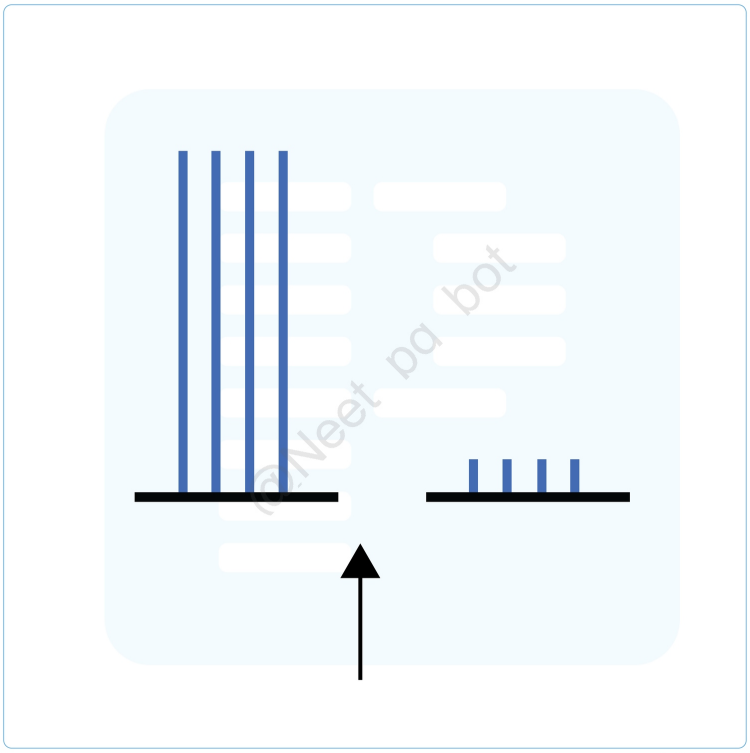
Q8: A 40-year-old female patient is undergoing a thyroidectomy under general anesthesia. A Train of Four (TOF) stimulation is performed to monitor neuromuscular function, the result of which is shown below. Which neuromuscular blocking agent was most likely administered? (Q846694)

A. Succinylcholine

B. Rocuronium

C. Vecuronium

D. Cisatracurium



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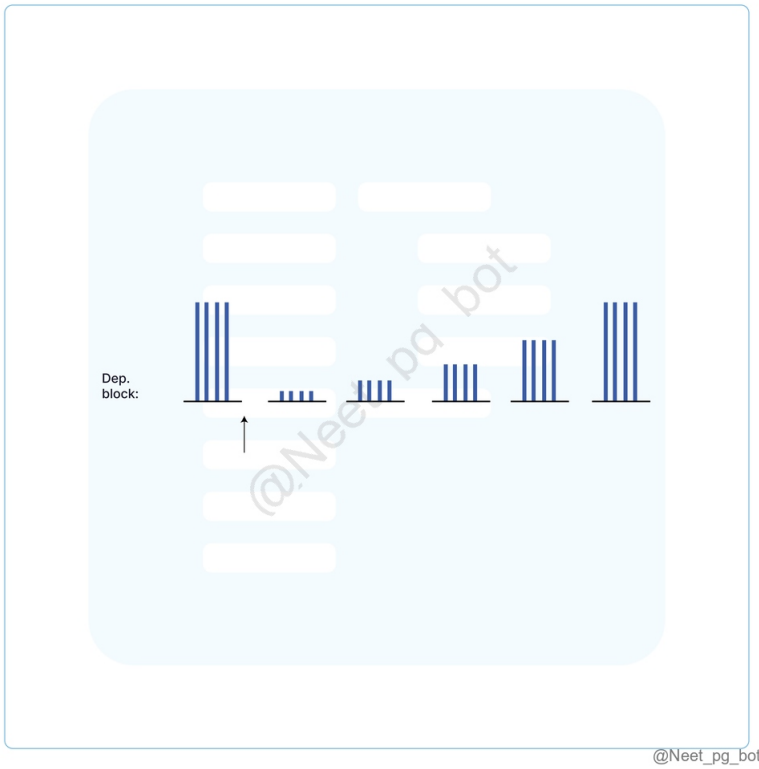
Correct Answer: A. Succinylcholine

■ *Listen (English)*

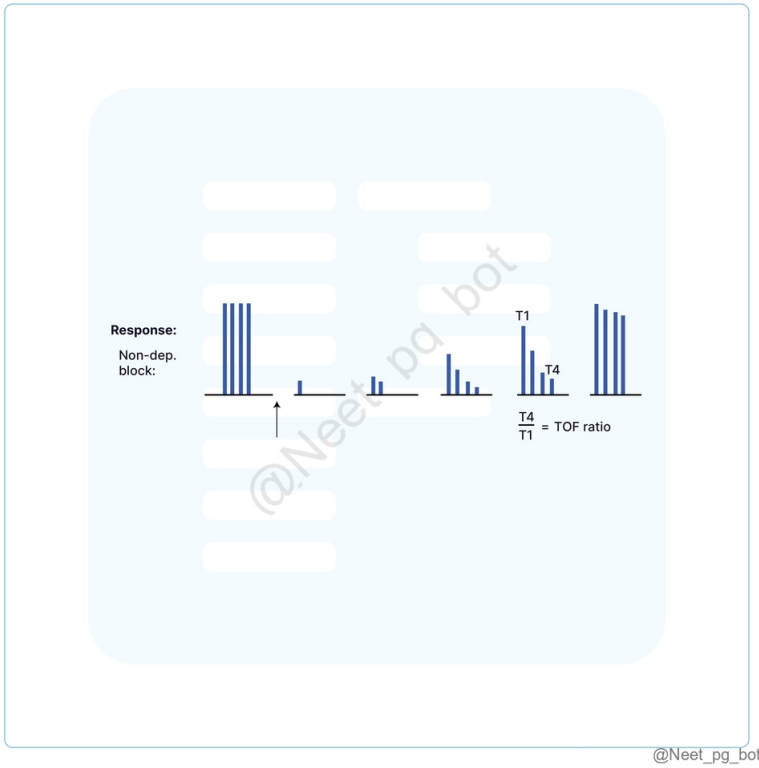
■ *Listen (Hindi)*

Explanation: TOF stimulation involves the delivery of four supramaximal electrical stimuli at a frequency of 2 Hz (one stimulus every 0.5 seconds). The absence of fade with all twitches equally reduced indicates the use of a depolarizing neuromuscular blocking agent, such as Succinylcholine Depolarizing neuromuscular blocking agent: Shows all four responses are equally diminished with a TOF ratio of 1. Rocuronium, Vecuronium, and Cisatracurium (Options B, C, and D): These are non-depolarizing neuromuscular blocking agents. In these, the

strength of the contractions diminishes progressively, showing a fade between the responses with a TOF ratio of <1. Train-of-Four (TOF) Pattern of Stimulation:



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References:

Miller’s Anesthesia, 9th Edition, Page 1358, 1359.

↑ *Back to this question in Part A*

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Q9: Which stimulation pattern is specifically designed to assess deep neuromuscular blockade? (Q846701)

A. Train-of-Four (TOF) stimulation

B. Single-Twitch stimulation

C. Post Tetanic Count (PTC) stimulation

D. Double-Burst stimulation (DBS)

Correct Answer: C. Post Tetanic Count (PTC) stimulation

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Post-Tetanic Count (PTC) stimulation is used to assess deep levels of neuromuscular blockade that are not detectable by TOF stimulation. It r equires 6-minute intervals, limiting continuous use. Train-of-Four (TOF) Stimulation (Option A): Used to assess moderate to profound blockade and to monitor recovery. It consists of four supramaximal stimuli given at 2 Hz (0.5-second intervals). It becomes ineffective when the blockade is deep (TOF count = 0). Single-Twitch Stimulation (Option B): Used only to establish a baseline twitch height before administering the muscle relaxant. Double-Burst Stimulation (DBS) (Option D): Used to assess recovery (shallow blockade) and detect fade. It involves two short bursts of tetanic stimulation separated by a 0.75 second pause. It is easier to detect fade visually or manually than TOF but cannot reliably assess recovery at higher TOF ratios.

References:

Miller’s Anesthesia, 9th Edition, Page 1357 - 1360.

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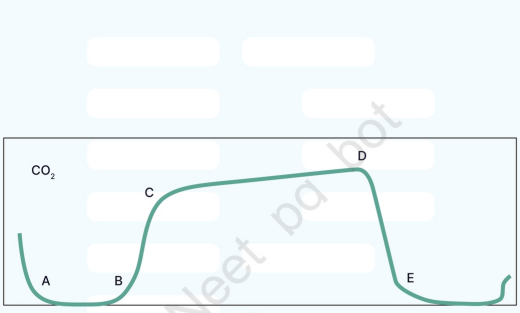
Q10: Which of the following is incorrect about the given image? (Q846702)

A. D represents the best reflection of the alveolar CO2

B. B to C represents CO2 of alveoli mixing with upper airway

C. A to B represents Dead space ventilation

D. E is the value seen on the monitor



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Correct Answer: D. E is the value seen on the monitor

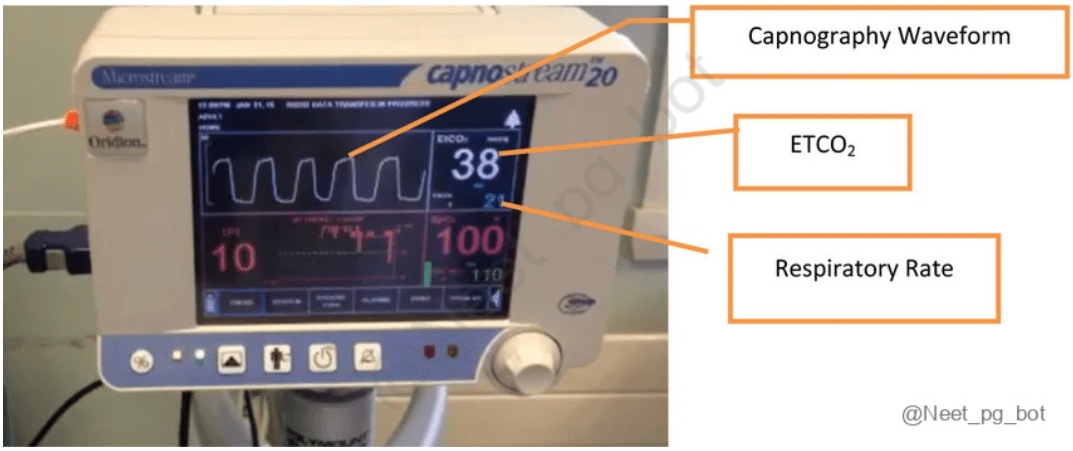
■ *Listen (English)*

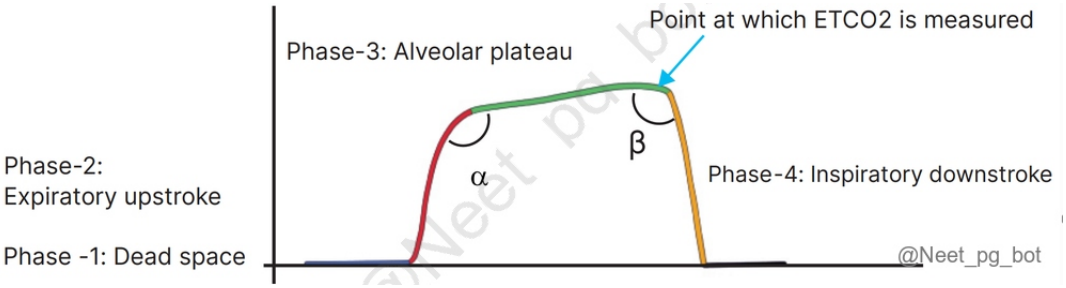
■ *Listen (Hindi)*

Explanation: From Phase D to E Inhalation begins CO 2 level drops to zero as oxygen fills the airway Point E does not represent the value seen on a capnograph monitor It is Point D, which represents the value seen on a monitor Capnography Capnography: Measures CO■ in the airway Provides breath-to-breath status of ventilation. Detects CO■ only. Capnographic waveforms: Phase I Dead Space Ventilation Beginning of exhalation No CO■ present Air from trachea and pharynx No gas exchange occurs here Called dead space ventilation (Option C) Phase II Ascending Phase (Expiratory upstroke) CO■ from alveoli reaches upper airway, mixes with dead space air Causes rapid rise in CO■ concentration. (Option B) Phase III Alveolar Plateau Majority of exhaled air is CO■-rich Uniform CO■ concentration End-Tidal Highest CO■ concentration is the end-tidal value. This is the value you see on the monitor Normal EtCO2 is 35 35-45mmHg Best reflection of Alveolar CO2 (Option A) Phase IV Descending Phase (Inspiratory downstroke) Inhalation begins CO■ level drops to zero as oxygen fills the airway.



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References:

https://www.nuemblog.com/blog/capnography

https://sinaiem.org/foam/end-tidal-waveform-capnography/

https://www.nm.org/-/media/northwestern/resources/for-medical-professionals/ems-training/ems-education/capnography.pdf

↑ *Back to this question in Part A*

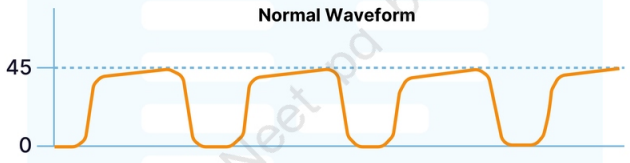
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Q11: A 62-year-old male with asthma presents to the emergency department with worsening shortness of breath and wheezing. He is placed on supplemental oxygen and bronchodilators. What is the most likely Capnographic waveform for this patient? (Q846703)

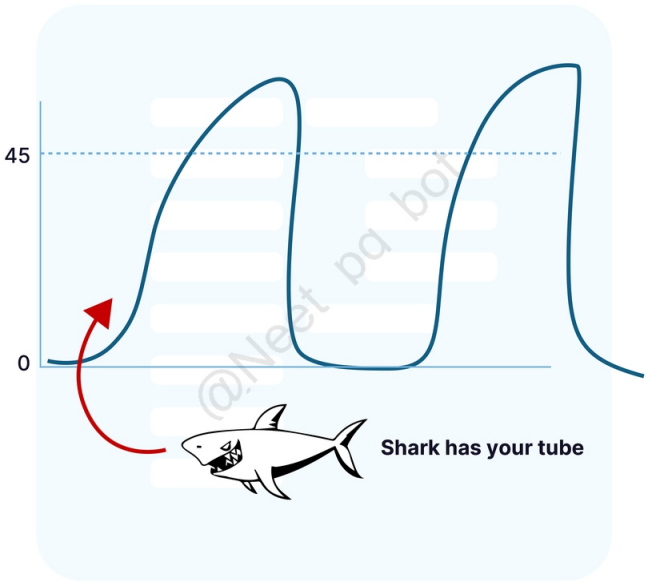
Correct Answer: Unknown

- *Listen (English)*
- *Listen (Hindi)*

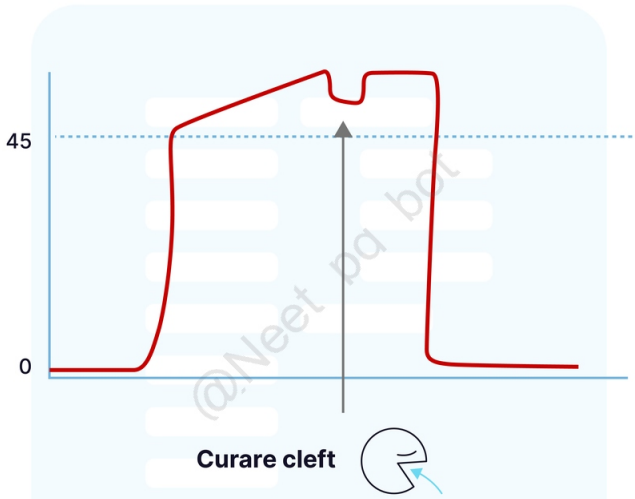
Explanation: The capnographic waveform shows a characteristic Shark fin appearance. This occurs in Bronchospasms (asthma, COPD exacerbation), partially obstructed ET tube, or breathing circuit. Different Types of Capnographic Waveforms: A normal wave in controlled mechanical ventilation Bronchospasm (asthma, COPD exacerbation) / partially obstructed ET tube or breathing circuit Shark fin appearance Spontaneous breathing effort during controlled mechanical ventilation (Curare notch) Curare cleft, or notch, is seen during spontaneous ventilation. Patients partially paralyzed with muscle relaxants may make respiratory efforts at any time during the respiratory cycle with controlled ventilation. As the muscle relaxant is reversed, the curve becomes normal in shape. (Option D ruled out) Hypoventilation (Option A ruled out) Hyperventilation (Option B ruled out)



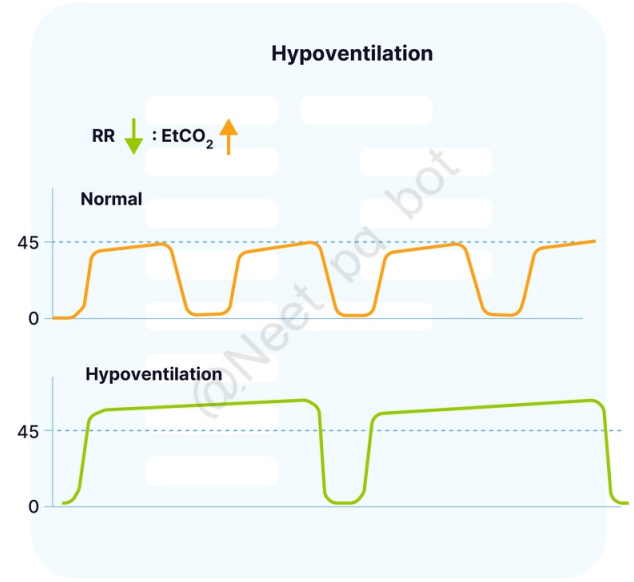
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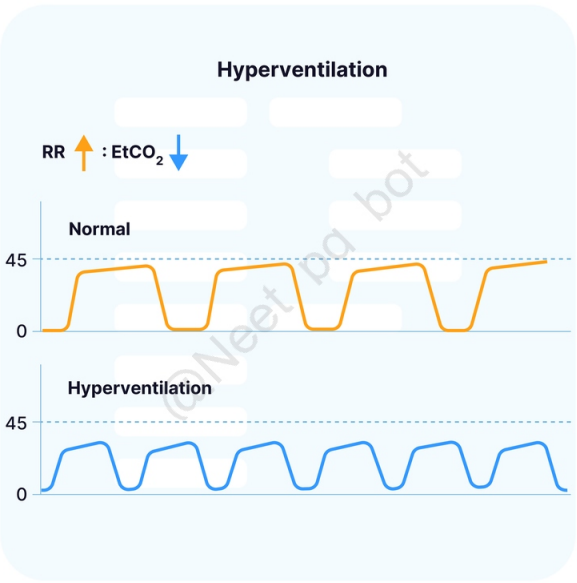
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References:

https://www.nuemblog.com/blog/capnography

https://sinaiem.org/foam/end-tidal-waveform-capnography/

https://www.nm.org/-/media/northwestern/resources/for-medical-professionals/ems-training/ems-education/capnography.pdf

↑ *Back to this question in Part A*

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• [07_Monitoring in Anaesthesia] 013 Previous Year Questions

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[07_Monitoring in Anaesthesia] 013 Previous Year Questions — Quick Jump

Q1 (p. 419) *Q2 (p. 420)* *Q3 (p. 421)* *Q4 (p. 428)* *Q5 (p. 429)* *Q6 (p. 431)*

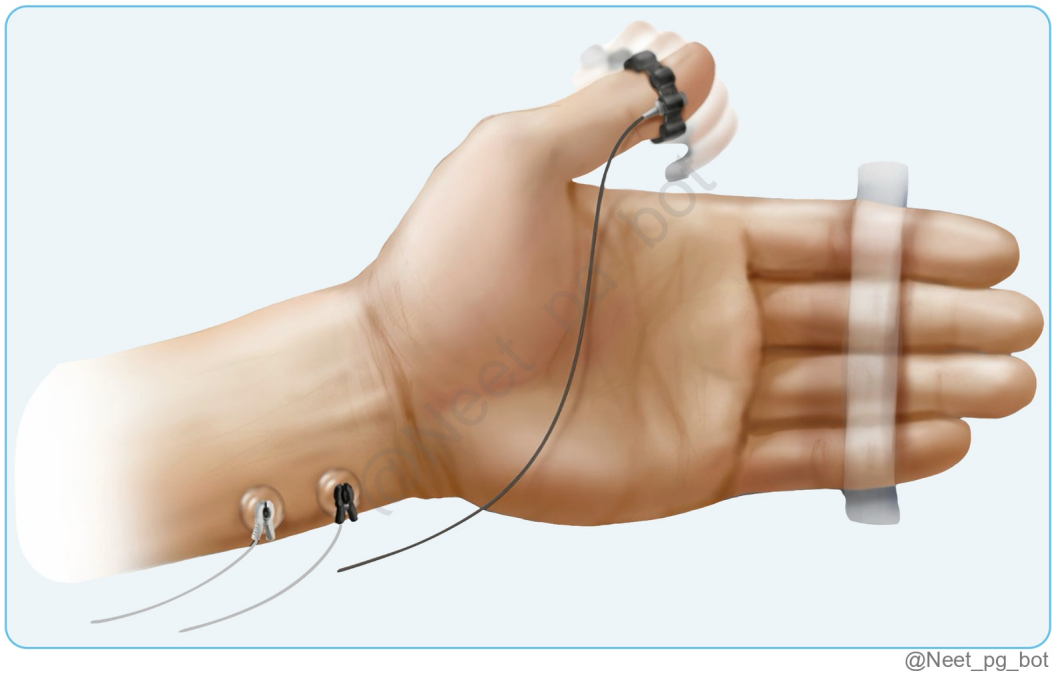
Q1: During general anesthesia, which nerve is commonly monitored using a nerve stimulator to assess neuromuscular blockade? (Q866917)

A. Radial nerve

B. Ulnar nerve

C. Median nerve

D. Tibial nerve



Correct Answer: B. Ulnar nerve

Explanation: The ulnar nerve is the standard site for neuromuscular monitoring because: Muscle Innervation: It innervates the adductor pollicis muscle in the hand. This muscle is highly sensitive to neuromuscular blocking agents, and its response accurately reflects the blockade's depth. Clear Twitch Response: Monitoring the adductor pollicis muscle provides a clear and easily measurable twitch response. This allows anesthesiologists to precisely

gauge the degree of muscle paralysis. Superficial Location: The ulnar nerve is easily accessible at the wrist, making electrode placement simple and reliable. Assessment of Blockade: It provides a dependable assessment of non-depolarizing blockade, which is crucial for determining the appropriate time for drug administration or reversal. Incorrect Options: Radial nerve (Option A) is not typically used for NMB monitoring due to its deeper location and the variable and less reliable responses from the muscles it innervates. Median nerve (Option C) is generally reserved for somatosensory evoked potential (SSEP) monitoring , which is used to assess the function of the spinal cord and somatosensory pathways, rather than neuromuscular blockade. Tibial nerve (Option D) can be used for monitoring NMB, particularly for lower extremity procedures, but it is less standardized and often provides less reliable data compared to the ulnar nerve.

References:

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↑ *Back to this question in Part A*

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Q2: A 60-year-old male patient is undergoing laparoscopic cholecystectomy. During the surgery, a sudden decrease in etCO2 to 8 mm Hg was observed. The patient's SpO2 was 90% and peak airway pressure was 18 mm Hg. His blood pressure also dropped to 80/50 mm Hg. Which of the following is the most probable diagnosis? (Q857319)

A. Pneumothorax

B. CO 2 embolism

C. Endobronchial intubation

D. Bronchospasm

Correct Answer: B. CO 2 embolism

Explanation: The most probable diagnosis in this scenario is CO2 embolism. The sudden decrease in end-tidal carbon dioxide (etCO2), along with a drop in oxygen saturation (SpO2), low blood pressure, and normal peak airway pressure, is indicative of a gas embolism. In laparoscopic procedures, CO2 is commonly used to insufflate the abdomen, and an unintentional entry of CO2 into the vascular system can lead to a gas embolism. Air Embolism Occurs when air enters accidentally into the vascular system.Commonly iatrogenic via interventional procedures, but also from trauma, diving, childbirth, and other circumstances. Causes Through venous access like IV cannula. Artificial Pneumothorax. Surgeries of neck and axilla. Traumatic opening of major veins sucking air inside. Fallopian tube insufflation. Laparoscopic surgeries. Illegal abortions. Symptoms Respiratory Distress, Hemoptysis, Convulsions, Unconsciousness, Visual and hearing disturbances, Fatigue and numbness, Paralysis, Hemodynamic instability, Coma. Diagnosis Patient history especially relation to recent procedures. Auscultation: Millwheel murmur heard over the precordium is diagnostic. ECG: ST depression and right heart strain due to

pulmonary artery obstruction. Capnometry: Decreased end-tidal CO2 levels in intubated patients. Imaging: Chest X-ray, Doppler ultrasonography, transesophageal echocardiography (TEE). Treatment Positioning: Trendelenburg position: Keeps air bubbles away from coronary arteries. Left lateral decubitus position: Helps trap air in the non-dependent segment of the right ventricle, preventing it from entering the pulmonary artery. Hyperbaric oxygen therapy: Useful in both venous and arterial air embolism as it reduces ischemia, bubble size; in arterial embolism it removes nitrogen from bubbles to improve perfusion and oxygenation. Aspiration: Air should be aspirated from the right ventricle with a needle. Open Thoracotomy: Life-saving procedure required to aspirate excess air causing the block. Peak pressure is normal (17–20 mmHg), ruling out conditions like pneumothorax (Option A ruled out) , bronchospasm (Option D ruled out) , or endobronchial intubation (Option C ruled out) , which typically increase airway pressure.

References:

Bailey & Love Edition 28 page no:1014

SRB's Surgery Edition 6 page no: 188,189

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3665124/

↑ *Back to this question in Part A*

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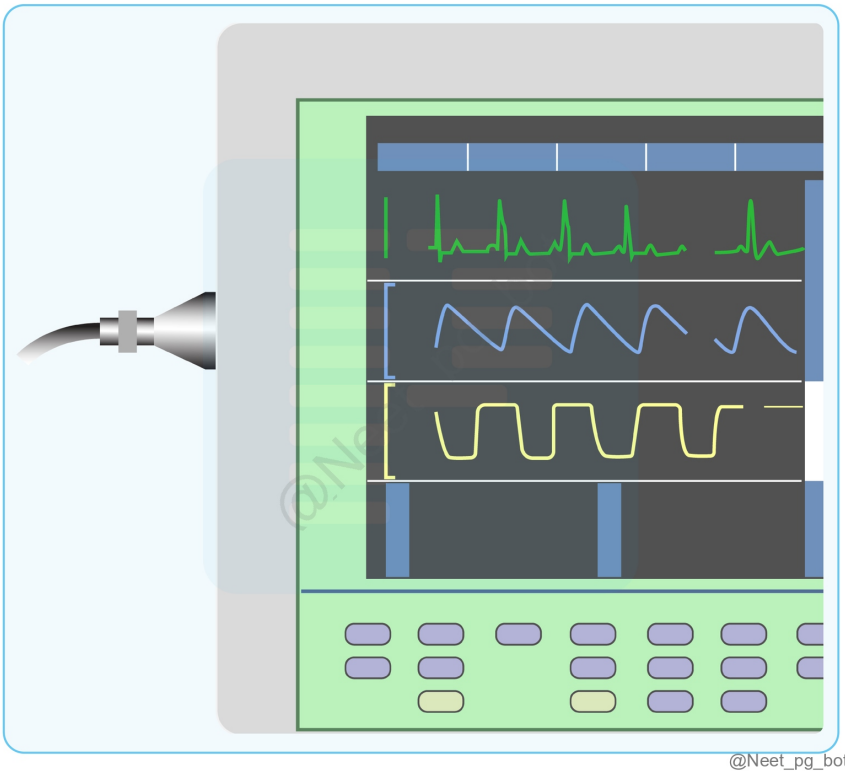
Q3: You are in the operating room and notice the tracing in yellow colour on this device. What does it indicate? (Q858062)

A. Capnography

B. Airway pressure

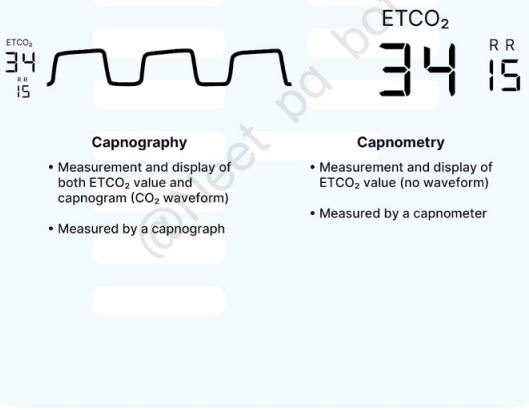
C. O2 pressure in inhaled air

D. O2 pressure in exhaled air



Correct Answer: A. Capnography

Explanation: The yellow tracing on the device indicates capnography, which monitors CO■ levels in exhaled air. Capnography and Capnometry difference: {{caption_text}} Capnography: Measures CO■ in the airway Provides breath-to-breath status of ventilation. Detects CO■ only. {{caption_text}} Phase I Dead Space Ventilation {{caption_text}} • Beginning of exhalation • No CO■ present • Air from trachea and pharynx ■ No gas exchange occurs here ■ Called dead space ventilation (Option C) {{caption_text}} Phase II Ascending Phase {{caption_text}} • CO■ from alveoli reaches upper airway ,mixes with dead space air • Causes rapid rise in CO■ concentration. (Option B) Phase III Alveolar Plateau {{caption_text}} • Majority of exhaled air is CO■-rich • Uniform CO■ concentration End-Tidal {{caption_text}} • Highest CO■ concentration is the end-tidal value. • This is the value you see on the monitor • Normal EtCO2 is 35 35-45mmHg • Best reflection of Alveolar CO2 (Option A) Phase IV Descending Phase {{caption_text}} • Inhalation begins • CO■ level drops to zero as oxygen fills the airway. {{caption_text}} {{caption_text}}



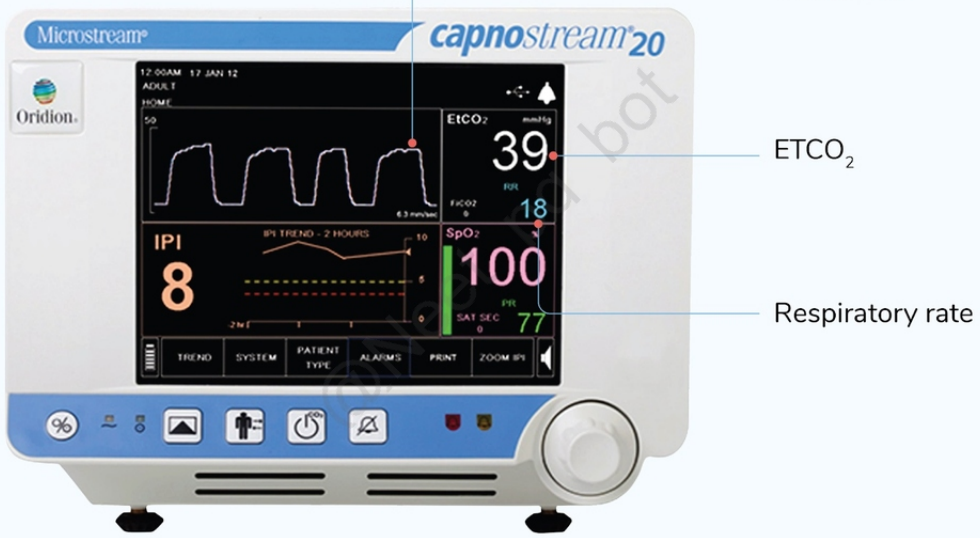
Capnography

- Measurement and display of both $ETCO_2$ value and capnogram (CO_2 waveform)
- Measured by a capnograph

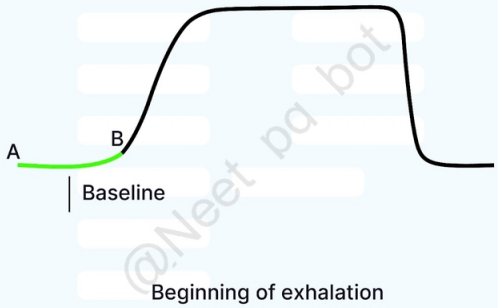
Capnometry

- Measurement and display of $ETCO_2$ value (no waveform)
- Measured by a capnometer

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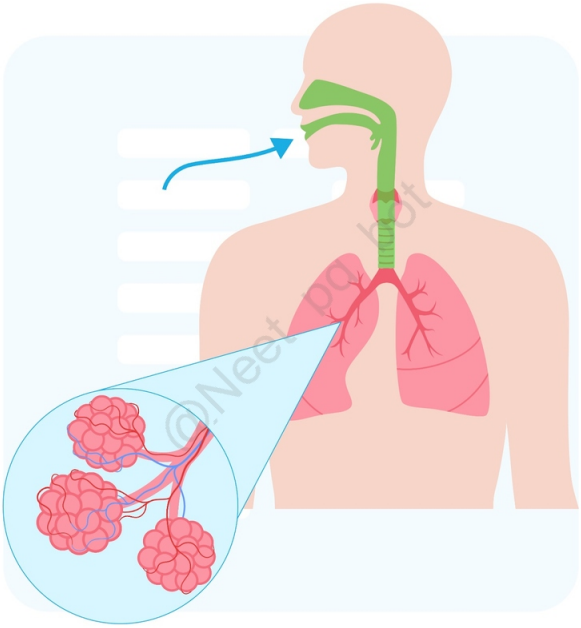


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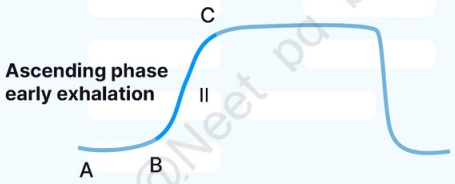


Beginning of exhalation

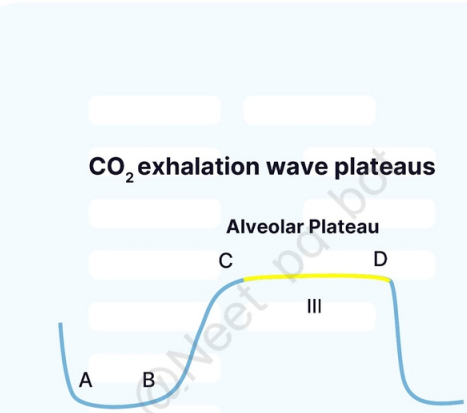
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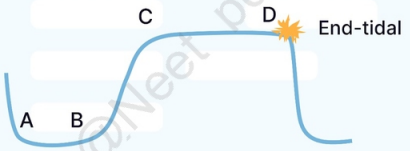


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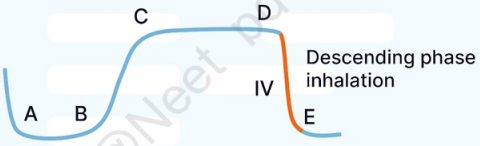
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End of the wave of exhalation

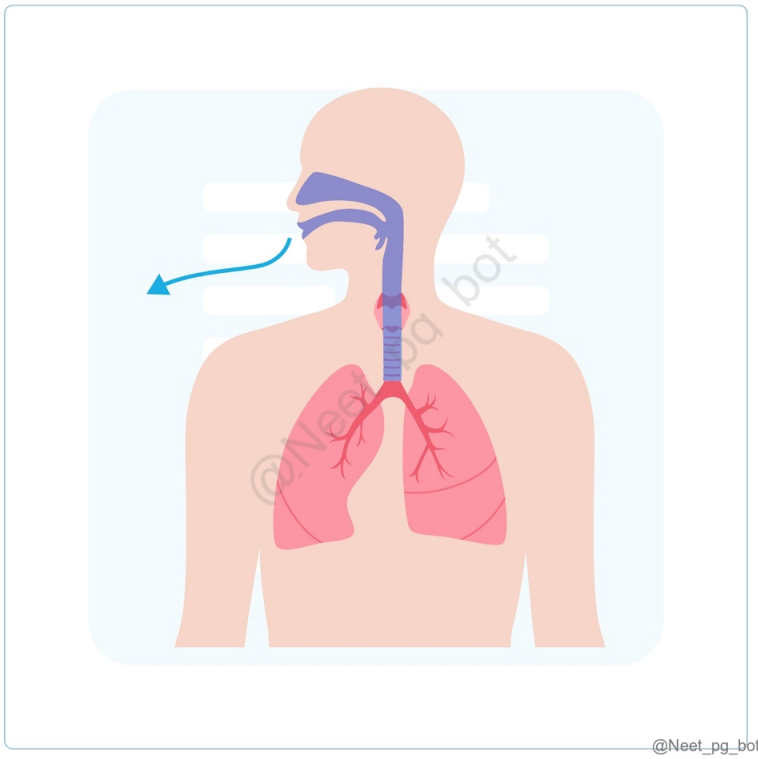


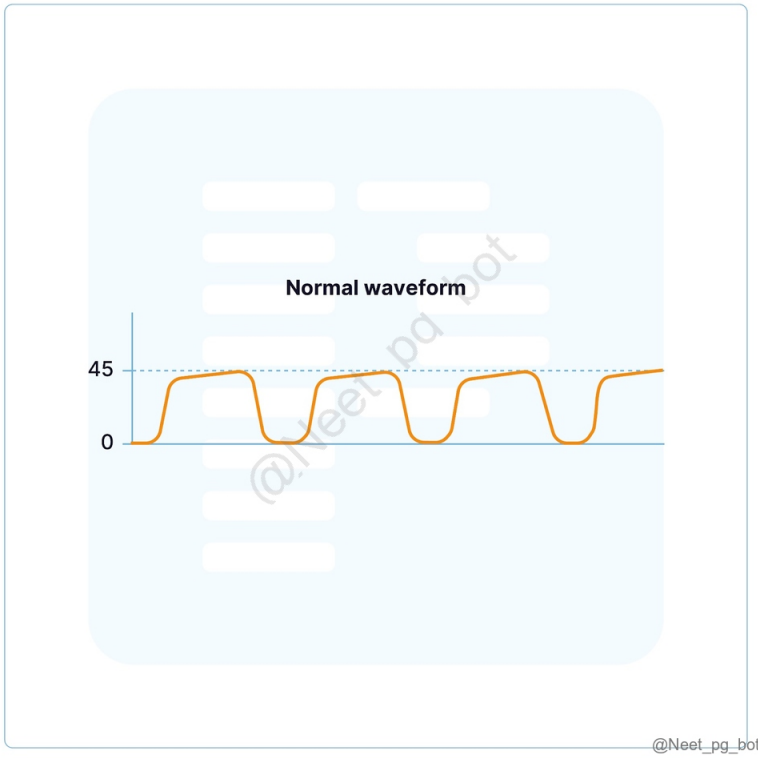
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Inspiratory downstroke returns to baseline



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References:

https://www.nuemblog.com/blog/capnography https://sinaiem.org/foam/end-tidal-waveform-capnography/ https://www.nm.org/-/media/northwestern/resources/for-medical-professionals/ems-training/ems-education/capnography.pdf

↑ *Back to this question in Part A*

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Q4: What is the frequency of tetanic stimulation used in neuromuscular monitoring? (Q856581)

A. 0.2 Hz

B. 2 Hz

C. 20 Hz

D. 50 Hz

Correct Answer: D. 50 Hz

Explanation: The frequency of tetanic stimulation used in neuromuscular monitoring is typically 50 Hz. This frequency is used to deliver a rapid, sustained series of stimuli that can help evaluate the neuromuscular block . Neuromuscular Monitoring: Heading Details Definition A monitor that assesses the effect of neuromuscular blockers on the neuromuscular junction. What it monitors Onset of blockade Intensity of blockade Reversal from blockade Involves two electrodes attached along the course of the ulnar nerve. Procedure Stimulate the ulnar nerve. Observe the response in the adductor pollicis muscle. Assess contraction to determine the degree of neuromuscular junction blockade. Common site Ulnar nerve Principle Supramaximal electrical stimulus is given to an accessible peripheral nerve (e.g., ulnar nerve), and the response is observed in the corresponding muscle group. Types of Stimulus Given Single twitch Train of four (TOF): Most common; 4 stimuli delivered at 2 Hz Tetanic stimulus: Continuous stimulus at 50 Hz Double burst stimulation Post-Tetanic count Counting of responses to single twitch stimulation after tetanic stimulation at 50 Hz or 100 Hz for 5 seconds. Indicates profound neuromuscular blockade if post-tetanic count is less than 5. Patterns of Nerve Stimulation for the evaluation of the neuromuscular function: Stimulation Pattern Mechanism Interpretation Clinical Implication and Limitation Single-Twitch Stimulation Single electrical stimulus applied at a frequency of 0.1 Hz to 1 Hz. Requires comparison to pre-NMBA administration value. Muscle response to the stimulus reflects neuromuscular block onset; changes in twitch height help assess blockade. Used to evaluate onset of neuromuscular block. Limited utility as a standalone test. Train-of-Four (TOF) Stimulation Four supramaximal stimuli delivered at 0.5-second intervals (2 Hz). Fade between responses indicates degree of block. TOF count assesses onset . TOF ratio measures recovery . Fade suggests nondepolarizing block. Most common pattern for intraoperative monitoring. Cannot measure deep block or phase I block. Double-Burst Stimulation (DBS) Two bursts of 50-Hz stimulation with a 750-ms interval. Fade between the two bursts indicates block. Fade between bursts correlates with TOF ratio. DBS is more sensitive for detecting fade. Better tactile detection of residual block than TOF but cannot reliably assess recovery at higher TOF ratios. Tetanic Stimulation High-frequency stimulation (50-100 Hz for 5 seconds) causing sustained muscle contraction . Fade indicates nondepolarizing block; sustained response suggests normal transmission or depolarizing block. Painful and limited use in practice. May cause lasting muscle

antagonism, affecting recovery assessment. Post Tetanic Count (PTC) Stimulation Tetanic stimulation (50 Hz for 5 seconds) followed by single twitches at 1 Hz after 3 seconds. Counts discernible twitches after tetanic stimulation; assesses deep block not detectable by TOF. Used for monitoring deep neuromuscular blockade. Requires 6-minute intervals, limiting continuous use.

References:

Miller's Anesthesia, ed. 9, page 1357 - 1360.

https://www.openanesthesia.org/keywords/monitoring-depth-of-neuromuscular-blockade

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which of the following methods cannot be used to determine cardiac output? (Q856772)

A. Thermal dilution technique

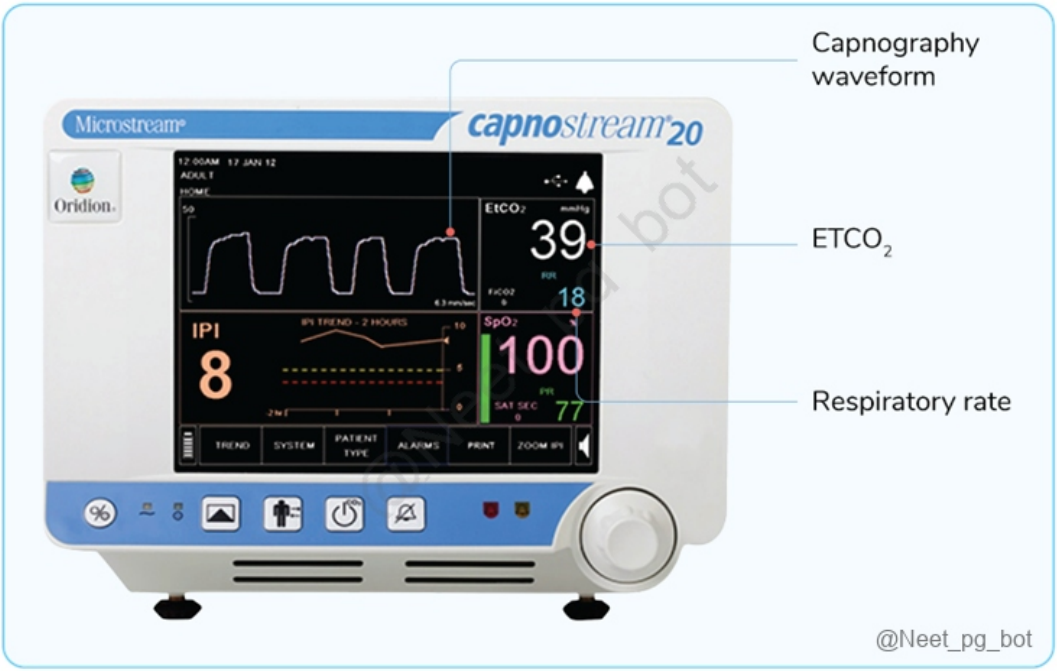
B. Capnography

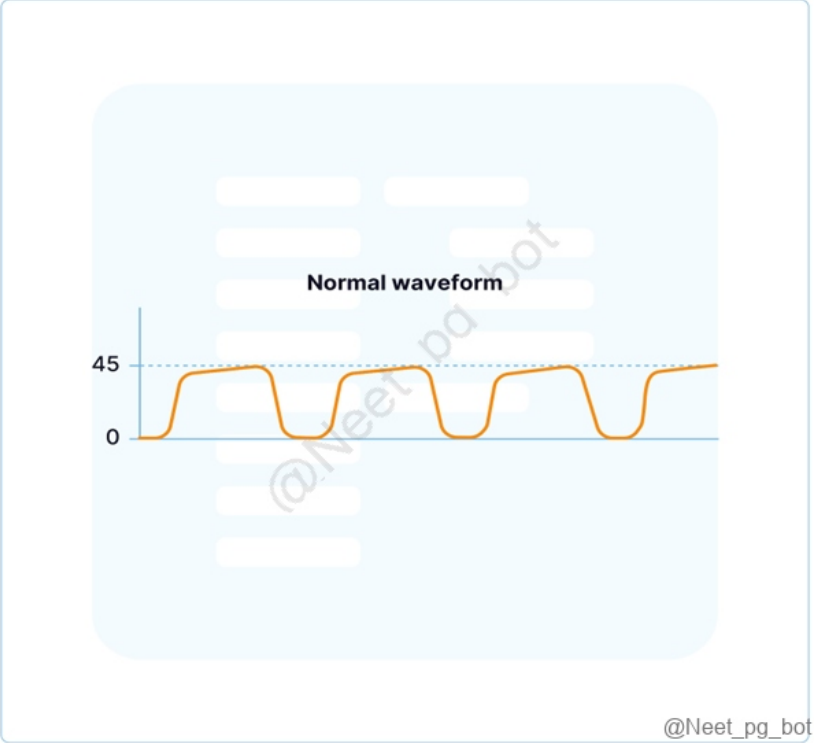
C. Esophageal doppler

D. Echocardiography

Correct Answer: B. Capnography

Explanation: Capnography is a monitoring technique that measures the partial pressure of carbon dioxide (CO■) in exhaled breath. It is commonly used to assess ventilation and end-tidal CO, levels but does not provide direct information about cardiac output. {{caption_text}} Cardiac output is volume of blood ejected by the heart into the aorta per minute and it is measured by: Method Principle Measurement Basis Key Considerations Fick Principle Oxygen uptake and arteriovenous difference Oxygen content in blood Accurate in steady states Indicator/Thermal Dilution Method (Option A ruled out) Indicator concentration dilution Injected dye or tracer Requires precise indicator handling Echocardiography (Transthoracic/transesophageal) (Options C & D ruled out) Ultrasound visualization and flow velocity Stroke volume estimation Non-invasive, real-time data Thoracic Electrical Bioimpedance Electrical impedance changes Impedance fluctuations Sensitive to external factors





References:

https://www.nuemblog.com/blog/capnography

Ganong's Review of Medical Physiology, 26th Edition- Page 532, 533

↑ *Back to this question in Part A*

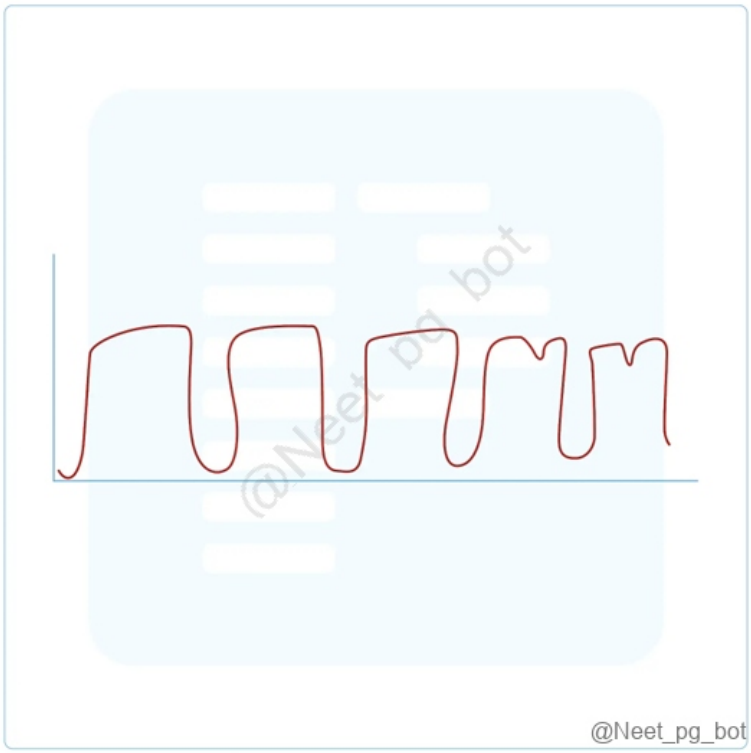
Q6: What could be the probable reason for the observed result in the capnograph of a patient who is intubated and undergoing controlled ventilation? (Q854893)

A. Esophageal intubation

B. Inspiration with cardiac oscillations

C. Bronchospasm

D. Spontaneous respiratory effort



Correct Answer: D. Spontaneous respiratory effort

Explanation: During controlled ventilation, spontaneous respiratory effort occurs when the patient attempts to breathe independently, alongside ventilator-delivered breaths. This typically results from insufficient sedation or inadequate neuromuscular blockade. Curare notch : Spontaneous effort during the plateau phase disrupts CO■ exhalation, creating a characteristic curare notch in the capnograph waveform. This indicates patient-initiated breaths superimposed on ventilator-delivered breaths. Incorrect Options: Esophageal intubation (Option A) produces an abnormal capnograph waveform with minimal or no CO■ detection. However, it does not explain the curare notch , which is specifically associated with spontaneous respiratory efforts. Inspiration with cardiac oscillations (Option B): Cardiac oscillations near the endotracheal tube during inspiration may cause small,

irregular fluctuations in the CO■ waveform. However, they do not produce the distinct curare notch observed during the plateau phase. Bronchospasm (Option C) alters the capnograph waveform by prolonging expiration and flattening or reducing CO■ levels. However, it does not cause the curare notch, which is specific to spontaneous breathing efforts.

References:

Miller’s Anesthesia, 8th Edition, Page 1554

Miller’s Anesthesia, 9th Edition, Page 1311

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 125, 127, 128

↑ *Back to this question in Part A*

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• [08_Cardiopulmonary Cerebral Resuscitation] 014 Cpcr

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[08_Cardiopulmonary Cerebral Resuscitation] 014 Cpcr — Quick Jump

Q1 (p. 433) *Q2 (p. 434)* *Q3 (p. 435)* *Q4 (p. 437)* *Q5 (p. 438)* *Q6 (p. 439)*
Q7 (p. 439) *Q8 (p. 440)* *Q9 (p. 441)* *Q10 (p. 442)* *Q11 (p. 443)* *Q12 (p. 445)*
Q13 (p. 446) *Q14 (p. 447)* *Q15 (p. 449)*

Q1: A 30-year-old man collapses and is unresponsive. After tapping his shoulders and getting no response, what is your next step? (Q846894)

A. Check his pulse

B. Start high-quality CPR

C. Start rescue breaths

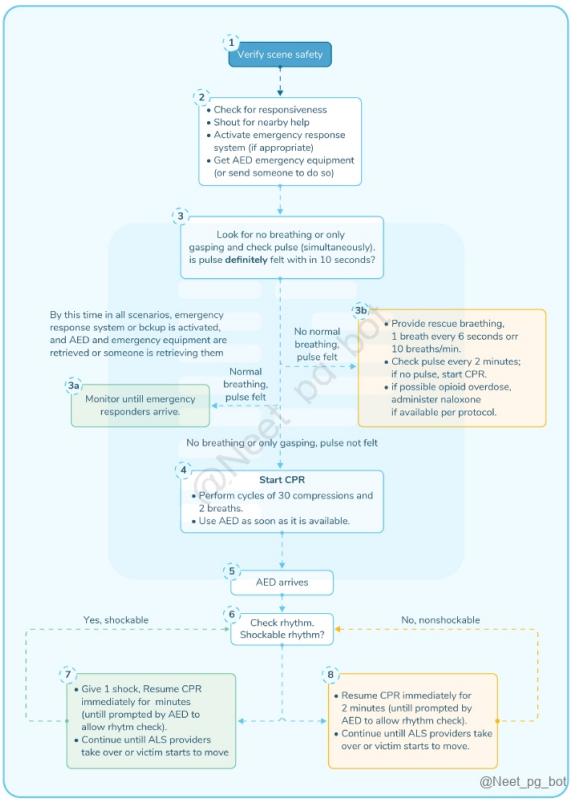
D. Shout for help

Correct Answer: D. Shout for help

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The first step after confirming unresponsiveness is to shout for help and activate emergency services . This ensures that additional resources (like an AED or more rescuers) are available while you continue to assess and provide care. Steps in Basic Life Support Skills:



References:

American Heart Association, Basic life support provider manual- 2020, Part 4, Page 15.

↑ *Back to this question in Part A*

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Q2: A 30-year-old man is found unconscious after a motorcycle accident. There are no signs of external bleeding, but you suspect a possible head or neck injury. You need to open his airway to check for breathing. What is the preferred method for opening the airway in this situation? (Q847267)

A. Head tilt-chin lift

B. Jaw thrust

C. Head tilt-neck lift

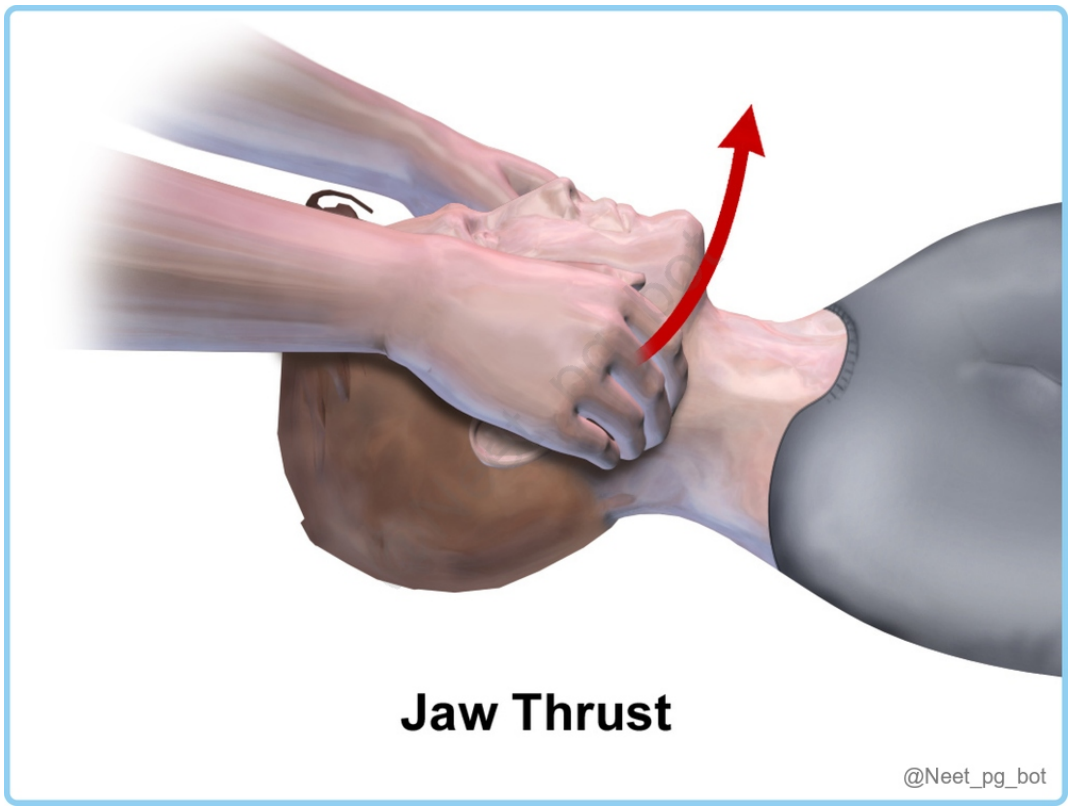
D. Avoid opening the airway

Correct Answer: B. Jaw thrust

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In a patient with suspected head or cervical spine injury , airway opening must be done without neck movement to avoid worsening a spinal injury. Jaw thrust maneuver opens the airway by lifting the mandible forward , which pulls the tongue away from the posterior pharynx. It does not require head extension or neck movement , making it the preferred method in trauma patients . {{caption_text}} Head tilt–chin lift (Option A) and Head tilt–neck lift (Option C): Require neck extension and may aggravate cervical spine injury . Avoid opening the airway (Option D): Airway assessment and maintenance is always the first priority in trauma care.



References:

American Heart Association, Basic life support provider manual- 2020, Part 4, Pages 19 - 23.

↑ *Back to this question in Part A*

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Q3: A 55-year-old man collapses at a shopping mall, and bystanders begin performing CPR. An automated external defibrillator (AED) is brought to the scene. After applying the pads, the AED begins analyzing the heart rhythm. You are assisting with the resuscitation. What action should you take during the AED's analysis? (Q847268)

A. Check the pulse.

B. Continue chest compressions.

C. Give rescue breaths only.

D. Stand clear of the victim.

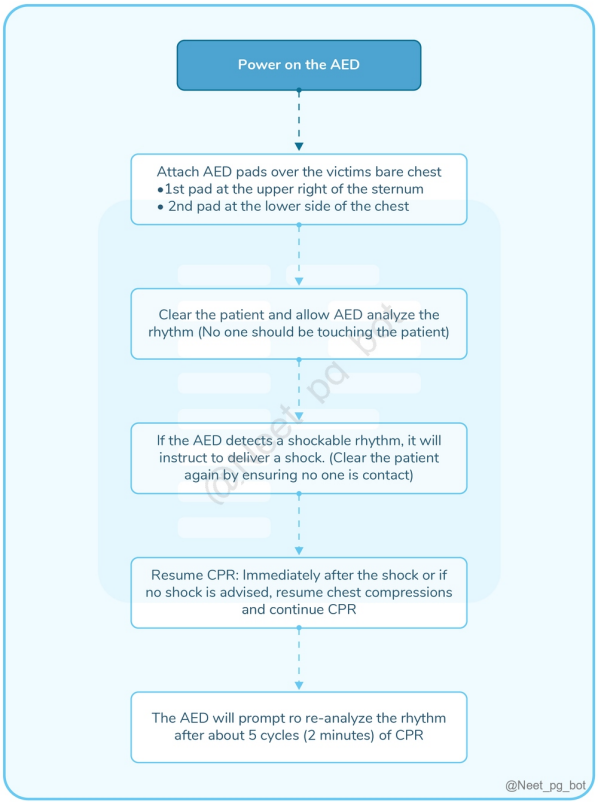
Correct Answer: D. Stand clear of the victim.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: During the AED analysis, it is crucial to avoid touching the patient to prevent interference with the heart rhythm reading and ensure the safety of those around. {{caption_text}} Steps for Operating an AED





References:

American Heart Association, Basic life support provider manual- 2020, Part 4, Pages 33, 34

↑ *Back to this question in Part A*

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Q4: A 60-year-old female is brought to emergency after being found unresponsive at home. Cardiopulmonary resuscitation (CPR) is initiated, and she is found to be in asystole. After several minutes of resuscitation efforts, her rhythm converts to ventricular fibrillation. Which of the following is most likely associated with improved survival in this case? (Q847269)

A. Defibrillation after the conversion to a shockable rhythm

B. Administration of high-dose epinephrine

C. Immediate initiation of therapeutic hypothermia

D. Continuous chest compressions without defibrillation

Correct Answer: A. Defibrillation after the conversion to a shockable rhythm

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Initially, the patient is in asystole, a non-shockable rhythm , and later converts to ventricular fibrillation, a shockable rhythm . Once the patient converts from a non-shockable to a shockable rhythm, defibrillation is the most effective intervention. Shockable rhythms have better survival and neurological outcomes compared to non-shockable rhythms . Non-Shockable Rhythms Shockable Rhythms Asystole Pulseless Electrical Activity (PEA) Do not respond to defibrillation Ventricular Fibrillation (VF) Pulseless Ventricular Tachycardia (pVT) Respond to defibrillation Administration of high-dose epinephrine (Option B) is not standard and may not significantly improve survival compared to defibrillation in shockable rhythms. Immediate initiation of therapeutic hypothermia (Option C) is used post-resuscitation for neuroprotection but does not address the immediate need for defibrillation. Continuous chest compressions without defibrillation (Option D) would delay the critical intervention for a shockable rhythm, reducing survival chances.

References:

https://pubmed.ncbi.nlm.nih.gov/27616581/

https://pubmed.ncbi.nlm.nih.gov/32504821/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: In pediatric Basic Life Support (BLS), which of the following is the most recent modification recommended by the American Heart Association (AHA) to improve resuscitation outcomes in children? (Q847270)

A. Starting with Airway, Breathing, Chest Compressions

B. Pulse check for 30 seconds before initiating CPR

C. Delivering chest compressions at a depth of 1 cm for infants

D. Shifting the resuscitation sequence to Chest Compressions, Airway, Breathing

Correct Answer: D. Shifting the resuscitation sequence to Chest Compressions, Airway, Breathing

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Modifications in Pediatric Basic Life Support (BLS) Sequence Shift: C-A-B (Option A ruled out) (Option C) Emphasis on chest compressions is first , followed by airway and breathing to improve survival in cardiac arrest. "Look, Listen, Feel" Removed Immediate CPR initiation is recommended if unsure about a pulse; it minimizes treatment delay. Pulse Check Lay rescuers: Pulse check not required. Healthcare providers: Pulse check

within 10 seconds; begin CPR if uncertain. (Option B ruled out) Compression Depth and Rate Depth: At least 1/3 of chest depth (4 cm for infants, 5 cm for children). (Option C ruled out) Rate: 100-120 compressions per minute.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3515044/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10685309/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A 55-year-old male is found unresponsive and without a pulse. Emergency responders are activated, and advanced cardiac life support (ACLS) protocols are initiated. Which of the following steps should be prioritized immediately after confirming cardiac arrest? (Q847271)

A. Administer epinephrine (1 mg every 3-5 minutes)

B. Ensure proper airway management using bag-mask ventilation

C. Initiate high-quality chest compressions at a rate of 100-120 per minute

D. Deploy an Automated External Defibrillator (AED)

Correct Answer: C. Initiate high-quality chest compressions at a rate of 100-120 per minute

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Initiate high-quality chest compressions at a rate of 100-120 per minute : High-quality chest compressions should be started immediately after confirming cardiac arrest to improve chances of survival. Key Steps in ACLS 1. Early Recognition and Activation 2. High-Quality Chest Compressions (Option C) 3. Early Defibrillation (Option D ruled out) 4. Airway Management (Option B ruled out) 5. Drug Administration (Option A ruled out) 6. Identify and Treat Reversible Causes Post-Resuscitation Care 8. Continuous Quality Improvement

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5523088/

↑ *Back to this question in Part A*

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Q7: A healthcare provider is managing a patient with cardiac arrest due to pulseless ventricular tachycardia. Which of the following is a key advantage of using manual defibrillators in this scenario? (Q847272)

A. They are easier to operate than Automated External Defibrillators (AEDs).

B. Manual defibrillators can allow the users to adjust energy levels based on their clinical judgement.

C. They can be used by bystanders.

D. They are used independently, without ECG monitoring.

Correct Answer: B. Manual defibrillators can allow the users to adjust energy levels based on their clinical judgement.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Manual defibrillators are crucial for treating cardiac arrest caused by ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT) by delivering controlled electric shocks to restore normal heart rhythm. One of the key advantages of manual defibrillators is the ability to synchronize shocks with the patient's heartbeat. AEDs are for bystanders; manual defibrillators are used by healthcare professionals in clinical settings. Defibrillators offer advanced features like energy adjustment. (Options A & C ruled out) Defibrillators incorporate ECG monitoring for continuous heart rhythm assessment. (Option D ruled out)

References:

https://my.clevelandclinic.org/health/treatments/23020-defibrillator

↑ *Back to this question in Part A*

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Q8: A 60-year-old man presents to the emergency department after being resuscitated from cardiac arrest. The medical team suspects a reversible cause and starts assessing possible factors. Which of the following pairs do not represent causes to be prioritized for immediate treatment based on their roles in causing cardiac arrest? (Q847273)

A. Hypovolemia and Tension Pneumothorax

B. Hyperkalemia and Acidosis

C. Drug Overdose and Cardiac Tamponade

D. Hyperglycemia and alkalosis

Correct Answer: D. Hyperglycemia and alkalosis

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: While Hyperglycemia (high blood sugar) is a significant metabolic disturbance, it is not a direct reversible cause of cardiac arrest compared to the other pairs. 5 H's of Cardiac Arrest 5 T's of Cardiac Arrest Hypovolemia (Option A ruled out) Hypoxia Hydrogen Ion (Acidosis) (Option B ruled out) Hyper-/Hypokalemia (Option B ruled out) Hypoglycemia Toxins (Option C ruled out) Tamponade (Cardiac) (Option C ruled out) Tension Pneumothorax (Option A ruled out) Thrombosis (Coronary and Pulmonary) Trauma

References:

https://acls-algorithms.com/hsandts/

https://pubmed.ncbi.nlm.nih.gov/32504821/

↑ *Back to this question in Part A*

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Q9: A 60-year-old male patient presents to the emergency department with palpitations and shortness of breath. Upon assessment, he is found to have narrow-complex tachycardia at a rate of 180 beats per minute. He reports no chest pain or hypotension. What is the most appropriate initial management for this stable patient? (Q847274)

A. Synchronized cardioversion

B. Administration of amiodarone

C. Administration of adenosine

D. Observation and reassurance

Correct Answer: C. Administration of adenosine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Administration of adenosine is the first-line treatment for stable narrow-complex tachycardia. Adenosine acts quickly to potentially terminate the arrhythmia by interrupting the reentrant pathways, making it the most appropriate choice in this scenario. Narrow-complex : QRS < 0.12 seconds Wide-complex : QRS ≥ 0.12 seconds Synchronized cardioversion (Option A): Used in unstable patients with narrow complex tachycardias. Administration of amiodarone (Option B): Antiarrhythmics, e.g., amiodarone aare used in managing wide

complex tachycardia Observation and reassurance (Option D) : This is insufficient management for a tachycardic patient, even if stable. Immediate treatment is warranted.

References:

https://www.ncbi.nlm.nih.gov/books/NBK482173/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5523088/

↑ *Back to this question in Part A*

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Q10: A 68-year-old man presents to the emergency department with palpitations, dizziness, and chest discomfort. His vital signs are blood pressure 75/50 mmHg, heart rate 190 beats per minute, and oxygen saturation 94% on room air. He appears pale and diaphoretic. ECG is shown below. What is the most appropriate next step in the management of this patient? {{caption_text}} (Q847275)

A. Administer IV amiodarone 150 mg over 10 minutes

B. Perform immediate unsynchronized defibrillation

C. Perform immediate synchronized cardioversion

D. Administer intravenous adenosine 6 mg



Correct Answer: C. Perform immediate synchronized cardioversion

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical presentation and ECG suggest a monomorphic wide-complex ventricular tachycardia with a regular rhythm is consistent with a diagnosis of an unstable monomorphic ventricular tachycardia. The first line of treatment for unstable VT with a pulse is synchronized cardioversion. Administer IV amiodarone 150 mg over 10 minutes (Option A): It is not the first-line treatment in a patient with hemodynamic instability and shock. Immediate cardioversion is preferred in unstable patients. Perform immediate unsynchronized defibrillation (Option B): Defibrillation is indicated for pulseless VT or ventricular fibrillation (VF). This patient has a wide-complex tachycardia with a pulse, making synchronized cardioversion the appropriate approach. Administer intravenous adenosine 6 mg (Option D): Adenosine is used to treat stable, regular, monomorphic wide complex tachycardia with a pulse. This patient is unstable with pulse making synchronized cardioversion the appropriate approach.

References:

Miller's Anesthesia, Edition 9, Pages 2726, 2727

https://cpr.heart.org/-/media/CPR-Files/CPR-Guidelines-Files/Algorithms/AlgorithmACLS_Tachycardia_200612.pdf?sc_lang=en

https://cpr.heart.org/-/media/CPR-Files/CPR-Guidelines-Files/Algorithms/AlgorithmACLS_CA_200402.pdf?sc_lang=en

↑ *Back to this question in Part A*

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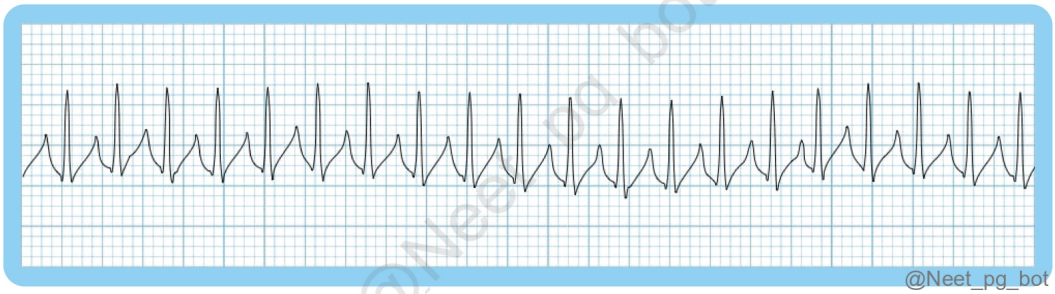
Q11: A 35-year-old woman presents to the emergency department with palpitations that started suddenly 30 minutes ago. She reports feeling lightheaded but denies chest pain or shortness of breath. Her vital signs show a heart rate of 180 beats per minute, blood pressure of 120/80 mmHg, and oxygen saturation of 96% on room air. ECG is shown below. What is the most appropriate initial management? {{caption_text}} (Q847276)

A. Immediate synchronized cardioversion

B. Intravenous adenosine 6 mg push

C. Intravenous amiodarone 150 mg over 10 minutes

D. Perform carotid sinus massage

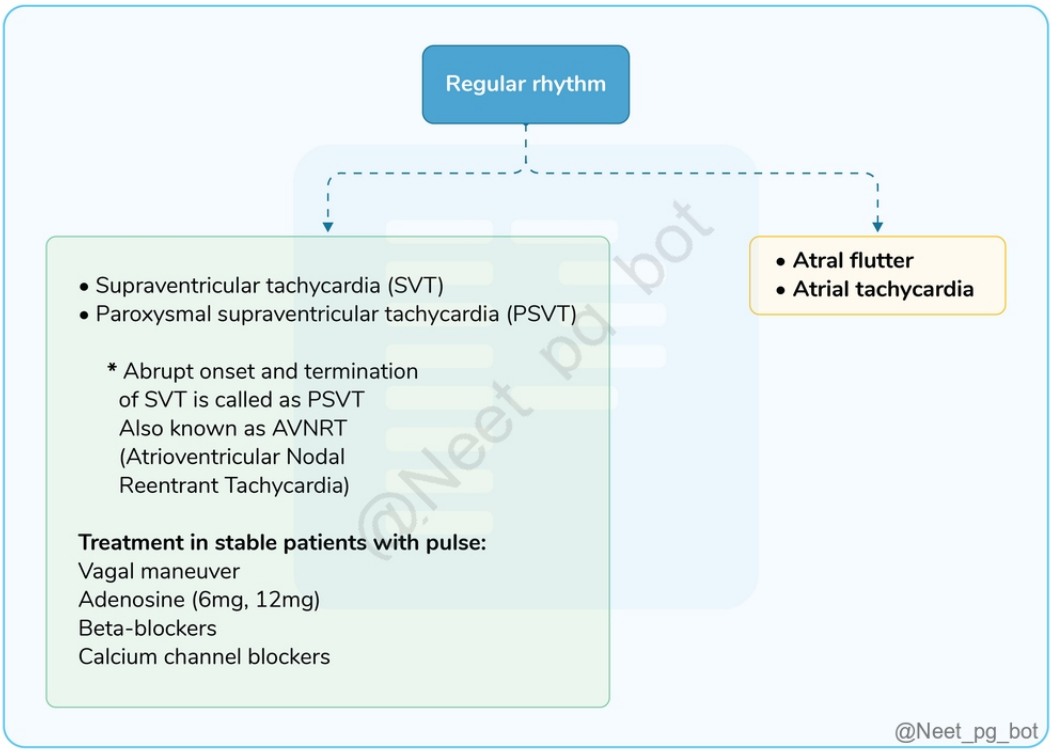


Correct Answer: D. Perform carotid sinus massage

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given ECG suggests narrow complex tachycardia without discernible P waves. The patient is likely experiencing stable supraventricular tachycardia (SVT). Initial management for stable SVT includes vagal maneuvers such as carotid sinus massage or the Valsalva maneuver. Narrow complex tachycardia (QRS■0.12 second): They arise above the ventricles Types: Regular and irregular rhythm Immediate synchronized cardioversion (Option A): In this case, the patient is hemodynamically stable with a blood pressure of 120/80 mmHg, no chest pain, and no shortness of breath. Therefore, synchronized cardioversion is unnecessary as a first-line treatment in this stable scenario. Intravenous adenosine 6 mg push (Option B): It is the next step after vagal manoeuvres fail in SVT. Intravenous amiodarone 150 mg over 10 minutes (Option C): It is not a first-line treatment for narrow-complex tachycardia like SVT in a stable patient.



References:

https://cpr.heart.org/-/media/CPR-Files/CPR-Guidelines-Files/Algorithms/AlgorithmACLS_Tachycardia_200612.pdf?sc_lang=en

Harrison's Principle of Internal Medicine, Edition 21, Pages 1888, 1889, 1904-07

↑ *Back to this question in Part A*

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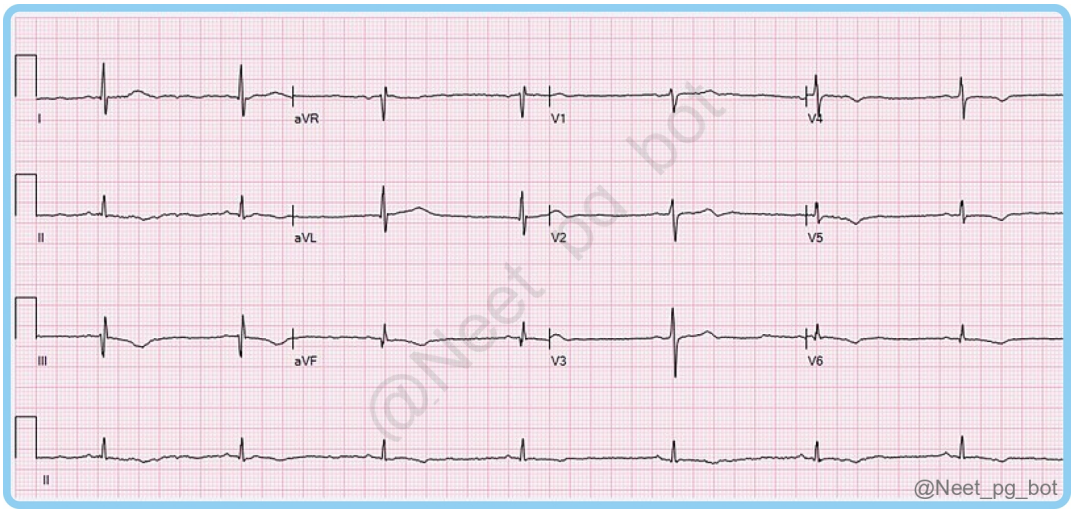
Q12: A 65-year-old man with a history of coronary artery disease and heart failure presents to the emergency department after experiencing lightheadedness and near syncope. On examination, he is alert but pale, with a heart rate of 43 beats per minute and a blood pressure of 80/50 mmHg. The ECG is shown below. He remains hypotensive and symptomatic despite the IV administration of a maximum dose of atropine. What is the most appropriate next step in the management of this patient? {{caption_text}} (Q847277)

A. Epinephrine IV bolus

B. Amiodarone IV infusion

C. Dopamine IV infusion

D. Digoxin IV bolus

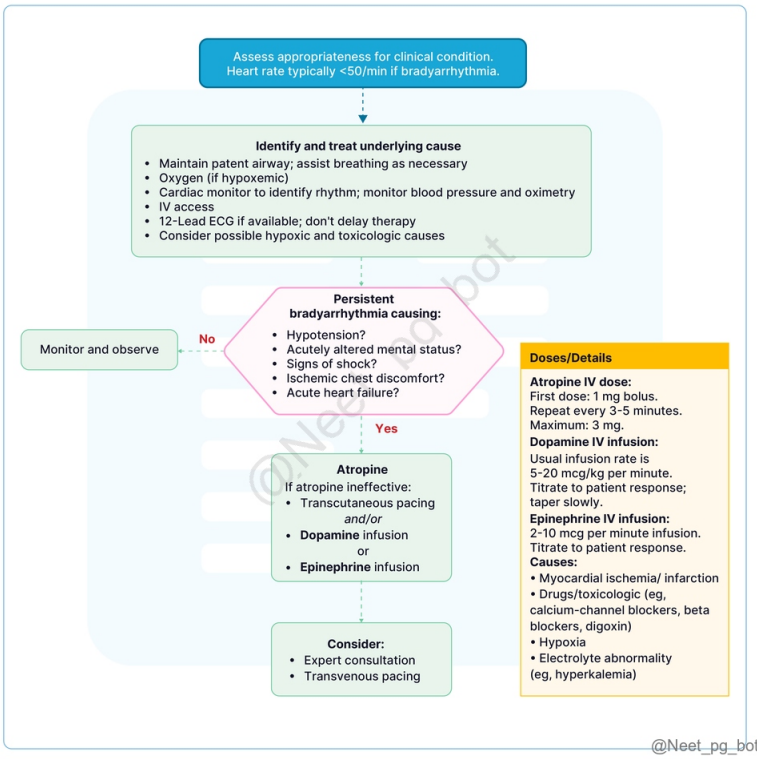


Correct Answer: C. Dopamine IV infusion

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical presentation and ECG suggesting sinus bradycardia without evidence of heart block are consistent with symptomatic sinus bradycardia with hypotension. After atropine fails, the next step in the management is dopamine infusion. Adult bradycardia algorithm Epinephrine IV bolus (Option A): The recommendation is IV infusion and not as a bolus administration of the drug. Amiodarone IV infusion (Option B) and digoxin IV bolus (Option D): They are not used in treating bradyarrhythmias.



References:

Miller's Anesthesia, Edition 9, Pages 2724, 2725, 2726, 2729, 2730

↑ *Back to this question in Part A*

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Q13: A 58-year-old man is found unresponsive and pulseless at home. Paramedics initiate CPR and provide bag-mask ventilation. Upon arrival at the emergency department, the patient is intubated. IV access is delayed due to difficult peripheral access, and intraosseous access is not immediately available. The decision is made to administer drugs via the endotracheal tube. Which of the following drugs is appropriate for endotracheal administration during cardiac arrest? (Q847278)

A. Amiodarone

B. Epinephrine

C. Adenosine

D. Atropine

Correct Answer: B. Epinephrine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Epinephrine can be administered via the endotracheal route if IV or IO access is not available during cardiac arrest. The recommended endotracheal dose is generally 2 to 2.5 times the intravenous dose. Drugs with good tracheal absorption (“NAVEL” mnemonic): N aloxone: Used for opioid overdose reversal. A tropine: Historically used for bradycardia (though less common in modern arrest protocols). V asopressin: A potent vasoconstrictor (no longer standard in many ACLS guidelines but ET-compatible). E pinephrine: The primary medication for pulseless arrest (VF/pVT, PEA, and Asystole). L idocaine: An anti-arrhythmic used for refractory VF or pulseless VT. What Makes a Drug Suited for Tracheal Absorption?: For a drug to be effective when squirted down an ET tube, it must successfully cross the alveolar-capillary membrane to reach the systemic circulation. Several physicochemical properties determine this: Lipid Solubility: The alveolar lining is rich in lipids. Drugs that are lipid-soluble (lipophilic) pass through these cell membranes much more easily than water-soluble (hydrophilic) drugs. Molecular Weight: Smaller molecules diffuse across the membrane faster than large, complex proteins or bulky compounds. pH and Ionization: Non-ionized (uncharged) forms of a drug cross membranes more readily. The local pH of the lung environment can affect how much of the drug remains in this "absorbable" state. Potency: Because absorption via the lungs is unpredictable and often incomplete, the drug must be potent enough to work even if only a fraction reaches the bloodstream. This is why ET doses are typically 2 to 2.5 times higher than IV doses. Amiodarone (Option A) and Adenosine (Option C) : They are not suitable for the endotracheal route of administration. Atropine (Option D): It can be administered via the endotracheal route but it is not used according to the recent ACLS guidelines in the event of a cardiac arrest.

References:

https://www.sciencedirect.com/science/article/abs/pii/B9780323341257000541

https://pubmed.ncbi.nlm.nih.gov/12351290/

↑ *Back to this question in Part A*

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Q14: A 70-year-old man with a history of ischemic cardiomyopathy (ejection fraction 25%) and a previous history of myocardial infarction presents to the emergency department with dizziness, palpitations, and mild breathlessness. On arrival, his heart rate is 130 beats per minute, and his blood pressure is 100/64 mmHg. His ECG is shown below. Which among the following options is the most appropriate in the

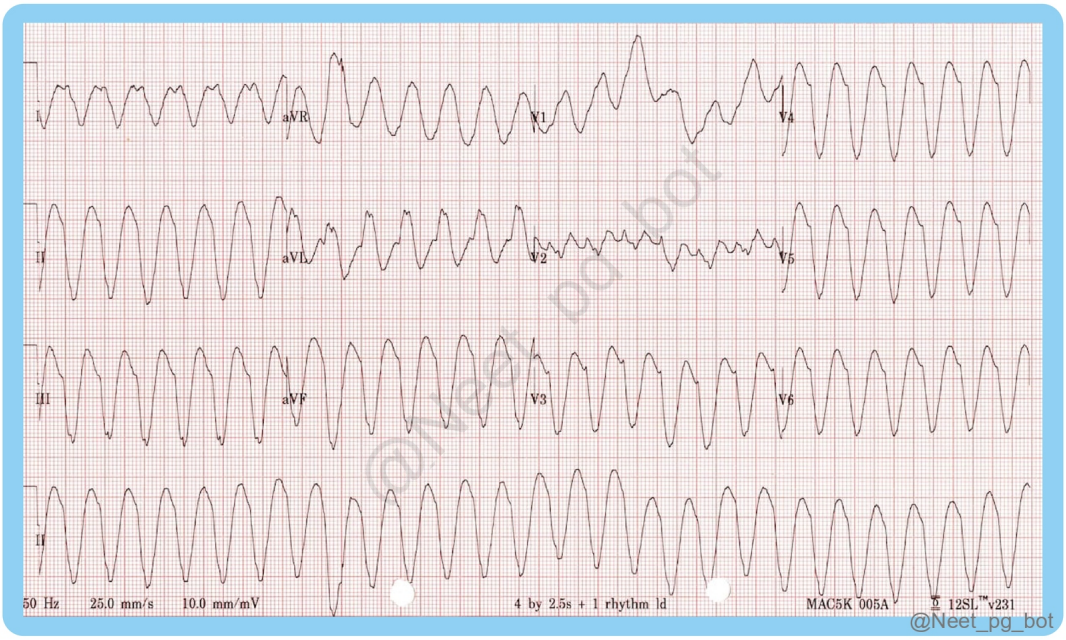
management of this patient? {{caption_text}} (Q847279)

A. Intravenous amiodarone 150 mg over 10 minutes

B. Adenosine 12 mg IV push

C. Intravenous lidocaine 1 mg/kg

D. Intravenous magnesium sulfate 2 g



Correct Answer: A. Intravenous amiodarone 150 mg over 10 minutes

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical presentation and ECG are suggestive of a stable, monomorphic wide-complex tachycardia, consistent with ventricular tachycardia (VT). Amiodarone 150 mg IV over 10 minutes, followed by 1 mg/min infusion for 6 hours is the antiarrhythmic of choice for hemodynamically stable monomorphic ventricular tachycardia (VT) with impaired cardiac function (EF<45%). Adenosine 12 mg IV push (Option B): It is used in stable, regular, monomorphic, wide complex tachycardia and narrow complex tachycardias (stable and unstable) and the initial dose is 6mg IV push, followed by 12mg IV push. Intravenous lidocaine 1 mg/kg (Option C): It can also be used to treat VT, especially in ischemic heart disease, but amiodarone is generally preferred due to its broader antiarrhythmic effects and better safety profile. Intravenous magnesium sulfate 2 g (Option D): It is used to treat polymorphic VT associated with QT prolongation (torsades de pointes).

References:

Resuscitation Council UK Advanced Life Support, 8th edition, Page 137

Miller's Anesthesia, 9th Edition, - Pages 2729, 2730

Morgan’s and Mikhail’s Anaesthesiology, 7th Edition , Pages 2396, 2397

↑ *Back to this question in Part A*

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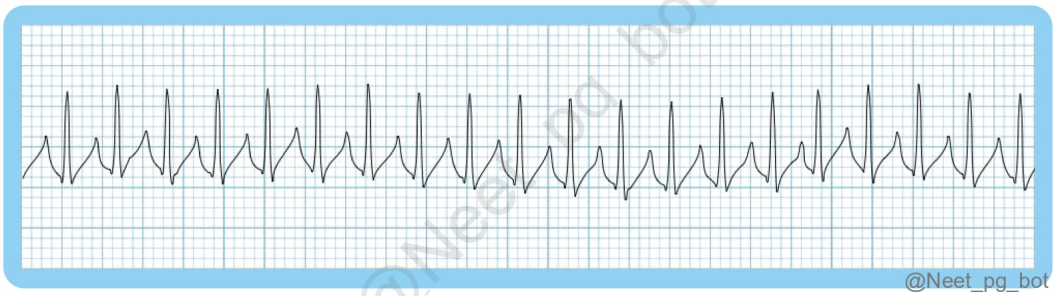
Q15: A 54-year-old woman presents to the emergency department with palpitations, dizziness, and mild shortness of breath. Her vital signs are heart rate of 150 bpm, blood pressure of 124/80 mmHg, and oxygen saturation of 95% on room air. The rhythm strip of the ECG is shown below. Vagal maneuvers are attempted without success. You decide to administer adenosine. Which of the following is the most appropriate initial dose of adenosine, and what is the mechanism of its action? {{caption_text}} (Q847280)

A. 6 mg IV push, briefly depresses sinus node and AV node conduction

B. 12 mg IV push, briefly depresses sinus node and AV node conduction

C. 6 mg IV push, increases AV node conduction and depresses sinus node

D. 12 mg IV push, decreases AV node conduction and increases sinus node rate



Correct Answer: A. 6 mg IV push, briefly depresses sinus node and AV node conduction

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical presentation and ECG are suggestive of stable, narrow-complex regular tachycardia consistent with supraventricular tachycardia (SVT). Adenosine is an endogenous purine nucleoside that temporarily depresses the sinus node and AV node function, essential in treating regular, narrow-complex tachycardias like SVT. The initial dose of Adenosine is 6 mg IV should be administered rapidly, followed by a 20 mL saline flush.

References:

Miller's Anesthesia, 9th Edition, Page 2729

https://www.ahajournals.org/doi/pdf/10.1161/01.CIR.82.5.1854

↑ *Back to this question in Part A*

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• [08_Cardiopulmonary Cerebral Resuscitation] 015 Previous Year Questions

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[08_Cardiopulmonary Cerebral Resuscitation] 015 Previous Year Questions — Quick Jump

Q1 (p. 451)	*Q2 (p. 452)*	*Q3 (p. 453)*	*Q4 (p. 453)*	*Q5 (p. 454)*	*Q6 (p. 460)*
Q7 (p. 461)	*Q8 (p. 462)*	*Q9 (p. 463)*	*Q10 (p. 464)*	*Q11 (p. 465)*	*Q12 (p. 466)*
Q13 (p. 467)	*Q14 (p. 468)*	*Q15 (p. 470)*	*Q16 (p. 471)*	*Q17 (p. 474)*	*Q18 (p. 474)*
Q19 (p. 475)	*Q20 (p. 476)*	*Q21 (p. 477)*	*Q22 (p. 478)*	*Q23 (p. 479)*	

Q1: What is the specific action being demonstrated in the provided image? (Q856034)

A. Head tilt, chin lift

B. Jaw thrust

C. Head extension

D. In line manual stabilisation



Correct Answer: A. Head tilt, chin lift

Explanation: Head tilt, chin lift is a technique used to open the airway in an unconscious patient. By tilting the head back and lifting the chin upwards, this maneuver helps to prevent the tongue from obstructing the airway. This is commonly used in basic life support (BLS) and first aid for unresponsive patients to ensure proper ventilation. Incorrect Options: Jaw thrust (Option B) : This technique is used when there is suspicion of a spinal injury and the head tilt, chin lift might exacerbate neck injury. It involves pushing the jaw forward to open the airway without tilting the head. Head extension (Option C) : This involves extending the neck backward beyond the neutral position, which may be used in specific cases, but it is not the same as the head tilt, chin lift. In-line manual stabilization (Option D) : This refers to stabilizing the neck and spine to prevent movement, especially when there is a concern of a cervical spine injury. It is not used to open the airway directly.

References:

Morgan and Mikhail's Clinical Anesthesiology, Edition 5, Pg 1232, 1235

↑ *Back to this question in Part A*

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Q2: In an emergency setting you encounter three patients simultaneously. Which of the following should you attend first? (Q879114)

A. 40 years old unconscious noisy breathing

B. 25 years old woman rapidly breathing and sweating

C. 40 year old male conscious with trousers soaked in blood

D. Girl crying loudly and inconsolably

Correct Answer: A. 40 years old unconscious noisy breathing

Explanation: In an emergency or triage scenario, patient management follows the ABC principle - Airway → Breathing → Circulation. A 40-year-old unconscious patient with noisy breathing suggests airway obstruction , most commonly due to tongue fall-back or aspiration . Airway obstruction is immediately life-threatening because oxygen cannot reach the lungs, leading rapidly to hypoxia and cardiac arrest. Therefore, airway management takes top priority and must be addressed before breathing or circulation issues. Incorrect Options: 25 years old woman rapidly breathing and sweating (Option B): Suggests respiratory distress or shock, but she is conscious and maintaining airway. Priority 2 – Breathing (after airway). 40 year old male conscious with trousers soaked in blood (Option C): Indicates active external bleeding but consciousness implies intact airway and breathing. Priority 3 – Circulation. Girl crying loudly and inconsolably (Option D): Crying indicates patent airway, adequate breathing, and perfusion. Lowest priority.

References:

Tintinallis Emergency Medicine 8th Edition, Page 2029

↑ *Back to this question in Part A*

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Q3: A patient has a road traffic accident and is now bleeding profusely. He is hypotensive and needs large volume replacement with IV fluids. What cannula gauge will you use in this patient? (Q859308)

A. 14 G

B. 13 G

C. 16 G

D. 18 G

Correct Answer: A. 14 G

Explanation: 14 G cannula has the thickest diameter with flow rate of 250-300ml is orange color coded cannula, which is used when large volume replacement with IV fluids is needed. Incorrect Options: 13G (Option B) cannula is not present. 16G (Option C) cannula is gray color coded which is commonly used in emergency replacement of fluid volume. 18G (Option D) cannula is green color coded and can also be used in emergency replacement of IV fluids.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC9226746/

↑ *Back to this question in Part A*

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Q4: Which of the following is required for the cannulation of a newborn? 24G needle 16G needle 5-mL syringe Adhesive tape Normal saline (Q855260)

A. 1, 3, 4, 5

B. 2, 3, 4, 5

C. 2, 4

D. 1, 4

Correct Answer: A. 1, 3, 4, 5

Explanation: Proper equipment, including a 24G needle and supportive materials like normal saline and adhesive tape, is critical for safe and effective cannulation in a newborn. 24G needle : The appropriate size for cannulating a newborn due to their small veins. Larger needles like 16G are unsuitable. 5-mL syringe : Often used to flush the cannula or administer medications. Adhesive tape : Essential to secure the cannula in place and prevent dislodgement. Normal saline : Used to flush the cannula and maintain patency. 16G needle (Option A) : This is too large and inappropriate for neonatal veins. (Options C & D) exclude essential items like saline, adhesive tape, or an appropriately sized needle are incomplete for neonatal cannulation.

References:

AIIMS Protocols in Neonatology 2019, 2nd Edition, Page 506

↑ *Back to this question in Part A*

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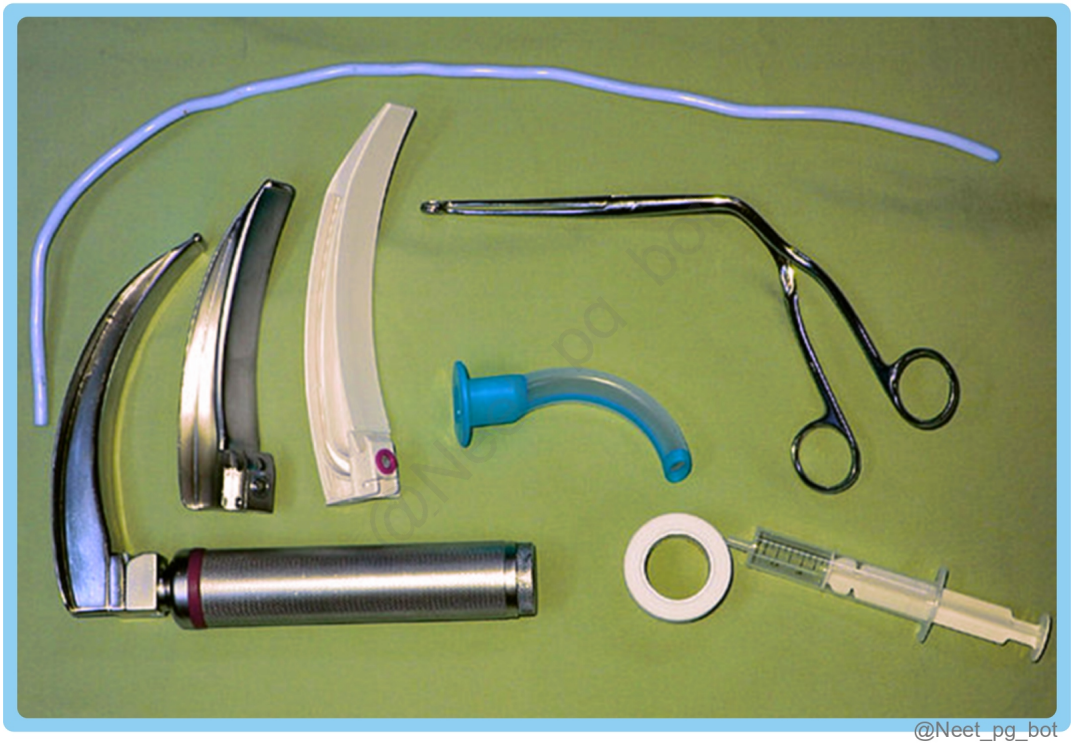
Q5: These instruments are utilized for: (Q856462)

A. Central line insertion

B. Arterial line insertion

C. Airway management

D. Umbilical catheter insertion



Correct Answer: C. Airway management

Explanation: The instruments on the tray are likely to include items such as endotracheal tubes, laryngoscopes, stylets, oral airways, suction catheters, and other devices used for airway assessment and intervention. These strongly suggest that the instruments are used for airway management. Airway management involves various techniques and tools to establish and maintain a patient's airway, ensuring adequate oxygenation and ventilation. Macintosh Laryngoscope Miller Laryngoscope McCoy Laryngoscope Blade Curved shape {{caption_text}} Straight shape {{caption_text}} Curved with levering tip {{caption_text}} Use In adults In children (large epiglottis) It can be used for both adults and children. Nasopharyngeal airway Guendel airway (Oropharyngeal) Placed through nose Placed through mouth Prevents back falling of tongue Prevents back falling of tongue Size is calculated by distance between tip of the nose and tragus {{caption_text}} Size is calculated by distance between angle of mouth and tragus {{caption_text}} Contraindicated in skull fracture and bleeding disorders Contraindicated in absence of gag reflex {{caption_text}} {{caption_text}} Central line insertion (Option A): I t refers to the placement of a catheter into a large central vein, such as the subclavian vein or internal jugular vein. The instruments used for this procedure typically include a needle, guidewire, dilators, and catheterization kit. The image provided does not correspond to instruments commonly used for central line insertion. Arterial line insertion (Option B): Arterial line insertion involves the placement of an arterial catheter to monitor blood pressure continuously and obtain arterial blood samples. The instruments used for arterial line insertion include a needle, guidewire, dilators, and arterial catheterization kit. The image does not match the instruments commonly used for arterial line insertion. Umbilical catheter insertion (Options D): Umbilical catheter insertion refers to the placement of a catheter into the umbilical artery or vein in newborns for medical purposes. The instruments used for this procedure typically include umbilical catheters, catheterization tray, and securing devices. The image provided does not correspond to the instruments commonly used for umbilical catheter insertion.


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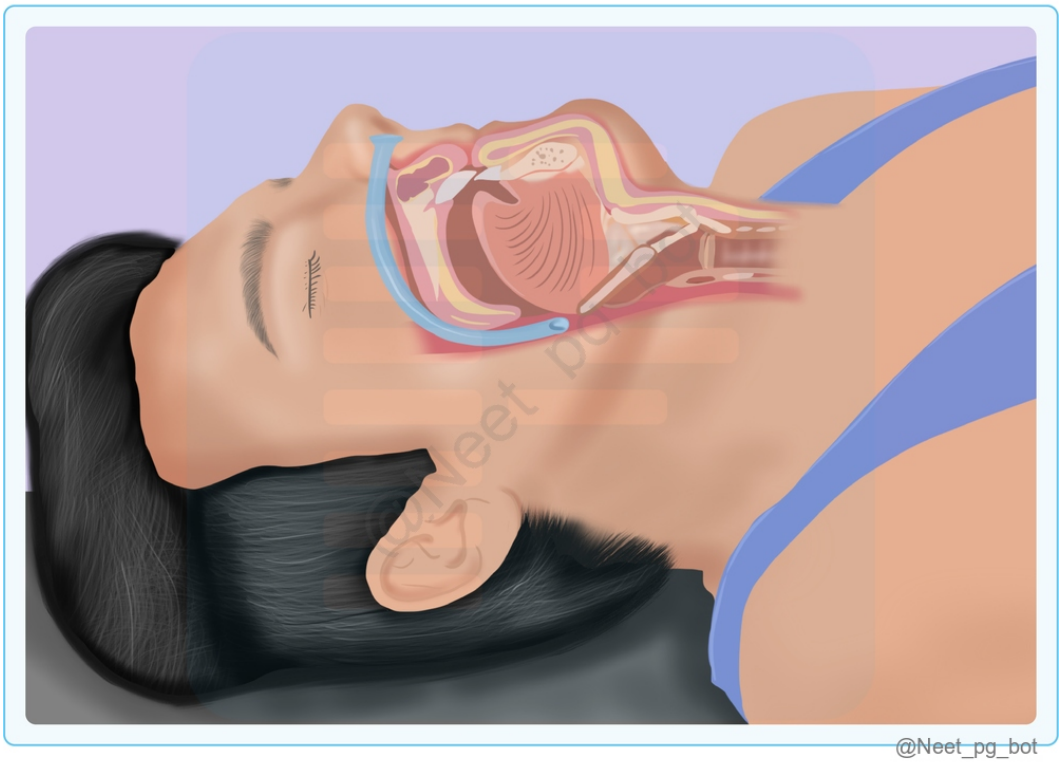

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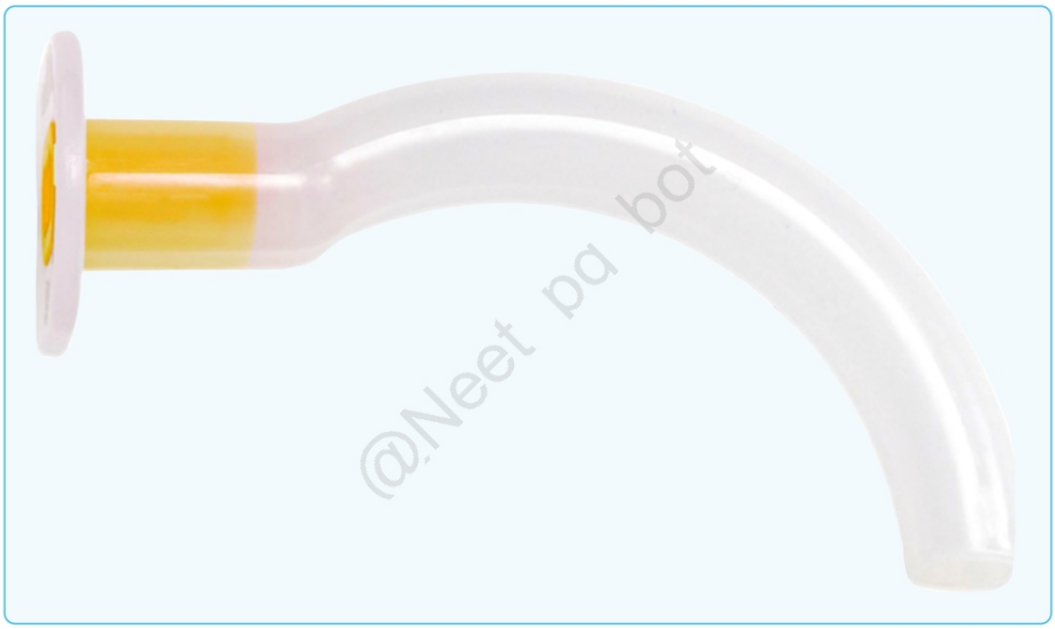


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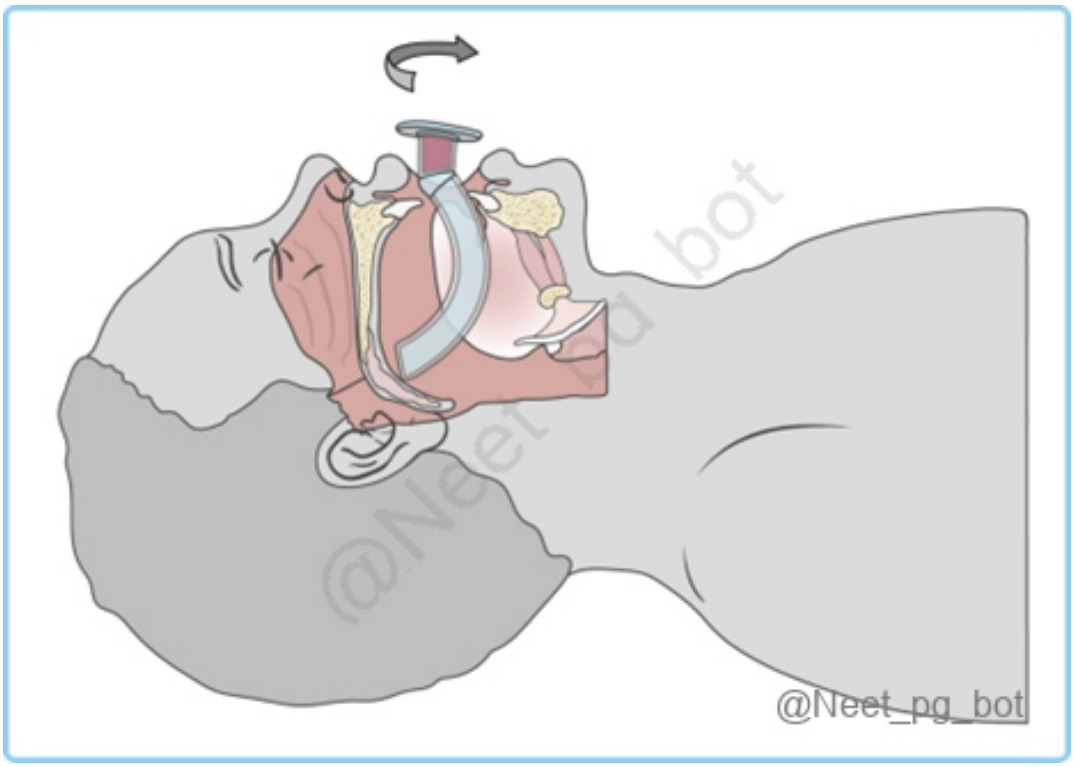




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References:

Miller’s Anesthesia, 9th edition, Pages 1394-1398, 1645

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pdf Pages 167, 175-76, 594, 1664

↑ *Back to this question in Part A*

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Q6: An 18-year-old boy is rushed to the emergency room after choking on a bone while eating. He is conscious and responsive, but unable to speak. What is the next appropriate step in management? (Q857564)

A. Bag and mask ventilation

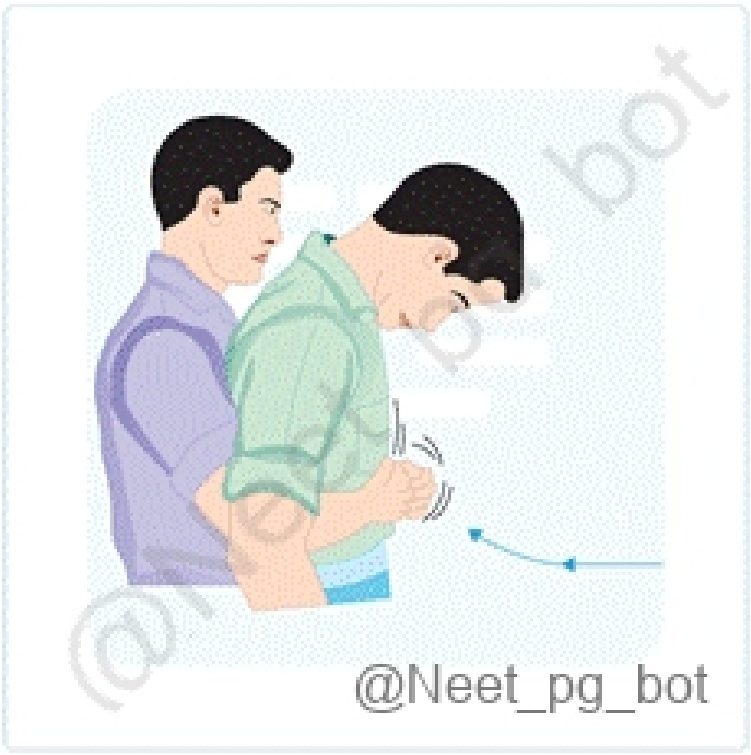
B. Endoscopic removal

C. Deliver 5 back slaps and 5 chest compressions

D. Perform Heimlich maneuver

Correct Answer: D. Perform Heimlich maneuver

Explanation: This patient is a conscious adult with a complete airway obstruction (unable to speak after choking). The immediate next step is the Heimlich maneuver (abdominal thrusts) . Abdominal thrusts create a sudden increase in intra-abdominal and intrathoracic pressure, helping to expel the foreign body . Heimlich Maneuver : Stand behind the patient. Place a fist above the umbilicus. Deliver forceful upward abdominal thrusts . Continue until the object is expelled or the patient becomes unresponsive. If the patient becomes unresponsive → start CPR . {{caption_text}} Bag and mask ventilation (Option A): Used only if the patient becomes unresponsive. Endoscopic removal (Option B): may be necessary if other methods fail or if the obstruction is not cleared by basic interventions, it may not be the initial step in managing a conscious patient with a clear airway obstruction. Deliver 5 back slaps and 5 chest compressions (Option C): Indicated for infants , not adults.



References:

https://www.ncbi.nlm.nih.gov/books/NBK531467/

↑ *Back to this question in Part A*

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Q7: Which statement in rapid sequence intubation is incorrect ? (Q855266)

A. Preoxygenation with 100% oxygen for 3 minutes is done

B. High–volume, low-pressure cuff is used

C. It is the first choice of treatment in cardiac arrest patients

D. The induction agent and muscle relaxant are given simultaneously

Correct Answer: C. It is the first choice of treatment in cardiac arrest patients

Explanation: Rapid sequence intubation (RSI) is not typically performed in cardiac arrest because such patients are usually unconscious, eliminating the need for an induction agent. Instead, bag-mask ventilation and immediate advanced airway placement are prioritized. RSI is primarily used in patients who require airway protection but are at risk of aspiration, not in cardiac arrest situations. Preoxygenation with 100% oxygen for 3 minutes is done (Option A) : This is correct. Preoxygenation is critical to ensure oxygen reserves during the apneic period of intubation. High–volume, low-pressure cuff is used (Option B) : This is correct. Such cuffs minimize the risk of airway trauma and provide an effective seal. The induction agent and muscle relaxant are given simultaneously (Option D) : This is correct. Administering these agents together minimizes the time to achieve intubation readiness.

References:

Miller’s Anaesthesia, 9th Edition, Page 1382

↑ *Back to this question in Part A*

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Q8: After a building collapse, a patient presents with airway obstruction and mouth filled with concrete debris. BP is 90/60 mmHg, HR 105/min. The given procedure is performed (image shown). Which of the following statements regarding this procedure is true? (Q866525)

A. It provides adequate ventilation for up to 6 hours

B. It must be followed by a formal tracheostomy

C. It allows for removal of large foreign bodies from the airway

D. It can be safely used for prolonged airway management without further intervention



Correct Answer: B. It must be followed by a formal tracheostomy

Explanation: The image depicts a needle cricothyroidotomy , an emergency airway procedure used when endotracheal intubation is not possible due to severe upper airway obstruction This technique provides temporary oxygenation via a large-bore needle inserted through the cricothyroid membrane, but it does not ensure adequate ventilation long-term due to high airway resistance. Therefore, it must be converted to a definitive airway (formal surgical cricothyroidotomy or tracheostomy) as soon as possible, usually within 30–45 minutes . It provides adequate ventilation for up to 6 hours (Option A): False - it's only for short-term oxygenation (max ~30–45 minutes), not hours. It allows for removal of large foreign bodies from the airway (Option C): False - it bypasses obstruction but cannot remove debris. It can be safely used for prolonged airway management without further intervention (Option D): False - prolonged use risks CO■ retention and inadequate ventilation.

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Q9: A patient undergoing surgery develops sudden deranged vitals following a failed attempt at subclavian vein catheterization. On examination, the trachea is shifted to one side and breath sounds are absent on the same side. What is the most likely diagnosis? (Q866921)

A. Bronchospasm

B. Tension pneumothorax

C. Pulmonary embolism

D. Aspiration pneumonitis

Correct Answer: B. Tension pneumothorax

Explanation: The patient's clinical presentation is a classic triad of signs and symptoms that strongly indicate a tension pneumothorax. A tension pneumothorax is a life-threatening condition that occurs when air enters the pleural space, but cannot escape, causing a one-way valve effect. The key findings are: Tracheal deviation: The trachea is shifted away from the affected side as the increasing pressure in the pleural space pushes the mediastinum to the opposite side. Absent breath sounds: Breath sounds are absent on the affected side due to the complete collapse of the lung. Hypotension and hypoxia: The high intrathoracic pressure compresses the major blood vessels, leading to a significant decrease in venous return, causing hypotension . This also impairs gas exchange, leading to hypoxia . Bronchospasm (Option A) would present with wheezing and difficulty breathing, but it would not cause tracheal deviation or absent breath sounds. Pulmonary embolism (Option C) typically presents with sudden-onset tachycardia and hypoxia. While it is a serious complication, it would not lead to absent breath sounds or tracheal deviation. The trachea would remain in a midline position. Aspiration pneumonitis (Option D) would present with symptoms like crackles, fever, and respiratory distress, but it is not a sudden, acute collapse of the lung that would cause tracheal shift and absent breath sounds.

References:

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↑ *Back to this question in Part A*

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Q10: A patient under anesthesia is found to be in a “cannot intubate, cannot ventilate” (CICV) scenario. What is the next best step in management? (Q866919)

A. Insert nasopharyngeal airway

B. Perform a cricothyroidotomy

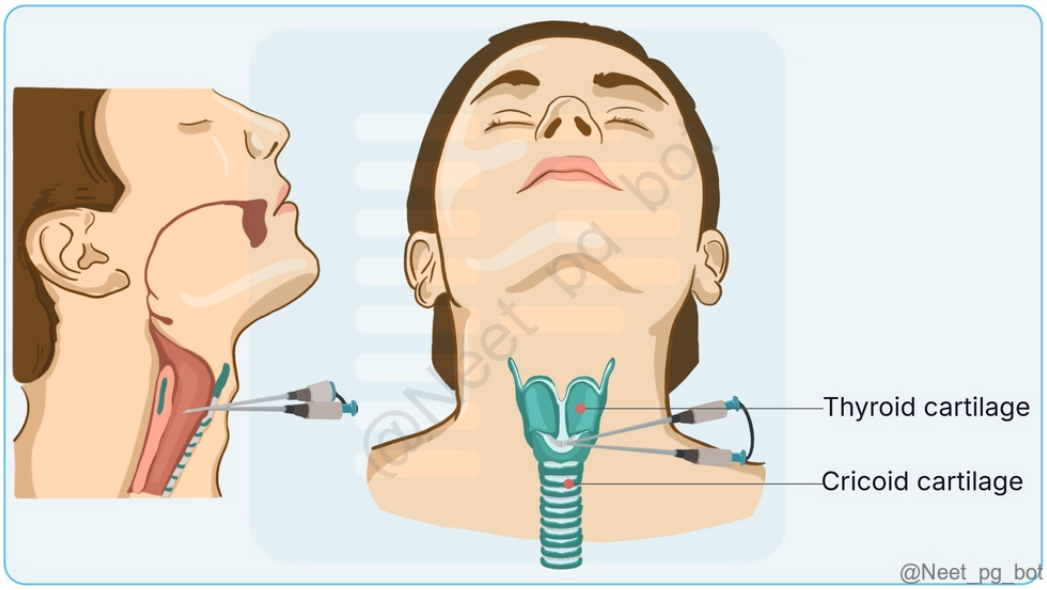
C. Insert a laryngeal mask airway

D. Perform a tracheostomy

Correct Answer: B. Perform a cricothyroidotomy

Explanation: A "cannot intubate, cannot ventilate" (CICV) scenario is a life-threatening emergency in which both endotracheal intubation and non-invasive ventilation (e.g., with a bag-valve-mask or supraglottic airway) have failed. This situation demands an immediate and decisive response to establish an airway. Immediate Surgical Airway: In a CICV situation, an immediate surgical airway is required to oxygenate the patient and prevent hypoxic brain injury or cardiac arrest. This must be performed as quickly as possible, ideally within 3-5 minutes of declaring the CICV state. Cricothyroidotomy: A cricothyroidotomy is the fastest and most accessible emergency surgical airway technique. It involves making a small incision through the skin and cricothyroid membrane to insert a tube directly into the trachea. Because it is performed at a superficial level and does not require complex

dissection, it is the method of choice in this time-critical situation. Incorrect Options: Insert nasopharyngeal airway (Option A) is a type of non-invasive airway adjunct that is used for partial airway obstruction. It is ineffective in a complete airway obstruction, which is characteristic of a CICV scenario. Insert a laryngeal mask airway (Option C) is a supraglottic airway device that should have already been attempted as part of the standard difficult airway algorithm before the declaration of a CICV situation. If it has failed, it is no longer a viable option. Perform a tracheostomy (Option D) is a surgical procedure to create a more permanent airway. It is a more complex and time-consuming procedure than a cricothyroidotomy and is therefore not the appropriate choice for an emergency, life-threatening situation like CICV.



References:

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↑ *Back to this question in Part A*

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Q11: Which of the following can be considered effective CPR? 1. Respiratory rate: 20-24 breaths per minute 2. Chest compressions: 100-120/min 3. Allow complete chest recoil 4. 5-6cm deep compression (Q856466)

A. 1,2,3 and 4

B. 1,2 and 4

C. 2,3 and 4

D. 1 and 2 only

Correct Answer: C. 2,3 and 4

Explanation: The CAB algorithm highlights the key elements needed to ensure high-quality CPR in BLS. Compressions (C) Position: Place the patient in a supine position on a firm surface. Site: Lower ■ rd of sternum Rate: 100 to 120 compressions per minute. (Statement 2) Depth: Compress 2 to 2.4 inches (5-6 cm); avoid exceeding 2.4 inches. (Statement 4) Compression-to-Ventilation Ratio: 30 compressions to 2 breaths (30:2). (Statement 1) Chest Recoil: Allow full recoil between compressions to optimize blood flow. (Statement 3) Interruptions: Minimize interruptions in compressions (<10 seconds). Chest Compression Fraction (CCF): The proportion of time spent performing chest compressions during CPR: Maintain a CCF ≥ 60%. For pregnant women: perform manual lateral uterine displacement (LUD) to relieve pressure on large abdominal vessels. Airway (A) Head Tilt-Chin Lift: Used to open the airway in patients without suspected neck trauma. Jaw Thrust: Preferred method, if neck trauma is suspected. The most common cause of airway obstruction in unconscious patients is the tongue falling back. Breathing (B) Rescue Breaths: Give 2 breaths after every 30 compressions. Method: Mouth-to-mouth or with a bag-mask device, ensuring chest rise with each breath. Breath Duration: Each breath should last about 1 second.

References:

American Heart Association, Basic life support provider manual- 2020, Part 4, page 19 - 23

↑ *Back to this question in Part A*

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Q12: While taking your morning stroll in the park, you come across an individual who is unconscious and lying on the ground. What would be the most appropriate course of action to take next from the given choices? (Q856776)

A. Check carotid pulse, start CPR, and call for help; Defibrillate if no pulse

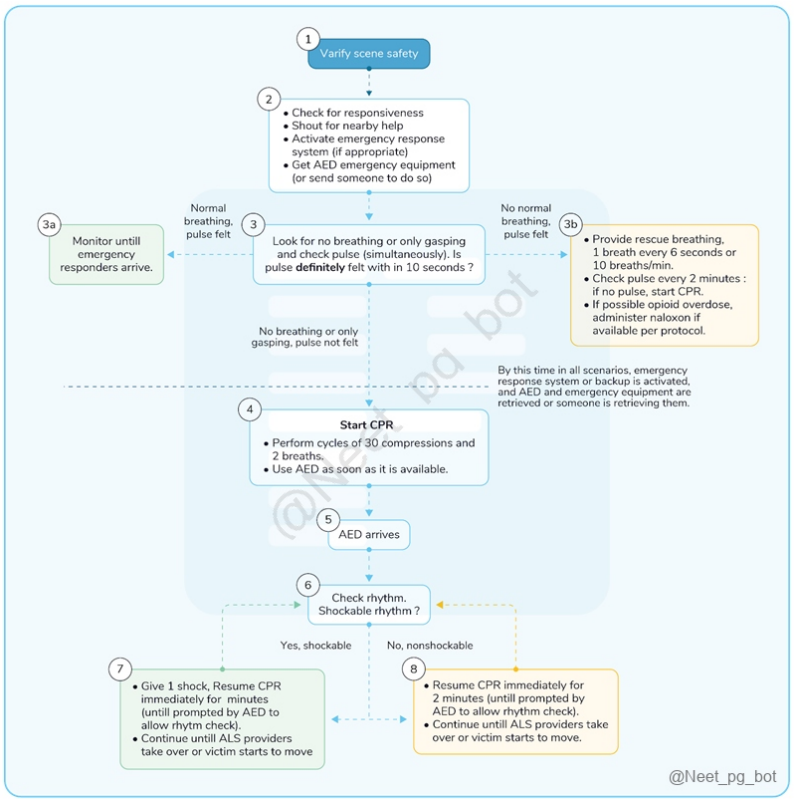
B. Call for help, check pulse, do CPR, defibrillate if no pulse

C. Observe

D. Ignore and continue to walk

Correct Answer: B. Call for help, check pulse, do CPR, defibrillate if no pulse

Explanation:



References:

American Heart Association, Basic life support provider manual- 2020, Part 4, page 15.

↑ *Back to this question in Part A*

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Q13: Which of the following must be avoided in post cardiac arrest resuscitation care? (Q852835)

A. Maintain MAP over 65

B. Maintain SpO2 above 94%

C. Revascularisation procedure if patient develops ST elevation post resuscitation

D. Bring the body temperature down to below 32 degrees, therapeutic hypothermia if unresponsive

Correct Answer: D. Bring the body temperature down to below 32 degrees, therapeutic hypothermia if unresponsive

Explanation: Targeted Temperature Management (TTM) is recommended between 32–36°C , but below 32°C is not advised due to potential risks like arrhythmias and coagulopathies. Therapeutic hypothermia (TTM) should be maintained at 32–36°C for at least 24 hours in comatose patients after cardiac arrest to reduce neurological damage. Excessive cooling (<32°C) increases complications such as bradycardia, electrolyte imbalances, and impaired coagulation. Post-Cardiac Arrest Care Post-cardiac arrest care focuses on stabilizing the patient, preventing secondary organ damage, and optimizing neurological outcomes. It includes hemodynamic management, targeted temperature management (TTM), oxygenation, and coronary intervention when indicated. Aspect Key Considerations Hemodynamic Support Maintain MAP ≥ 65 mmHg with fluids and vasopressors if needed to ensure adequate cerebral and organ perfusion. Oxygenation & Ventilation Target SpO■ between 94–98% to prevent hypoxia and hyperoxia-related injury. Avoid excessive ventilation (PaCO■ should be maintained at 35–45 mmHg). Targeted Temperature Management (TTM) Maintain temperature at 32–36°C for at least 24 hours in comatose patients to reduce neurological injury. Cooling below 32°C is not recommended due to increased risks of arrhythmias and coagulopathies. Coronary Revascularization Patients with ST elevation post-resuscitation should undergo urgent PCI to improve outcomes. Coronary angiography may also be considered in select non-ST elevation cases. Neurological Monitoring Continuous EEG and serial neurological assessments are crucial to detect seizures and assess prognosis. Glucose Control Maintain blood glucose between 140–180 mg/dL to prevent hyperglycemia-induced neuronal damage. Maintain MAP over 65 (Option A): Correct because maintaining adequate perfusion pressure (MAP ≥ 65 mmHg) is essential to prevent organ hypoxia. Maintain SpO■ above 94% (Option B): Correct because post-resuscitation oxygenation should be between 94–98% to avoid both hypoxia and hyperoxia toxicity . Revascularisation procedure if patient develops ST elevation post resuscitation (Option C): Correct because emergency PCI should be done in post-cardiac arrest patients with STEMI to improve survival.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC4959439/

https://pmc.ncbi.nlm.nih.gov/articles/PMC4780335/

https://pmc.ncbi.nlm.nih.gov/articles/PMC5523091/

↑ *Back to this question in Part A*

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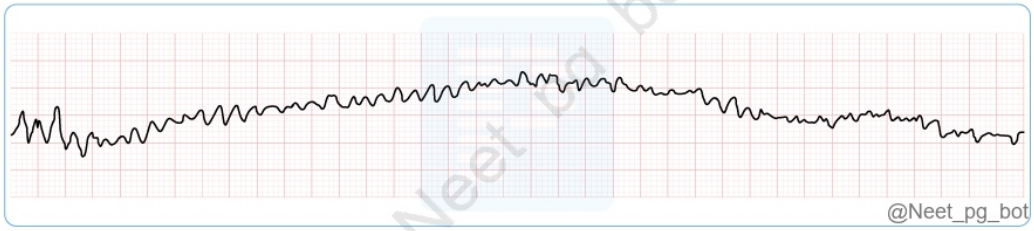
Q14: An unresponsive patient in ambulance on attachment of monitors showed following rhythm. What should be done immediately? (Q857061)

A. Check for pulse and breathing

B. Chest compressions and defibrillation

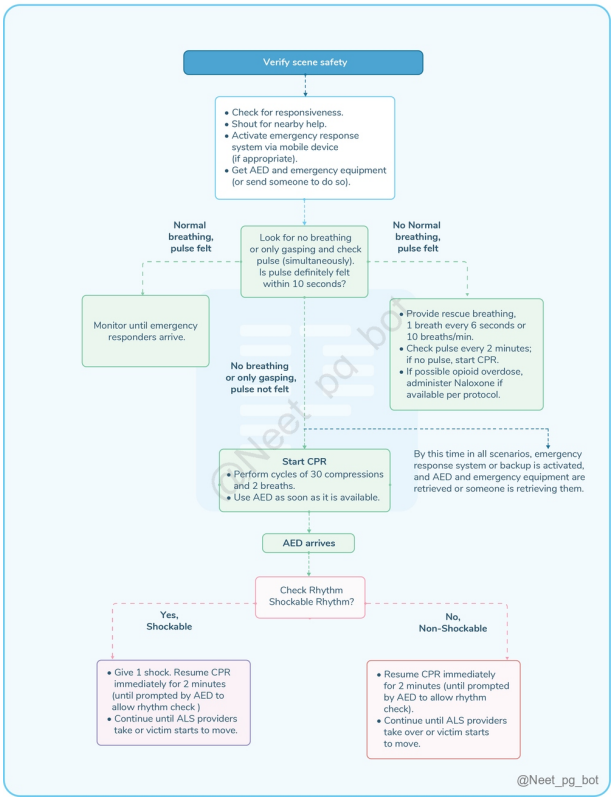
C. Put the patient in left lateral position

D. Cardioversion



Correct Answer: B. Chest compressions and defibrillation

Explanation: The rhythm in the ECG image is ventricular fibrillation (VF). This is a life-threatening arrhythmia characterized by chaotic and disorganized electrical activity in the ventricles, leading to the inability of the heart to pump blood effectively. For an unresponsive patient with ventricular fibrillation , the immediate step is: Chest compressions and defibrillation. Steps in Basic Life Support Skills: Check for pulse and breathing (Option A): While checking for pulse and breathing is crucial when assessing an unresponsive patient, in this case, the ECG already shows ventricular fibrillation, a shockable rhythm that implies cardiac arrest. There is no need to check for a pulse if the patient is unresponsive with this rhythm because VF always requires immediate chest compressions and defibrillation. Delaying treatment to check for a pulse could worsen outcomes. Put the patient in the left lateral position (Option C): The left lateral position is used to prevent aspiration in cases like unconscious patients with an intact airway or during pregnancy to reduce pressure on the inferior vena cava. However, in a patient with ventricular fibrillation, there is no effective cardiac output, and this position provides no benefit. Immediate CPR and defibrillation are the only lifesaving actions. Cardioversion (Option D): Cardioversion is used for arrhythmias like atrial fibrillation, atrial flutter, or supraventricular tachycardia in a hemodynamically unstable patient. It is a synchronized procedure delivered at a specific point in the cardiac cycle. Ventricular fibrillation requires unsynchronized defibrillation, not cardioversion, as there is no organized electrical activity to synchronize with.



References:

American Heart Association, Basic Life Support Provider Manual- 2020, Part 4, page 15.

↑ *Back to this question in Part A*

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Q15: When should the indicated position be used during resuscitation? (Q855615)

A. Unconsciousness with pulse absent and breathing absent

B. Unconsciousness with pulse present and breathing absent

C. Unconsciousness with pulse and breathing present

D. Unconsciousness with pulse absent and breathing present



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Correct Answer: C. Unconsciousness with pulse and breathing present

Explanation: The given position (Recovery position) involves placing the patient on their side with the lower arm extended and the upper leg flexed at the hip and knee. This helps prevent the tongue from blocking the airway and allows secretions to drain from the mouth. It can help to maintain an open airway and improve ventilation. The given position is particularly useful in cases where the unconsciousness has been caused by alcohol or drug use, as

these substances can increase the risk of aspiration (inhaling vomit or other liquids) and airway obstruction. By maintaining an open airway, the given position can help to prevent these complications and improve oxygenation of the tissues. Unconsciousness with pulse absent and breathing absent (Option A): This situation indicates cardiac arrest and requires cardiopulmonary resuscitation (CPR), including chest compressions and rescue breaths. Unconsciousness with pulse present and breathing absent (Option B): This situation requires artificial ventilation to support oxygenation. Unconsciousness with pulse absent and breathing present (Option D): This is a highly unlikely combination physiologically, as breathing is typically absent if the heart has stopped. If it were to occur, it would require immediate assessment and intervention, not the recovery position.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC3161868/

↑ *Back to this question in Part A*

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Q16: Please identify the manoeuvre being executed in the image provided. (Q855612)

A. Head tilt, chin lift

B. Jaw thrust

C. Head extension

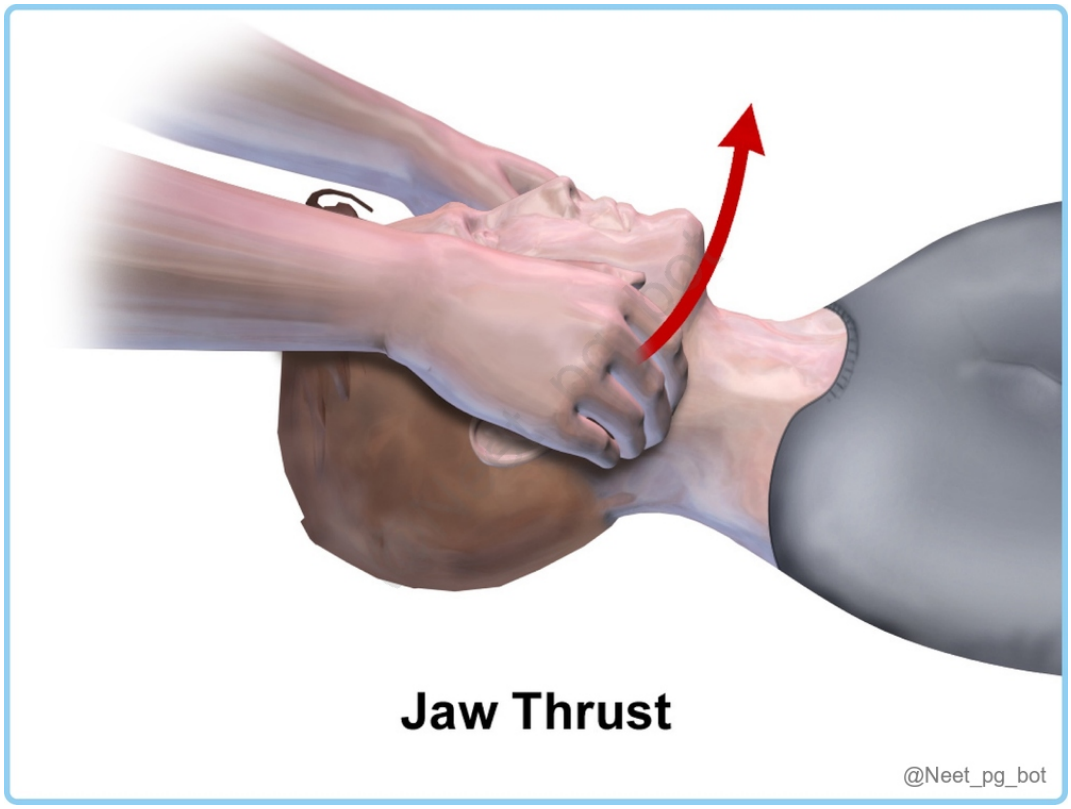
D. In-line manual stabilization



Correct Answer: A. Head tilt, chin lift

Explanation: The given manoeuvre is Head tilt and chin lift. Head Tilt Chin Lift Maneuver: The head is tilted back while lifting the chin upwards to prevent the tongue from obstructing the airway. Used to open the airway in an unconscious patient without suspected spinal injury. {{caption_text}} Jaw Thrust Maneuver: (Option B ruled out) The lower jaw is lifted forward by placing fingers behind the angle of the mandible, moving the tongue forward and clearing the airway without moving the neck. Used to open the airway in patients with suspected cervical spine injury. {{caption_text}} Head extension (Optio C): It involves tilting the head backward but without lifting the chin. It is not as effective as the head tilt, chin lift for airway opening and is generally not recommended alone as a maneuver for maintaining a patent airway. In-line manual stabilization (Option D): This technique is used to stabilize the cervical spine in patients with suspected spinal trauma, especially during airway management or intubation. The rescuer holds the patient’s head in a neutral position to prevent any cervical movement, which could worsen a spinal injury.





References:

American Heart Association, Basic life support provider manual- 2020, Part 4, pages 19 - 23.

↑ *Back to this question in Part A*

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Q17: In a 60-year-old patient who has just experienced a cardiac arrest, which of the following interventions is not a part of the Advanced Cardiovascular Life Support (ACLS) protocol? (Q820226)

A. Amiodarone

B. Defibrillation

C. Adrenaline

D. Soda Bicarbonate

Correct Answer: D. Soda Bicarbonate

Explanation: Correct Option D- Soda Bicarbonate: While sodium bicarbonate used to be a part of ACLS protocols in the past, its use has become more limited in recent guidelines. It was commonly used to correct acidosis (increased acidity) during cardiac arrest. However, current evidence suggests that routine use of sodium bicarbonate in cardiac arrest may not provide significant benefits and could potentially cause harm. Therefore, it is no longer routinely recommended in ACLS protocols, especially in cases of cardiac arrest due to non-hypoxic causes. Incorrect Options: Option A- Amiodarone: Amiodarone is included in the ACLS protocol and is used for the treatment of certain types of irregular heart rhythms, particularly ventricular fibrillation and ventricular tachycardia that are resistant to other interventions. It helps stabilize the heart's electrical activity. Option B- Defibrillation: Defibrillation is a critical component of the ACLS protocol. It involves delivering an electric shock to the heart to reset its electrical rhythm in cases of ventricular fibrillation or pulseless ventricular tachycardia, which are life-threatening arrhythmias that can lead to cardiac arrest. Option C- Adrenaline: Adrenaline (also known as epinephrine) is an essential medication in the ACLS protocol. It is used to stimulate the heart and blood vessels, increasing heart rate and blood pressure. It is administered during cardiac arrest to improve blood flow to vital organs.

References:

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↑ *Back to this question in Part A*

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Q18: Which of the following statements given below is incorrect regarding CPR in adults? (Q857324)

A. Depth of chest compression up to 5-6 cm

B. Allow adequate chest recoil

C. Ventilation: 22-25 breaths/min

D. Chest compression rate 100-120/min

Correct Answer: C. Ventilation: 22-25 breaths/min

Explanation: Ventilation rate should be 10-12 breaths/min. Clear the airway before provide rescue breaths. CPR is carried out at a ratio of 30:2, i.e. give 2 breaths after 30 chest compressions if one person is performing CPR. If two persons are performing CPR, give two breaths after every 15 chest compressions i.e, a ratio of 15:2. The CAB algorithm highlights the key elements needed to ensure high-quality CPR in BLS. Compressions (C) Position: Place the patient in a supine position on a firm surface. Site: Lower ■ rd of sternum Rate: 100 to 120 compressions per minute. (Option D ruled out) Depth: Compress 2 to 2.4 inches (5-6 cm); avoid exceeding 2.4 inches. (Option A ruled out) Compression-to-Ventilation Ratio: 30 compressions to 2 breaths (30:2). (Option C) Chest Recoil: Allow full recoil between compressions to optimize blood flow. (Option B ruled out) Interruptions: Minimize interruptions in compressions (<10 seconds). Chest Compression Fraction (CCF): The proportion of time spent performing chest compressions during CPR: Maintain a CCF ≥ 60%. For pregnant women: perform manual lateral uterine displacement (LUD) to relieve pressure on large abdominal vessels. Airway (A) Head Tilt-Chin Lift: Used to open the airway in patients without suspected neck trauma. Jaw Thrust: Preferred method, if neck trauma is suspected. The most common cause of airway obstruction in unconscious patients is the tongue falling back. Breathing (B) Rescue Breaths: Give 2 breaths after every 30 compressions. Method: Mouth-to-mouth or with a bag-mask device, ensuring chest rise with each breath. Breath Duration: Each breath should last about 1 second.

References:

American Heart Association, Basic life support provider manual- 2020, Part 4, page 19 - 23.

↑ *Back to this question in Part A*

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Q19: Which of the following is not an ideal step for effective CPR in adults? (Q839910)

A. 100 -120 compressions per minute

B. Depth of compression 2-3 cm

C. Compression to ventilation ratio - 30:2

D. Allow complete recoil in between compressions

Correct Answer: B. Depth of compression 2-3 cm

Explanation: Correct Option B - Depth of compression 2 to 3 cm: The depth of chest compression for effective CPR in adults is 5 to 6 cm (2 to 2.4 inches). A depth of 2 to 3 cm is insufficient for effective compressions. Incorrect Options: Option A - 100-120 compressions per minute: This is the recommended compression rate for effective CPR. Option C - Compression to ventilation ratio is 30:2: This signifies the correct ratio for adult CPR when performed by a single rescuer. Option D - Allow complete recoil in between compressions: Allowing complete chest recoil is essential to facilitate adequate venous return during CPR.

References:

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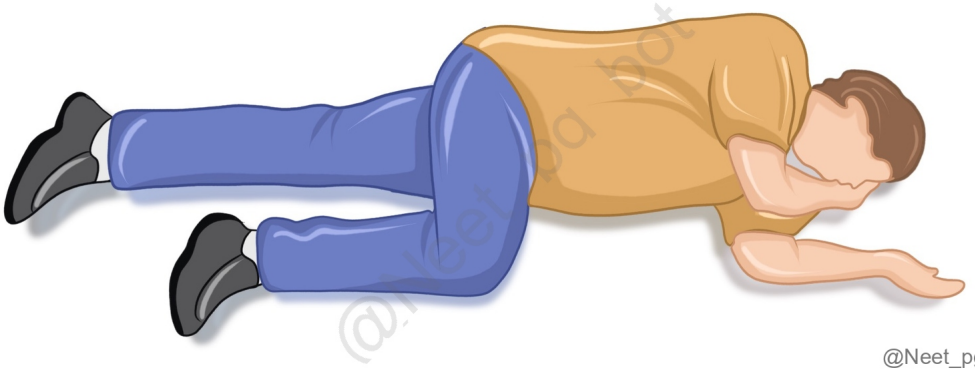
Q20: When do you put a victim in the following position? (Q844128)

A. Conscious patient with pulse & breathing present.

B. Unconscious patient with pulse & breathing present.

C. Unconscious patient with pulse present but no breathing.

D. Unconscious patient without pulse but breathing present.



Correct Answer: B. Unconscious patient with pulse & breathing present.

Explanation: Correct Option B - Unconscious patient with pulse and breathing present The image shows the recovery position (also known as the lateral recumbent position), which is used in first aid. The recovery position (lateral recumbent) is used for an unconscious patient who is breathing normally and has a detectable pulse . It keeps the airway open by letting the tongue fall forward, allows fluids (blood, vomit, secretions) to drain from the mouth, and reduces the risk of aspiration. It is not appropriate for someone who is breathing inadequately (they need rescue breaths/CPR) or for someone who is conscious and able to maintain their airway. When to use the Recovery Position Patient Status Recovery Position Used? Reason Conscious with pulse & breathing (Option A) No No need to alter position unless needed for comfort or other reasons. Unconscious with pulse & breathing

(Option B) Yes Prevents airway obstruction and aspiration. Unconscious with pulse but no breathing (Option C) No Requires rescue breathing or CPR , not recovery position. Unconscious without pulse but breathing (Option D) No This is physiologically unlikely; no pulse = no circulation.

References:

.https://pmc.ncbi.nlm.nih.gov/articles/PMC9065878/

https://pmc.ncbi.nlm.nih.gov/articles/PMC11293584/

↑ *Back to this question in Part A*

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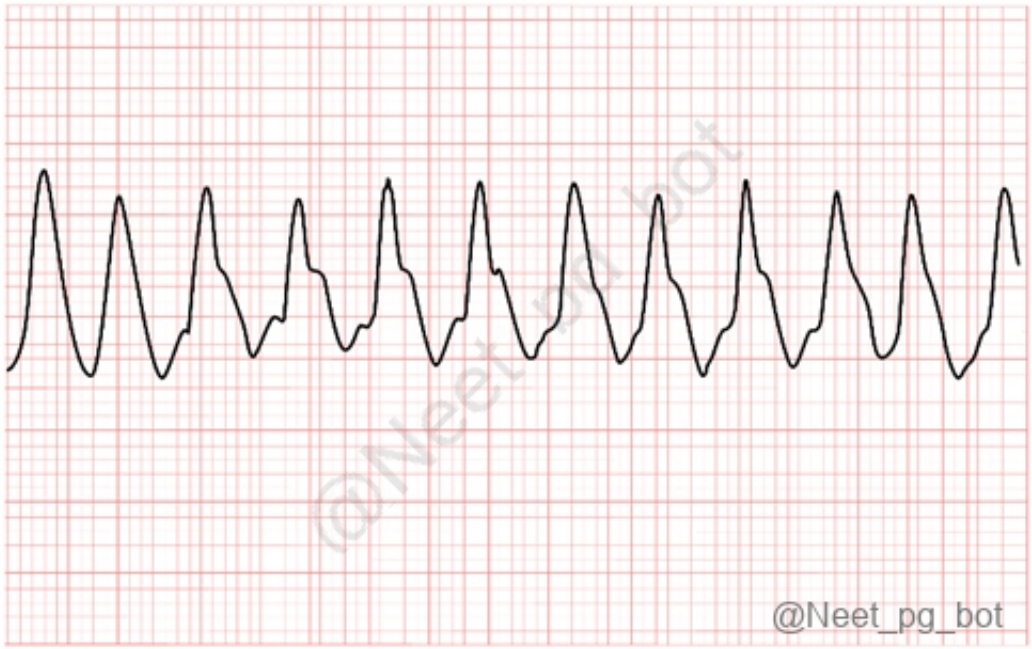
Q21: A patient presents with no pulse, and the ECG shows the following rhythm. What is the next appropriate step? (Q844103)

A. Defibrillate, check pulse and then perform CPR

B. Cardioversion

C. Defibrillate, perform CPR, and then check the pulse

D. Administer epinephrine



Correct Answer: C. Defibrillate, perform CPR, and then check the pulse

Explanation: Correct Option C - Defibrillate, perform CPR, and then check the pulse According to Advanced Cardiovascular Life Support (ACLS) guidelines, for a shockable rhythm like ventricular tachycardia, the first step is to defibrillate the patient. After delivering the shock, you immediately start CPR (Cardiopulmonary Resuscitation) to maintain blood circulation. Checking the pulse is done after completing a cycle of CPR to assess the effectiveness of the resuscitation efforts. Incorrect Options: Options A, B, and D are incorrect, as explained above.

↑ *Back to this question in Part A*

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Q22: According to the American Heart Association (AHA), what is the 6th link added to the chain of survival? (Q852507)

A. Rapid defibrillation

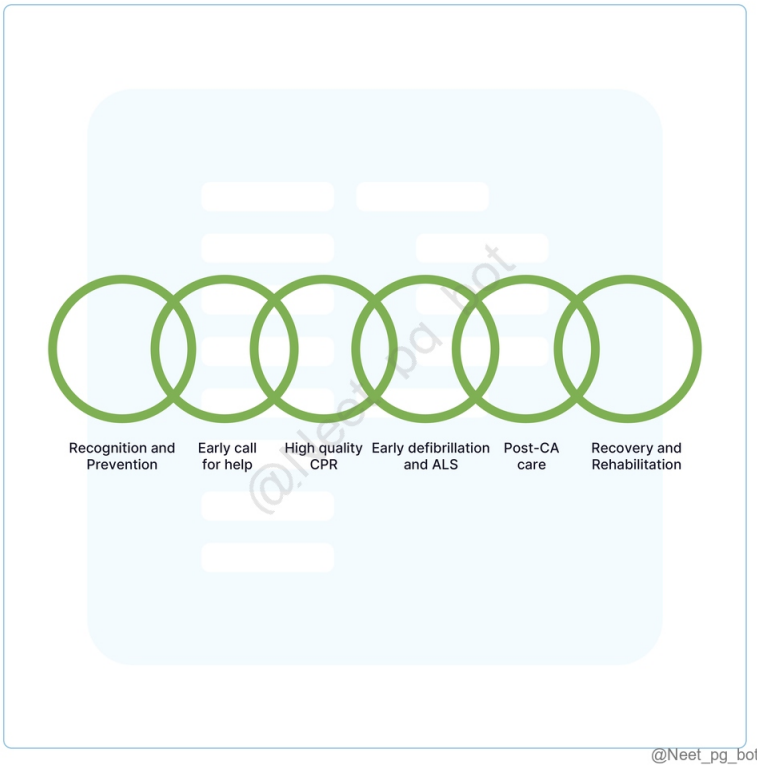
B. Recovery and rehabilitation

C. High-quality CPR

D. Advanced airway management

Correct Answer: B. Recovery and rehabilitation

Explanation: The American Heart Association (AHA) has expanded the Chain of Survival concept by adding a sixth link: recovery and rehabilitation . This addition reflects the growing recognition that survival extends beyond the immediate resuscitation period . The complete AHA Chain of Survival now includes: Early recognition and activation of emergency response Early CPR with an emphasis on chest compressions Rapid defibrillation Advanced life support Post-cardiac arrest care Recovery/rehabilitation Rapid defibrillation (Option A) is already included as the third link. Rapid defibrillation remains a critical component for improving survival in cardiac arrest, particularly for shockable rhythms like ventricular fibrillation and pulseless ventricular tachycardia. High-quality CPR (Option C) constitutes the second link. The AHA emphasizes the importance of proper chest compression depth, rate, allowing full chest recoil, and minimizing interruptions in CPR to optimize outcomes. Advanced airway management (Option D) is part of the fourth link (advanced life support) in the Chain of Survival. While airway management is an important component of resuscitation, the AHA guidelines emphasize that it should not interfere with or delay other critical interventions such as chest compressions and defibrillation.



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References:

American Heart Association Guidelines for Cardiopulmonary Resuscitation, 2020 Edition, Page 42-44
https://pmc.ncbi.nlm.nih.gov/articles/PMC11234005/

↑ *Back to this question in Part A*

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Q23: What should be done after immediate defibrillation is performed on a young male patient who was brought to the emergency department unconscious after collapsing at a railway station, with no pulse felt and a monitor showing ventricular fibrillation? (Q793442)

A. Check for a pulse

B. Resume chest compressions

C. Epinephrine 1 mg IV

D. Amiodarone 300 mg IV bolus

Correct Answer: B. Resume chest compressions

Explanation: Correct Option B - Resume chest compressions: Ventricular fibrillation (V-fib) is a dangerous heart rhythm condition that can cause cardiac arrest. Hence, it is necessary to stop V-fib immediately to restore pulse and blood pressure. The second focus should be on reducing the development of V-fib in the future. The treatment for ventricular fibrillation(V-fib) includes cardiopulmonary resuscitation, i.e., (CPR). Recent consensus guidelines for CPR advocate that chest compression immediately resumes after the defibrillation process. Pulse checks and rhythm checks can be postponed until the completion of five compressions, minimally for two minutes. Incorrect Options: Option A - Check for a pulse: The pulse check can be postponed for 2 minutes until the five-chest compression is completed. Option C - Epinephrine 1 mg IV: Epinephrine, 1 mg, is recommended every 3-5 minutes once IV or IO access is established until the completion of five compressions. Option D - Amiodarone 300 mg IV bolus: Amiodarone can be provided for ventricular tachycardia or ventricular fibrillation (VT/VF) cardiac arrest via intraosseous (IO)/intravenous (IV) infusion as a 300mg rapid bolus. A 150 mg IO/IV additional bolus is provided if VT persists.

References:

Harrison's 20th edition

↑ *Back to this question in Part A*

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• [09_Anaesthesia Machine _ Workstation] 016 Anaesthesia Machine

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[09_Anaesthesia Machine _ Workstation] 016 Anaesthesia Machine — Quick Jump

Q1 (p. 481)	*Q2 (p. 482)*	*Q3 (p. 484)*	*Q4 (p. 485)*	*Q5 (p. 488)*	*Q6 (p. 488)*
Q7 (p. 490)	*Q8 (p. 492)*	*Q9 (p. 493)*	*Q10 (p. 494)*	*Q11 (p. 495)*	*Q12 (p. 498)*
Q13 (p. 499)	*Q14 (p. 500)*	*Q15 (p. 501)*	*Q16 (p. 507)*	*Q17 (p. 509)*	*Q18 (p. 510)*

Q1: Schimmelbusch mask is an equipment used in the past to deliver liquid volatile anesthetics. What kind of breathing system is this? (Q846851)

A. Open

B. Closed

C. Semi -open

D. Semi-closed

Correct Answer: A. Open

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Open breathing systems: They have no reservoir breathing bag, functional rebreathing of exhaled gases, tubing, or valves. Design: The mask consists of a wire frame covered with several layers of gauze. Mechanism: The liquid anesthetic is dripped directly onto the gauze. As the patient inhales, room air passes through the gauze, vaporizing the liquid and carrying the anesthetic into the lungs. Exhalation: Expired gases are released directly into the atmosphere. No Rebreathing: There is no mechanism to capture or reuse expired gases, nor is there a way to chemically neutralize carbon dioxide (like a soda lime canister). Examples: Use of chloroform dripped onto gauze (Eg- Schimmelbusch mask) Delivery of the fresh gas into an anaesthetist’s cupped hands for inhalational induction in pediatrics {{caption_text}} Closed System (Option B): In a closed system, the patient’s exhaled breath is completely recycled. Exhaled CO 2 is chemically removed (usually by a soda lime canister), and the remaining gas is mixed with a tiny amount of fresh oxygen and anesthetic before being inhaled again. The Schimmelbusch mask allows all exhaled gases to escape into the room. There is no recycling and no way to scrub CO 2 . Semi-Open System (Option C): This is the most common point of confusion. In modern anesthesia, "semi-open" usually refers to systems like the Mapleson circuits . These systems use a reservoir bag and corrugated tubing. They do not use CO 2 absorbers, but they prevent rebreathing by using a very high flow of fresh gas to "wash out" the exhaled air before the next breath. The Schimmelbusch mask has no tubing and no reservoir bag. Semi-Closed System (Option D): This is the standard setup used in modern operating rooms today (the Circle System). It uses a reservoir bag and a CO 2 absorber. Some exhaled gas is recirculated (closed), but some is

allowed to vent out through an APL (pop-off) valve (open) - hence "semi-closed." This requires a complex arrangement of one-way valves and chemical canisters, none of which existed in the simple wire-and-gauze design of the Schimmelbusch era. System Reservoir Bag? Rebreathing? CO2■ Absorber? Open No No No Semi-Open Yes No No Semi-Closed Yes Partial Yes Closed Yes Total Yes



References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Page 82

https://www.ncbi.nlm.nih.gov/books/NBK574503/

↑ *Back to this question in Part A*

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Q2: While performing panretinal photocoagulation for diabetic retinopathy in an elderly male patient, the patient's airway caught sudden fire. All of the following steps can be done in the immediate management of this airway fire except: (Q846861)

A. Continue ventilation

B. Flood area with 0.9% saline

C. Stop using laser

D. Remove the tube and extinguish in water

Correct Answer: A. Continue ventilation

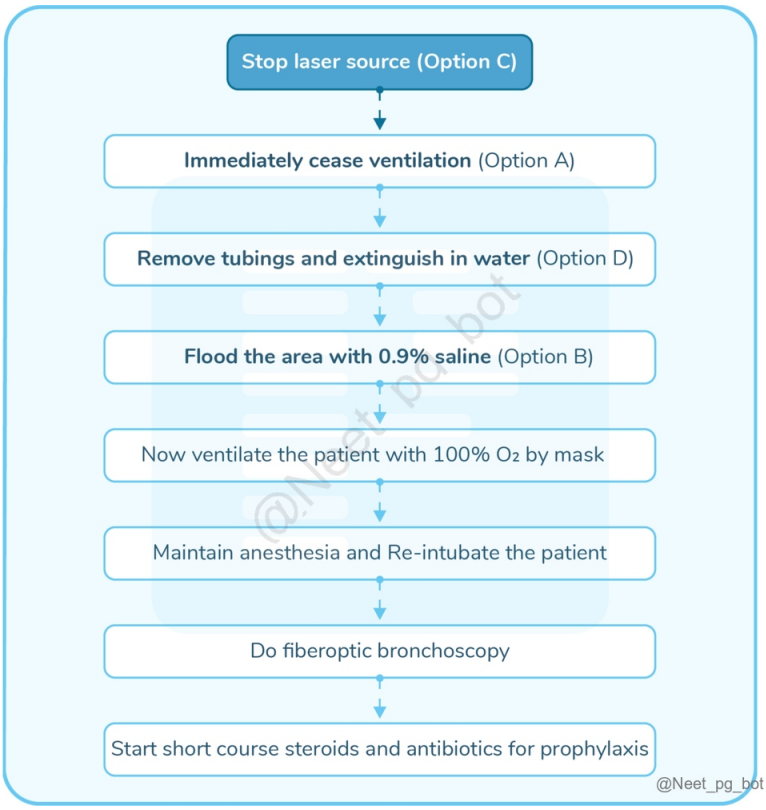
■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Laser beams used in surgery may cause ignition of tissues and equipment in the presence of combustible gases such as oxygen and nitrous oxide. During such airway fires, ventilation should be stopped immediately, and the tubing should be removed and extinguished with water . Management of airway fire:



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References:

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 338-340

↑ *Back to this question in Part A*

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Q3: All of the following are components of Baralyme except? (Q846858)

A. Ca(OH) 2

B. NaOH

C. KOH

D. Ba(OH) 2

Correct Answer: B. NaOH

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Baralyme, a CO 2 absorber does not contain NaOH and rather contains Ba(OH) 2 and hence called Baralyme. Baralyme composition: 80% Ca(OH) 2 11% Ba(OH) 2 2% KOH 11% H 2 O

References:

Miller’s Anaesthesia, 9th Edition, Pages 609-611

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 96-98

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 40-year-old male was undergoing laparoscopic cholecystectomy, in the middle of surgery, he developed tachypnoea with increased sweating, HR - 120 bpm, SpO 2 - 92%. An anesthetist observed the change and promptly responded by adding a CO 2 absorber substance as shown in the image below, following which the signs and symptoms reverted back to normal limits. Which among the following inhalational agents is completely safe to be administered with the added substance? {{caption_text}} (Q846857)

A. Desflurane

B. Halothane

C. Sevoflurane

D. Trilene



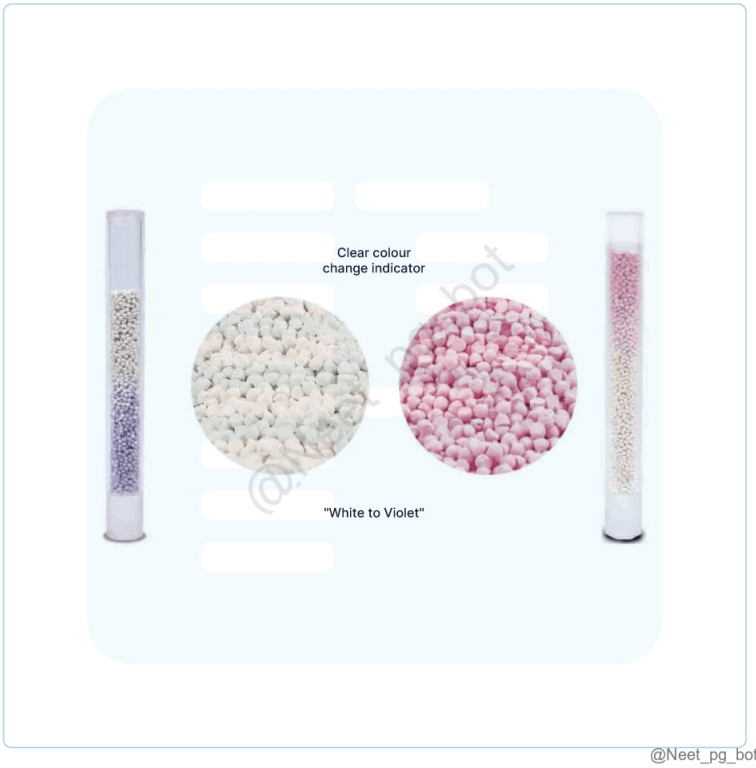
Correct Answer: B. Halothane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Patient’s symptoms and signs are attributed to rebreathing CO 2, which causes tachypnoea, hypoxia, and tachycardia. {{caption_text}} The CO 2 absorber substance most commonly used (and shown in the image) is Soda lime , which can interact with the inhalational anesthetic agents. Among the options, the single best answer would be Halothane as Soda lime least interacts with it. Soda Lime: Indicator Ethyl violet (changes color upon exhaustion) Interactions Soda Lime + Trilene ■ Phosgene (cause ARDS) + Dichloroacetylene (neurotoxic) Soda Lime + Sevoflurane ■ COMPOUND - A (nephrotoxic) Minor interaction: with Desflurane, Enflurane and Isoflurane, produces carbon monoxide (more with Baralyme)





References:

Miller’s Anaesthesia, 9th Edition, Pages 609-611

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 96-98

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which of the following is the CO 2 absorption capacity of soda lime? (Q846856)

A. 50L CO 2 per 100 gram

B. 10L CO 2 per 100 gram

C. 36L CO 2 per 100 gram

D. 23L CO 2 per 100 gram

Correct Answer: D. 23L CO 2 per 100 gram

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Soda lime absorbs up to 23 L of CO■ per 100 g of absorbent

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 91-92

Daniel Aston Equipment in Anaesthesia and Critical Care, Page 97

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: How is a circle system made into a fully closed system? (Q846855)

A. APL valve is opened

B. APL valve is closed

C. APL valve is closed and the fresh gas flow is set equal to the uptake by the patient

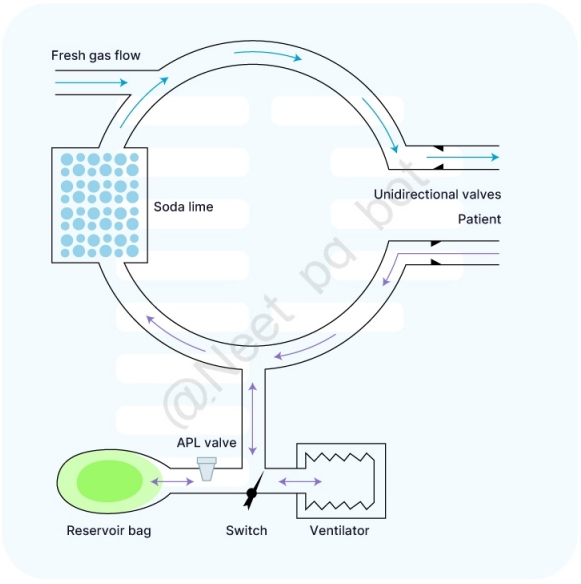
D. None of the above

Correct Answer: C. APL valve is closed and the fresh gas flow is set equal to the uptake by the patient

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Circle system - closed breathing system To make the circle system a fully closed system, the APL valve is closed, and the fresh gas flow is set equal to the uptake by the patient so that the overall volume of gas in the system is constant. It is difficult to estimate the patient’s oxygen uptake accurately, and therefore, fully closed systems are rarely used in practice. Components: Fresh gas inlet Reservoir bag Two one-way valves (inspiratory and expiratory limbs) Y-piece connector to the patient APL valve Soda lime canister for CO2 absorption Kink-resistant corrugated tubing connecting components and patient. Advantages: Conserves anesthetic gases, heat, and moisture. Allows low-flow anesthesia with monitoring. Low dead space; Y-piece tubing creates mechanical dead space comparable to non-rebreathing circuits. Soda lime canister is distant from the patient’s airway, reducing the inhalation risk of soda lime dust. Reduces atmospheric pollution by recycling anesthetic gases. Other systems: 1. Semi-Open Systems (Mapleson Circuits): How it works: Fresh gas (Oxygen + Anesthetic) flows into a bag. The patient breathes from the bag. To prevent the patient from rebreathing their own exhaled CO 2 , the fresh gas flow (FGF) must be very high - usually 2 to 3 times the patient's minute ventilation - to "wash" the old breath out of the tube before the next inhalation. Key Components: Corrugated tubing, a reservoir bag, and an APL (Adjustable Pressure Limiting) valve. Example: Mapleson A, B, C, D, E, and F circuits (e.g., the Bain Circuit). 2. Semi-Closed Systems (The Circle System): How it works: It uses unidirectional valves to ensure gas only moves in one direction. Exhaled gas doesn't just vanish; it goes through a canister of Soda Lime which chemically absorbs the CO 2 . It is "semi-closed" because the fresh gas flow is higher than what the patient actually consumes. The excess gas (and some exhaled gas) is vented out through a "pop-off" valve into a scavenging system. Advantages: It saves money by reusing anesthetic gas and keeps the air humidified and warm. 3. Closed Systems: How it works: The fresh gas flow is adjusted to exactly match the patient's oxygen consumption (basal metabolic rate). Every bit of exhaled gas is scrubbed of CO 2 and returned to the patient. Nothing escapes into the operating room. Risk: It requires extremely tight monitoring because if the oxygen flow is even slightly too low, the patient can quickly become hypoxic.



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References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Page 82, 96, 98

https://www.ncbi.nlm.nih.gov/books/NBK574503/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Which of the following is a standard breathing system for pediatric patients up to 25 kg? (Q846854)

A. Mapleson A

B. Mapleson B

C. Mapleson C

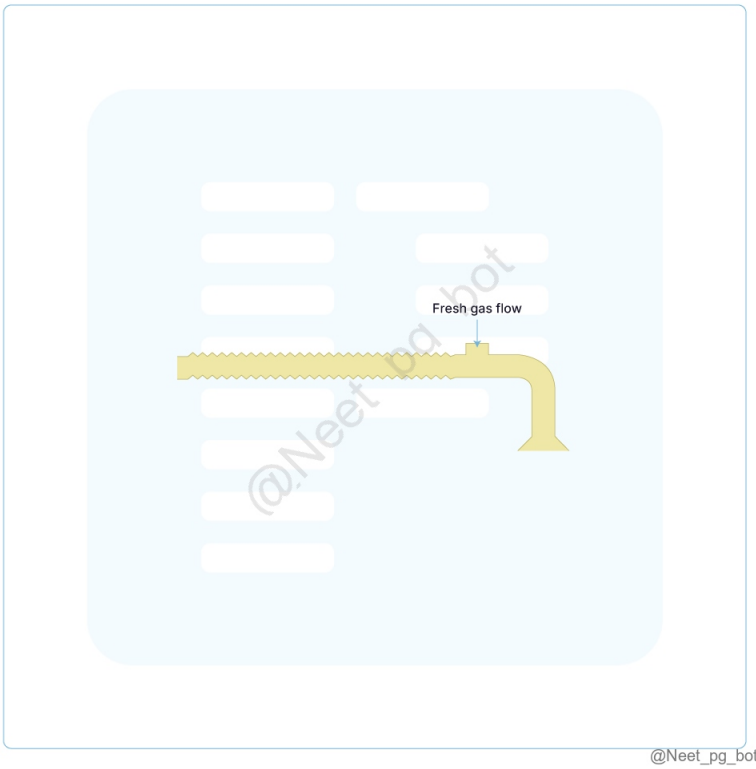
D. Mapleson F

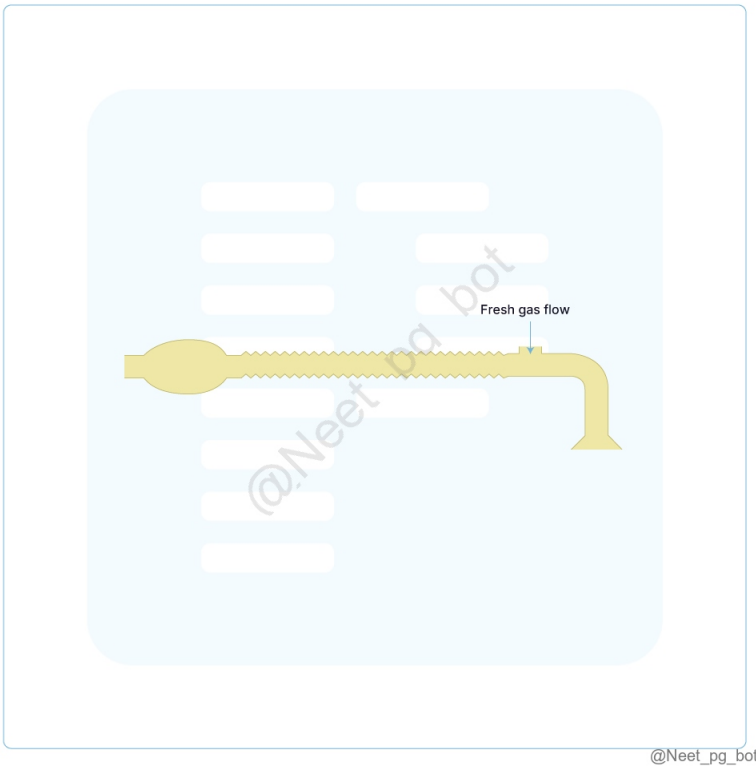
Correct Answer: D. Mapleson F

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ayre’s T-piece=Mapleson E: Valveless, bagless breathing system consisting of a T-shaped rigid tube with connections for Fesh Gas Flow (FGF), patient, and reservoir tubing. Used for premature babies (cannot handle dead space). Jackson–Rees modification (Mapleson F): Best for pediatric patients Structure Modification of Ayre’s T-piece with an open-ended bag attached to the reservoir tubing. Advantages Minimal dead space (as for Mapleson E). Allows positive pressure ventilation and PEEP. More suitable for inhalational induction than a circle system. Standard breathing system for pediatric patients (up to 25 kg). Disadvantages Scavenging exhaled gases is difficult. Requires high FGFs, making the system inefficient. Technique of partially occluding the bag tail while squeezing it requires moderate skill.





References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Page 91-92

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: Which of the following is not a feature of the Bain system? (Q846853)

A. Fresh gas flow at patient end

B. Valve at at machine end

C. Bag at the machine end

D. None of the above

Correct Answer: D. None of the above

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: All of the given options are features of the Bain system Mapleson D system: Fresh Gas Flow (FGF) enters at the patient end Adjustable Pressure-Limiting (APL) valve and bag are located at the machine end Bain system (Coaxial Mapleson D): Modification of Mapleson D system Fresh gas flows down an inner tube and exhaled gas passes down an outer tube

References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Pages 90-91

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: Which of the following statements is false regarding Magill breathing system? (Q846852)

A. Efficient for spontaneous ventilation

B. Inefficient for controlled ventilation

C. Semi-open system

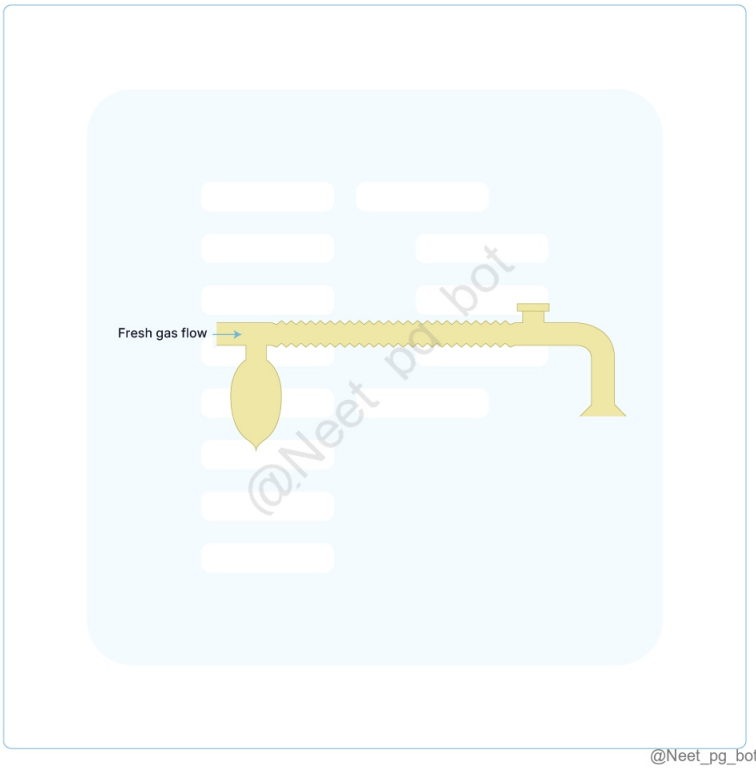
D. Suitable for pediatrics

Correct Answer: D. Suitable for pediatrics

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Magill breathing system is not suitable for pediatrics; rather, the Jackson Rees circuit (Mapleson F) is the best for pediatrics. Mapleson A system is also called the Magill breathing system Advantages Efficient for spontaneous ventilation Disadvantages Inefficient for controlled ventilation APL valve at the patient end adds bulk and drags on circuit connections Not suitable for pediatrics (Option D is false)



References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Page 87-88

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Which of the following safety features of Boyle's anesthesia machine reduces the supply of other gases in response to a drop in oxygen pressure? (Q846816)

A. Second stage pressure regulator

B. Oxygen supply failure alarm

C. Oxygen failure safety device

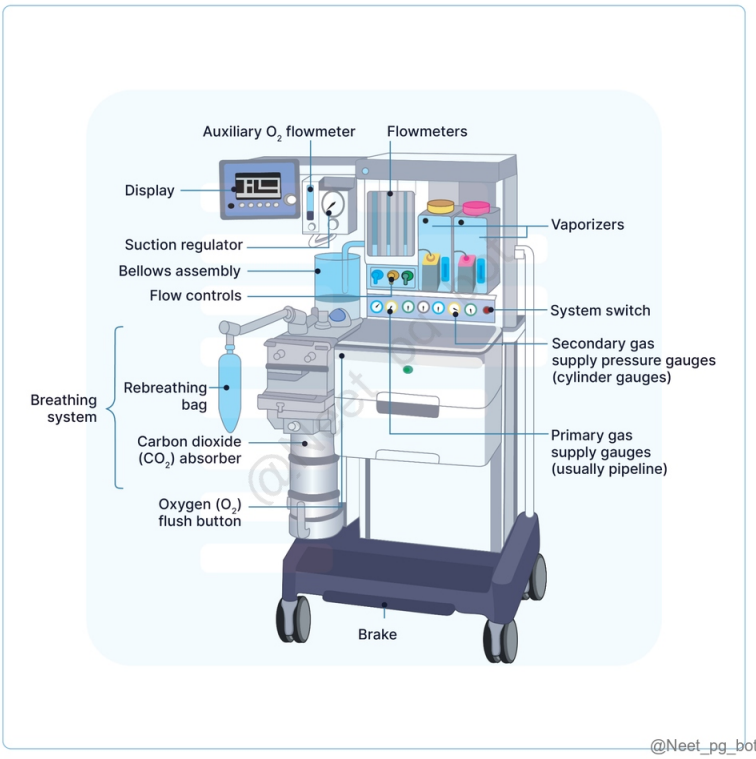
D. All of the above

Correct Answer: C. Oxygen failure safety device

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The oxygen failure safety device in Boyle's machine reduces or cuts off other gases when oxygen pressure drops. Safety Features Oxygen failure safety device: Reduces or cuts off other gases when oxygen pressure drops. (Option C) Oxygen supply failure alarm: Detects oxygen supply failure based on pressure. (Option B ruled out) Second stage pressure regulator: Maintains constant flow despite pipeline pressure changes. (Option A ruled out)



References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821260/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821264/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: You notice the following vaporizer being used in OT. What is the likely anesthetic agent that could be used here? {{caption_text}} (Q846850)

A. Desflurane

B. Isoflurane

C. Sevoflurane

D. Halothane



Correct Answer: A. Desflurane

- *Listen (English)*
- *Listen (Hindi)*

Explanation: The image in question shows a Tec-6 Vaporizer with blue color coding, which is used for safe administration of Desflurane . {{caption_text}} Vaporizers: Color coding Desflurane Blue Isoflurane Purple (Option B) Sevoflurane Yellow (Option C) Halothane Red (Option D)



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References:

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 144-148

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821264/

↑ *Back to this question in Part A*

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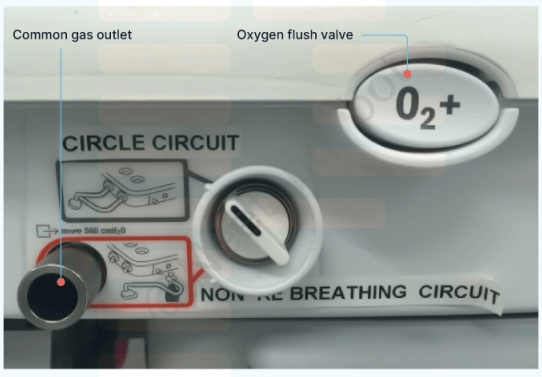
Q12: A 60 year old female patient posted for some surgery under general anesthesia, was maintaining saturation but suddenly got desaturated. Now the clinician decided to supply oxygen via a device shown below. What is the ideal pressure to be maintained for delivering O2 in this scenario? (Q846849)

A. 2000 psi

B. 400 psi

C. 40 psi

D. 20 psi



@Neet_pg_bot

Correct Answer: C. 40 psi

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Emergency oxygen flush, pipeline inlets are part of the intermediate pressure system of gas delivery and the ideal pressure maintained for the same is 40-50 psi . Emergency Oxygen flush: Used in cases of sudden desaturation. Can be used bedside near the breathing circuit. Delivers emergency O2 at a rate of 35-70 L/min. Pressure regulators and pressure reducing valves: Component Function Pressure Settings Pressure regulators: Primary Regulator Reduces high cylinder pressure to a consistent level 400 kPa Secondary Regulator Stabilizes fluctuations in pipeline pressure - Pressure reducing/relief valve: Pressure Relief Valve Provides a backup in case of regulator failure 40-50 psi (Option C) Non-Return Pressure Relief Protects flowmeters and vaporizers from downstream pressure, prevents back pressure effects 35 kPa

References:

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 137,138.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: Choose the correct set of true statements regarding the central supply line and Diameter index safety system (DISS) 1) DISS is used for preventing wrong attachment of cylinder to machine 2) White color hoses are used for Oxygen 3) Part of low pressure system 4) Ideal pressure of gasses is fixed at 45psi (Q846848)

A. 1, 2

B. 2, 4

C. 1, 3

D. 2, 3

Correct Answer: B. 2, 4

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Diameter index safety system (DISS) is used for prevention of wrong attachment of pipeline to machine , and the gas supply devices are a part of intermediate pressure system (not low). Central supply line and DISS: Medical gas supply includes pipelines linking VIEs, cylinder banks and air compressors to wall outlets in wards and theater suites. Part of the intermediate pressure delivery system. (Statement-3) Indexed connectors (DISS) prevent cross-connection. Schrader probes are used for connection. DISS (Diameter Index safety system): prevents wrong attachment of pipeline to machine . (Statement-1) Hoses are made up of copper and are color coded: O 2 White (Statement-2) N 2 O Blue Air Black Suction / Vacuum Yellow Ideal pressures: Gasses: 45-55 psi (Statement-4) Air: 60 psi {{caption_text}}



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References:

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 10-12.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: Mark the correct option regarding the scale reading of circular and cylindrical bobbin in the following device {{caption_text}} (Q846847)

A. Circular - from top ; cylindrical - parallel with the equator

B. Circular - parallel with the equator ; cylindrical - from top

C. Both to be read from top

D. Both to be read from side, parallel with the equator



Correct Answer: A. Circular - from top ; cylindrical - parallel with the equator

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The device shown is a flowmeter/rotameter anesthesia equipment, used to control the flow of gasses. Two shapes of Bobbin: Circular bobbin: The reading is taken from the top of the bobbin. Cylindrical bobbin: The reading is taken parallel to the equator (side view), as this reflects the true displacement/volume.

References:

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 169-171

↑ *Back to this question in Part A*

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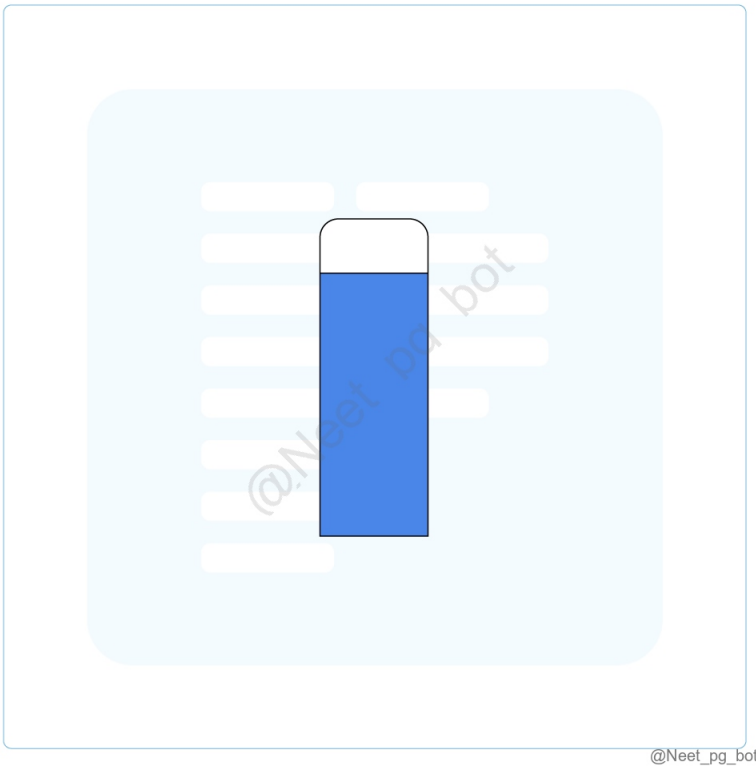
Q15: Match Column A with Column B appropriately: Column A (Cylinder color) Column B (Pin index) 1) a) 1, 5 2) b) 2, 5 3) c) 3, 5 4) d) 1, 6 e) 7 (Q846846)

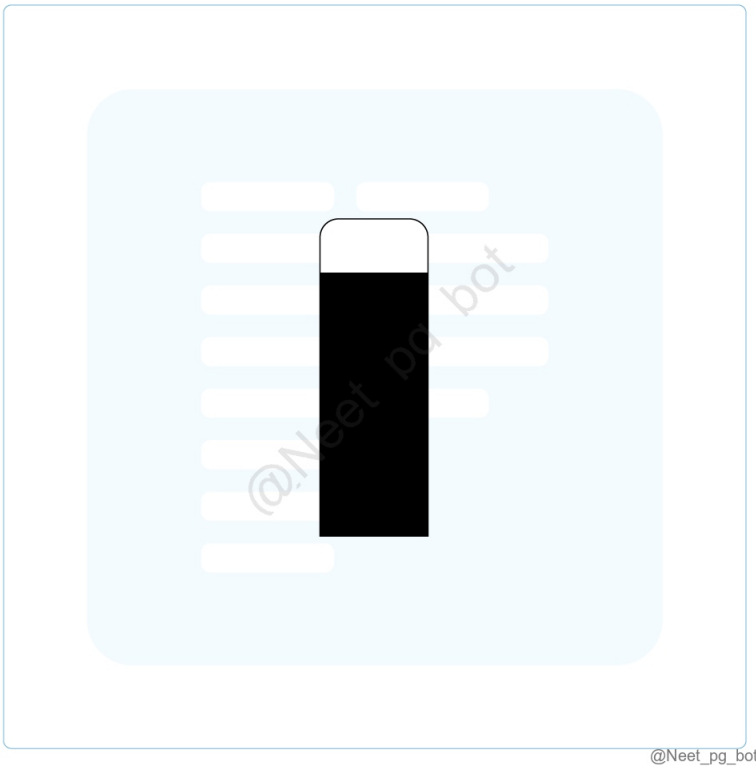
A. 1-c; 2-b; 3-d; 4-e

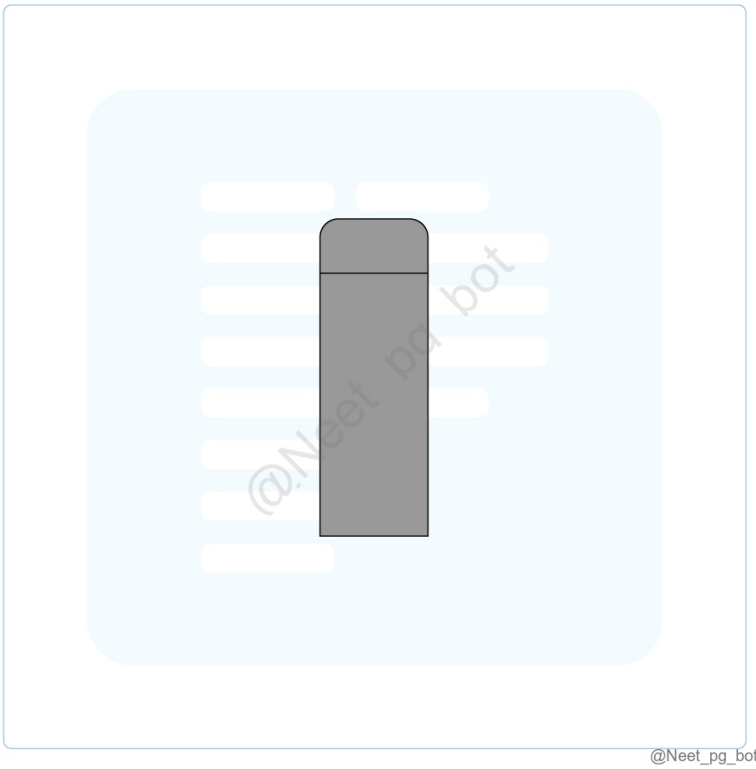
B. 1-c; 2-a; 3-d; 4-e

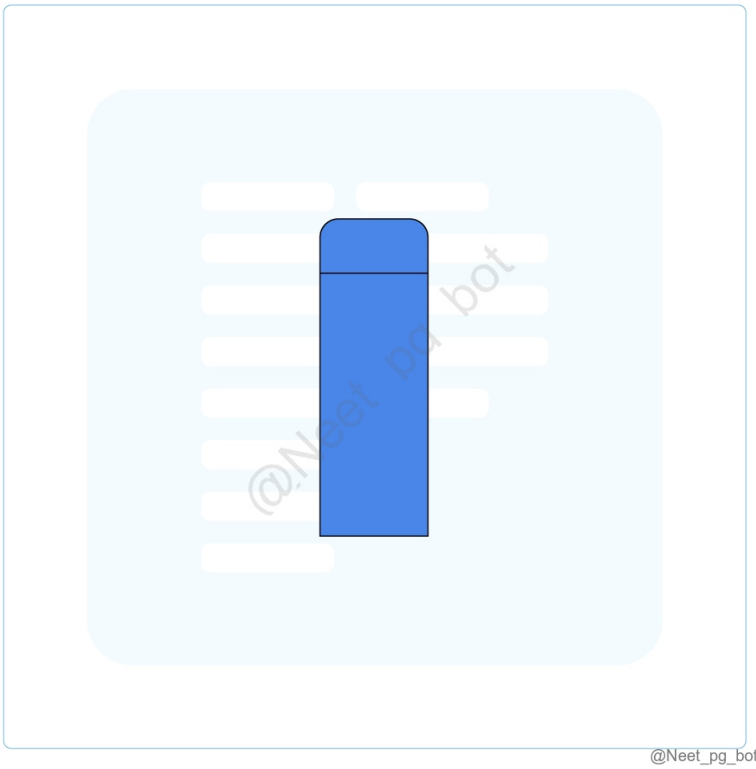
C. 1-e; 2-b; 3-d; 4-c

D. 1-e; 2-a; 3-d; 4-c


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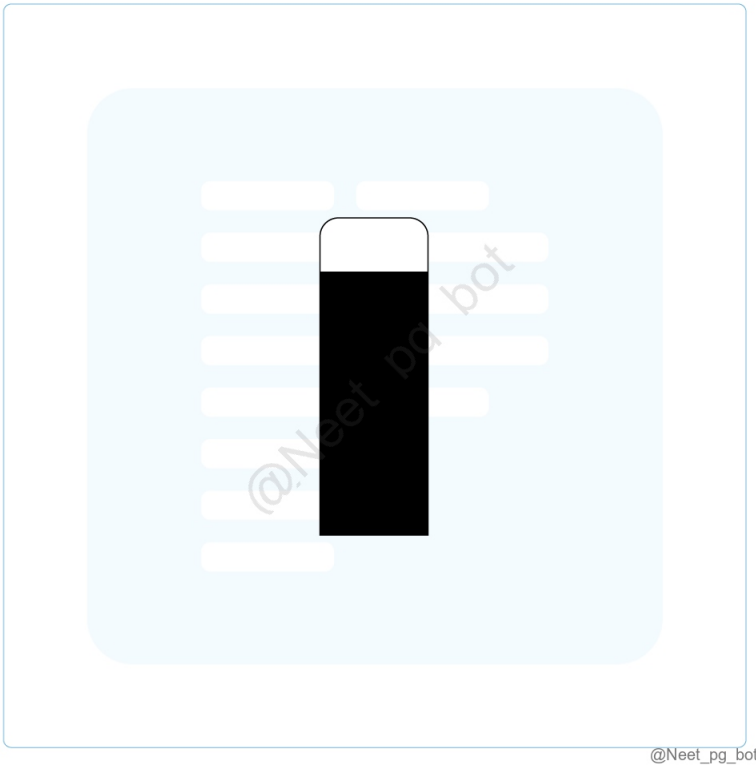

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Correct Answer: C. 1-e; 2-b; 3-d; 4-c

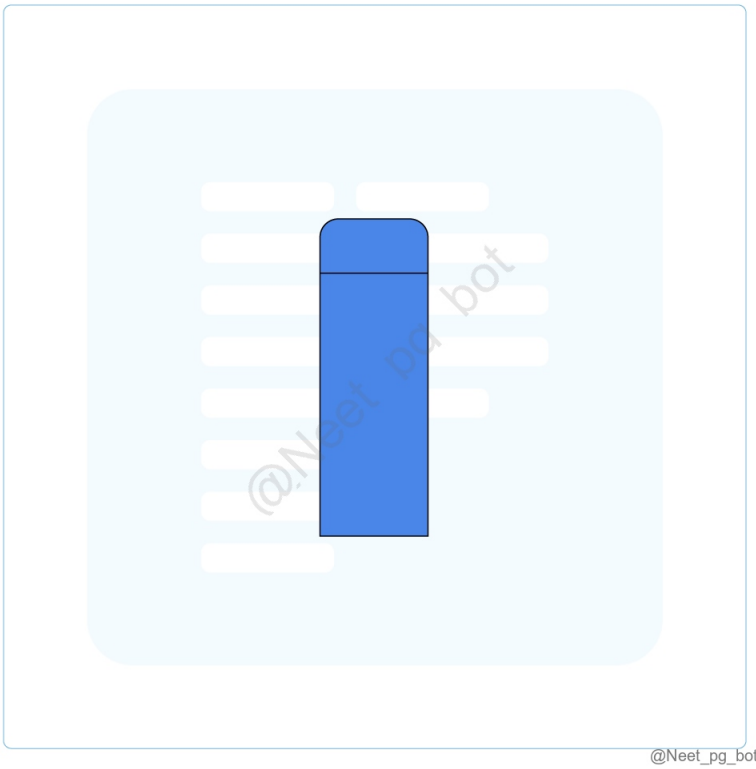
■ *Listen to Audio 1*

Explanation: Gasses and their PIN Indices: Gas Cylinder color PIN Index system Air Black body with black & white shoulder 1, 5 Oxygen Black body with white shoulder 2, 5 N2O Blue 3, 5 Carbon dioxide Grey 1, 6 (> 7.5%); 2, 6 (< 7.5%) Entonox Blue body with white shoulders 7 Cyclopropane Orange 3, 6

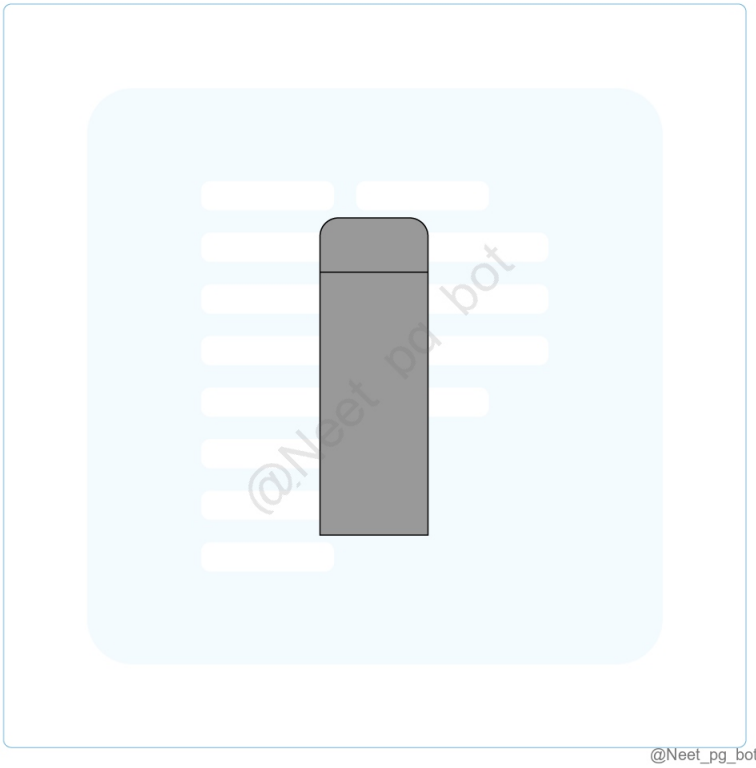




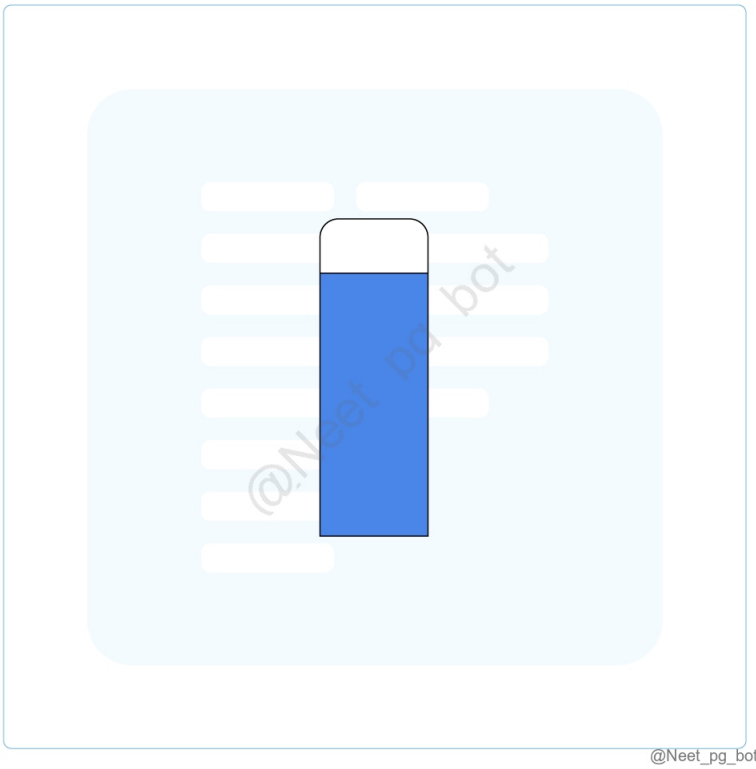
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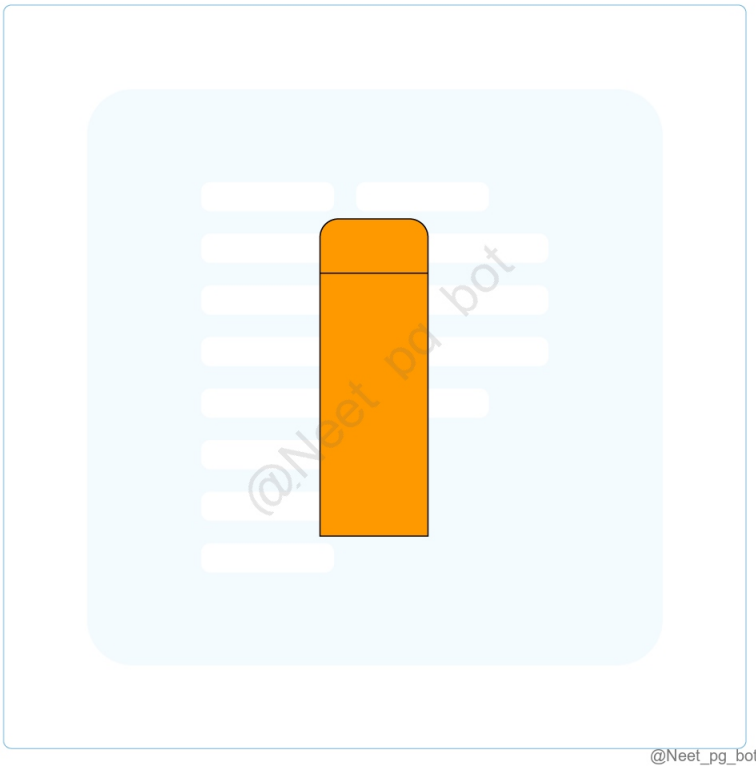
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References:

Dorsch & Dorsch Anaesthesia Equipment, 5th Edition, Page 7

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 6,10,137

↑ *Back to this question in Part A*

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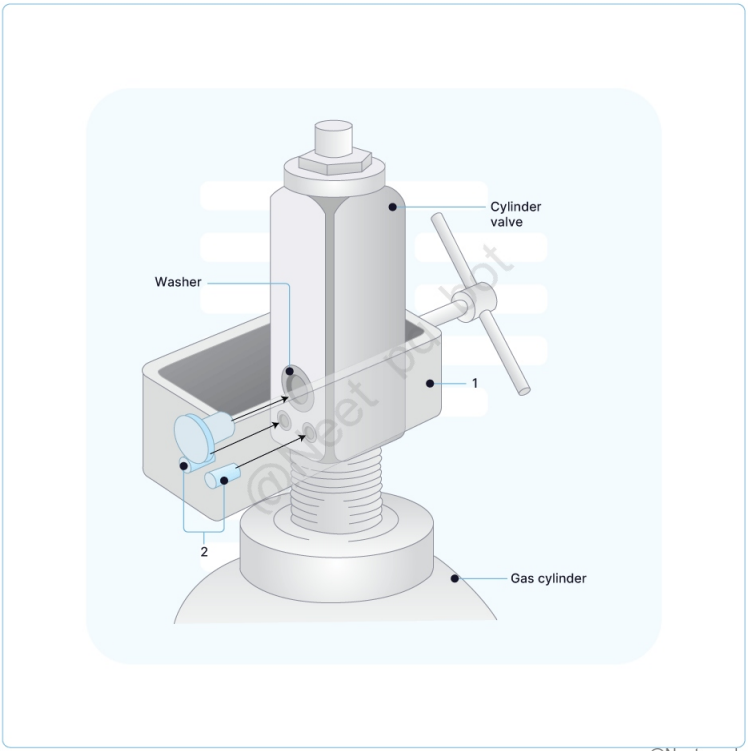
Q16: Label the following image appropriately (Q846845)

A. 1 - Hanger yoke assembly; 2 - DISS

B. 1 - DISS; 2 - Hanger yoke assembly

C. 1 - PIN Index system; 2 - Hanger yoke assembly

D. 1 - Hanger yoke assembly; 2 - PIN Index system



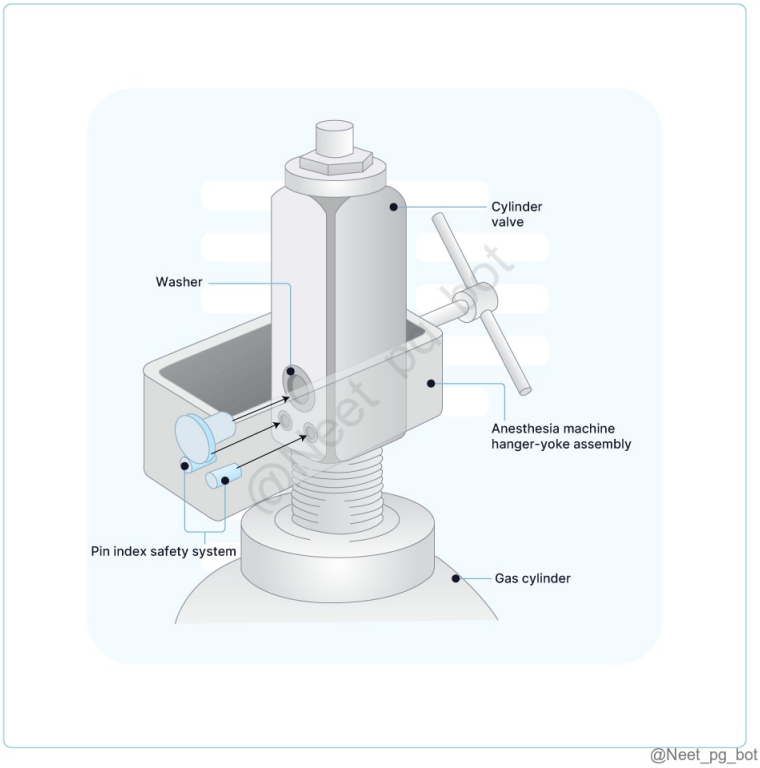
Correct Answer: D. 1 - Hanger yoke assembly; 2 - PIN Index system

■ *Listen (English)*

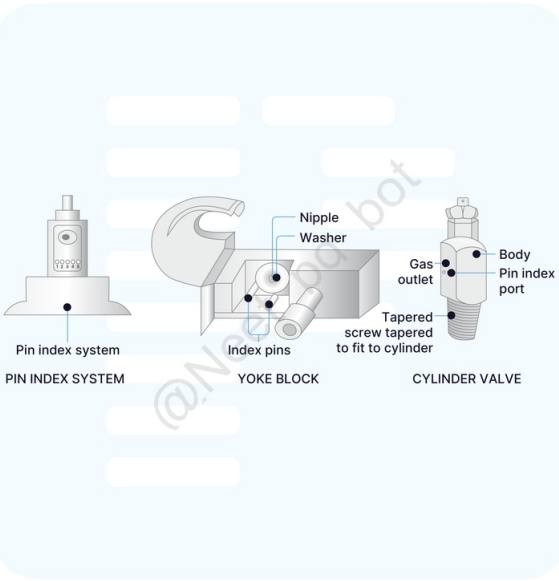
■ *Listen (Hindi)*

Explanation: Shown image is that of a gas delivery device that connects the anesthesia machine with the gas cylinder via an interlink PIN Index safety system . Hanger-Yoke assembly: Steel valve assembly that helps in attachment of cylinders to the anesthesia machine. A type of high-pressure gas delivery system Ideal pressures: O2

- 2000 psi; N2O - 760 psi Gas Cylinders: Materials: molybdenum steels ; Aluminium- MRI compatible Sizes: A (smallest) to H (largest) ; most commonly used - E (emergency gas supply) PIN Index Safety system: Prevents wrong attachment of the cylinder to the machine. Pins are present on the machine. Ports are present on the cylinder. DISS: Diameter index safety system Prevents wrong attachment of pipeline to the machine Gases and their PIN Indices: Gas Cylinder color PIN Index system Air Black body with black & white shoulder 1,5 Oxygen Black body with white shoulder 2,5 N2O Blue 3,5 Carbon dioxide Grey 1,6 (> 7.5%) ; 2,6 (< 7.5%) Entonox Blue body with white shoulders 7 Cyclopropane Orange 3,6



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References:

Miller's Anaesthesia 9th Edition, Pages 576,577.

Equipment in Anaesthesia and critical care by Daniel Aston, Pages 6,137

https://www.ncbi.nlm.nih.gov/books/NBK532908/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: Match the gas to its respective cylinder body and shoulder colors. Column A (Gas) Column B (Body Color) Column C (Shoulder Color) 1. Oxygen a) Black i) White 2. N2O b) Blue ii) Blue 3. Nitrogen c) Black iii) Black 4. Carbon dioxide d) Gray iv) Gray 5. Entonox e) Blue v) White & blue 6. Air f) Grey vi) Black & white (Q846818)

A. 1-a-i ; 2-b-ii ; 3-c-iii; 4-d-iv ; 5-e-v ; 6-f-vi

B. 1-a-vi ; 2-b-ii ; 3-c-iii; 4-d-iv ; 5-d-v ; 6-f-i

C. 1-a-i ; 2-b-v ; 3-c-iii; 4-d-iv ; 5-d-ii ; 6-f-vi

D. 1-a-i ; 2-b-ii ; 3-d-iv; 4-c-iii ; 5-d-v ; 6-f-vi

Correct Answer: A. 1-a-i ; 2-b-ii ; 3-c-iii; 4-d-iv ; 5-e-v ; 6-f-vi

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Gas Cylinder color Body Shoulder Air Grey Black & white Oxygen Black White N2O Blue Blue Nitrogen Black Black Carbon dioxide Grey Grey Entonox Blue White & blue Helium Brown Brown

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821267/

Equipment in Anaesthesia and critical care by Daniel Aston, Page 6

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: Mark the cylinder used in MRI rooms and its corresponding wall thickness. (Q846817)

A. Steel cylinders; 3mm

B. Aluminum cylinders; 3mm

C. Steel cylinders; 6mm

D. Aluminum cylinders; 6mm

Correct Answer: D. Aluminum cylinders; 6mm

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Aluminum cylinders are MRI compatible. It is made with a cylinder wall thickness of 6 mm. Properties of cylinder Constructed from lightweight materials like chrome molybdenum steel, aluminum, or composites (e.g., aluminum wrapped in carbon fiber). MRI compatibility : Special aluminum cylinders are safe for use in MRI rooms. (Option D) (Option A & C ruled out) Wall thickness : Typical thickness of 3 mm (Steel cylinders), while aluminum cylinders are 6 mm thick. (Option D) (Option B ruled out) Composite cylinders : Made from steel or aluminum liners encased in high-density polyethylene or wrapped in carbon fiber, Kevlar, Twaron, or glass fiber.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821267/

Equipment in Anaesthesia and critical care by Daniel Aston, Page 6

↑ *Back to this question in Part A*

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• [09_Anaesthesia Machine _ Workstation] 017 Previous Year Questions

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[09_Anaesthesia Machine _ Workstation] 017 Previous Year Questions — Quick Jump

Q1 (p. 512) *Q2 (p. 513)* *Q3 (p. 513)* *Q4 (p. 515)* *Q5 (p. 517)* *Q6 (p. 518)*
Q7 (p. 520) *Q8 (p. 524)* *Q9 (p. 525)*

Q1: Ambu aura 40 is an example of? (Q852836)

A. Supraglottic laryngeal airway generation 1

B. Supraglottic laryngeal airway generation 2

C. Supraglottic laryngeal airway generation 3

D. Supraglottic laryngeal airway generation 4

Correct Answer: B. Supraglottic laryngeal airway generation 2

Explanation: Ambu Aura 40 is a second-generation supraglottic airway device designed for improved airway protection and ventilation . It includes a gastric drainage channel , which helps reduce the risk of aspiration , a key feature of second-generation devices. Better sealing pressure compared to first-generation devices, allowing for effective positive pressure ventilation. Commonly used in elective and emergency airway management . Generations of Supraglottic Airways (SGAs) Supraglottic airway devices are classified into generations based on their features . Higher generations offer improved airway protection and better ventilation control. Generation Features Examples Generation 1 No gastric drainage, basic airway management LMA Classic, Ambu Aura Once Generation 2 Gastric drainage channel, better seal, aspiration protection Ambu Aura 40, LMA Supreme, ProSeal LMA Generation 3 Dual-lumen design, advanced sealing, integrated bite block LMA Protector Generation 4 Smart/intelligent airway control, integrated real-time monitoring (Still under research) Supraglottic laryngeal airway generation 1 (Option A): Incorrect because first-generation devices lack a gastric drainage tube , while Ambu Aura 40 has one. Supraglottic laryngeal airway generation 3 (Option C): Incorrect because third-generation SGAs have more advanced sealing and monitoring features , which Ambu Aura 40 lacks. Supraglottic laryngeal airway generation 4 (Option D): Incorrect because fourth-generation SGAs are not yet widely available , and Ambu Aura 40 does not belong to this category.

References:

Miller’s Anesthesia, 9th Edition, Pages 615, 615.

Morgan and Mikhail’s Clinical Anesthesiology, 7th Edition, Pages 99, 100.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: What is the typical pressure setting for the valve in a Mapleson circuit? (Q844122)

A. 30–40 cm H■O,

B. 30–40 mm Hg

C. 10–20 cm H■O

D. 10–20 mm Hg

Correct Answer: A. 30–40 cm H■O,

Explanation: The APL (Adjustable Pressure Limiting) valve in a Mapleson circuit is typically set to allow pressures up to 30–40 cm H■O , especially during controlled ventilation . This pressure helps ensure adequate ventilation , especially in scenarios like positive pressure ventilation under anesthesia. It does not mean the pressure constantly stays at 30–40 cm H■O , but that the valve opens when pressures rise to this range , preventing further pressure buildup. Mapleson Circuit Feature Details Used in Anesthesia, manual or controlled ventilation APL Valve Purpose Limits peak airway pressure by releasing excess gas Valve Pressure Setting Typically 30–40 cm H■O , especially during controlled ventilation Spontaneous Ventilation Use Valve kept open to atmosphere (minimal resistance) Risk if too high >40 cm H■O may cause barotrauma Units Used cm H■O (not mm Hg) in respiratory and anesthesia circuits 30–40 mm Hg (Option B): Incorrect because 30 mm Hg ≈ 40.8 cm H■O — the unit is not standard for respiratory pressures. 10–20 cm H■O (Option C): Incorrect for APL valve setting ; this is more typical for for PEEP settings or spontaneous ventilation in pediatric patients , not the standard APL valve setting in adults. 10–20 mm Hg (Option D): Incorrect both in unit (mm Hg) and value — 10 mm Hg ≈ 13.6 cm H■O, which is lower than required for safe manual ventilation in controlled settings.

References:

Equipment in Anaesthesia and Critical Care- Page 84

Miller's Anaesthesia, 9th Edition, Page 603, 604.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following instrument is shown in the image below? (Q820222)

A. Veress needle

B. Hasson Cannula

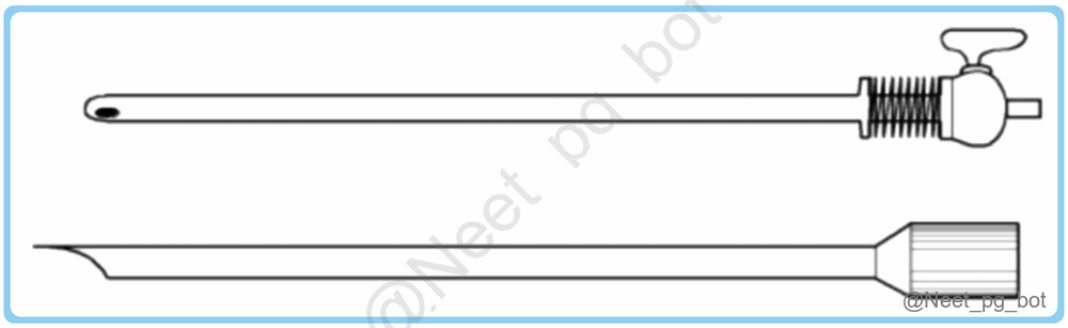
C. Large Bore Cannula

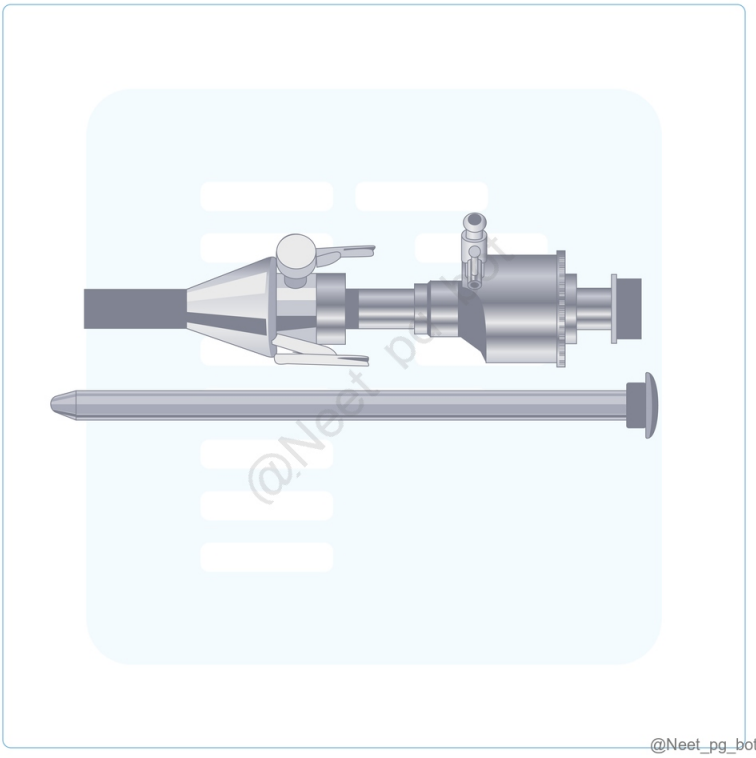
D. Small bore cannula



Correct Answer: A. Veress needle

Explanation: Veress Needle: Used to create pneumoperitoneum in laparoscopic surgery. Inserted through a small infraumbilical puncture in the abdominal wall. Allows closed-technique entry into the peritoneal cavity. Once in position, CO■ is insufflated to expand the abdominal cavity. Creates a working space for safe insertion of trocars and laparoscopic instruments. Provides a controlled and minimally invasive method for initial abdominal access. Hasson Cannula (Option B): Used for open (direct) entry in laparoscopic surgery. Requires a small infraumbilical incision under direct vision. Cannula is placed and secured with sutures. CO■ insufflation is then initiated for pneumoperitoneum. Considered safer in patients with prior abdominal surgery but less common than Veress needle due to being more invasive. Large Bore Cannula (Option C): A large bore cannula is not typically used for creating pneumoperitoneum and initial entry into the abdominal cavity. Large bore cannulas are generally used for suction and irrigation during laparoscopic procedures. Small Bore Cannula (Option D): A small bore cannula is also not commonly used for creating pneumoperitoneum and initial entry. Small bore cannulas might be used for specific tasks during laparoscopic surgery, but they are not the primary instrument for establishing the pneumoperitoneum and entering the abdominal cavity.





References:

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↑ *Back to this question in Part A*

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Q4: Resistance of the tube shown below is primarily because of: (Q857817)

A. Curvature

B. Circumference

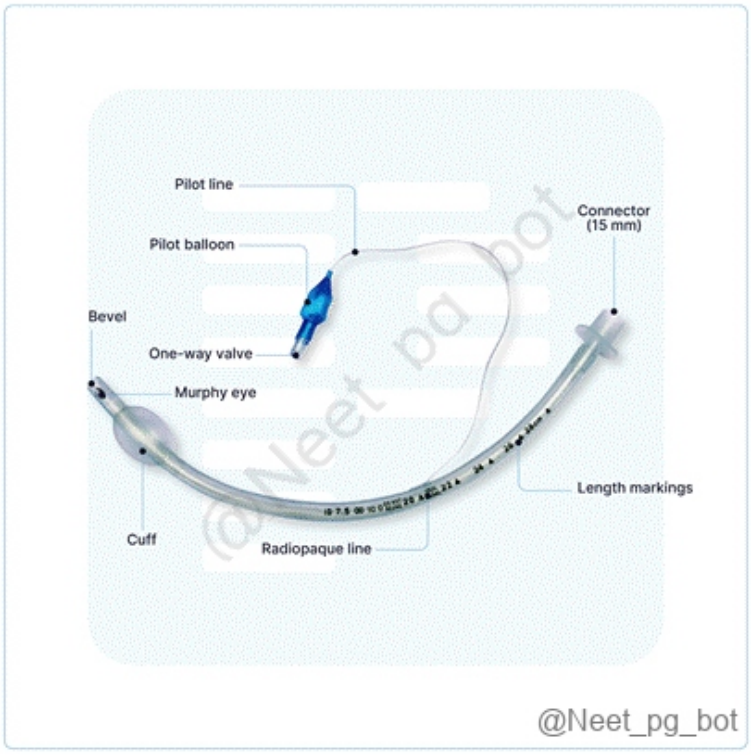
C. Length

D. Diameter



Correct Answer: D. Diameter

Explanation: Airway resistance (R) in the endotracheal tube is because of diameter. Resistance is directly proportional to viscosity and length and inversely proportional to the radius (r^4) according to the Hagen Poiseuille law. The ETT size is described in terms of internal diameter: Age Internal Diameter length Term-Neonate 3 mm (uncuffed) 9 cm 1 Year Old 4 mm (uncuffed) 10 cm Child (>1 Year) Age/4 + 4 mm (uncuffed) Age/2 + 12 cm Adult > 7 mm 18-22 cm The cuff is positioned 3-4 cm above the carina and 2-2.5 cm below the glottis. Murphy's eye is a side hole at the tip, which allows continued ventilation if the end abuts the tracheal wall. {{caption_text}}



References:

Miller's Anesthesia, 9th edition, Page 1392,1393

Equipment in anaesthesia and critical care Page 65, 66

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which of the following gases is delivered through the blue pipeline in the operation theatre? (Q856762)

A. Oxygen

B. Nitrous oxide

C. Air

D. Vacuum

Correct Answer: B. Nitrous oxide

Explanation: In an operating theater, various pipelines are color-coded to differentiate the gases being delivered. Colour coding is one of the other options for safety measures. Hoses are made up of copper and are color coded: O 2 White N 2 O Blue Air Black Suction Yellow For every gas cylinder the top part is known as the shoulder, and the lower part is known as the body: Gas Cylinder color Body Shoulder Air Black Black & white Oxygen Black White N2O Blue Blue Nitrogen Black Black Carbon dioxide Grey Grey Entonox Blue White & blue Helium Brown Brown

References:

Equipment in Anaesthesia and critical care by Daniel Aston pages - 6, 10, 11, 12

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3821267/

↑ *Back to this question in Part A*

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Q6: Identify the equipment shown in the image below (Q856459)

A. Mechanical ventilator

B. Infusion pump

C. CPAP machine

D. Nasal cannula



Correct Answer: D. Nasal cannula

Explanation: A nasal cannula is a medical device used to deliver supplemental oxygen or increased airflow to a patient or person in need of respiratory help. It consists of a lightweight tube that splits into two prongs that are placed in the nostrils. The other end of the tube is connected to an oxygen supply. Nasal cannula: Used in low to medium concentrations of O2 (22-44%) When these are attached to the flow meter which is connected to the central pipeline supply of an ICU or cylinders and is turned on at 1L per minute, these deliver oxygen of about 24%. Atmospheric oxygen is from 20 to 21% When the concentration of oxygen is increased, it leads to an increase in the concentration of FIO2 This device can only deliver up to 6L per minute Every liter corresponds to its subsequent FiO2: 1 L/min-24% 2 L/min-28% 3 L/min-32% 4 L/min-36% 5 L/min-40% 6 L/min-44% This device is not beneficial for a capacity of > 6 liters Advantages: Patients can talk and eat with 02 support when using a nasal cannula and a nasal cannula can be used in home settings. Disadvantages: It may irritate nasal and pharyngeal mucosa. If the flow is given for more than 6L, the FiO2 may vary. Mechanical ventilator (Option A): It is a device used to assist or control a patient's breathing. It delivers a mixture of air and oxygen, controls the respiratory rate and tidal volume, and provides positive pressure to support ventilation. It is more complex than a high-flow nasal cannula and is used in cases where more advanced respiratory support is needed. Infusion pump (Option B): It is a device used to deliver fluids, such as medications or nutrients, into a patient's body in a controlled manner. It is not related to respiratory support and is used for intravenous administration of fluids or medications. CPAP machine (Option C): Continuous Positive Airway Pressure is a respiratory therapy used to treat sleep apnea. It involves providing a continuous flow of air pressure to keep the airways open during sleep. A CPAP machine is different from a high-flow nasal cannula, which delivers a high flow rate of oxygen.

References:

Oxygen devices and delivery systems - PMC

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pdf Pages 1872-73, 2519-20, 2543

↑ *Back to this question in Part A*

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Q7: The colour of the nitrous oxide cylinder is? (Q859743)

A. Blue

B. Blue body with white shoulder

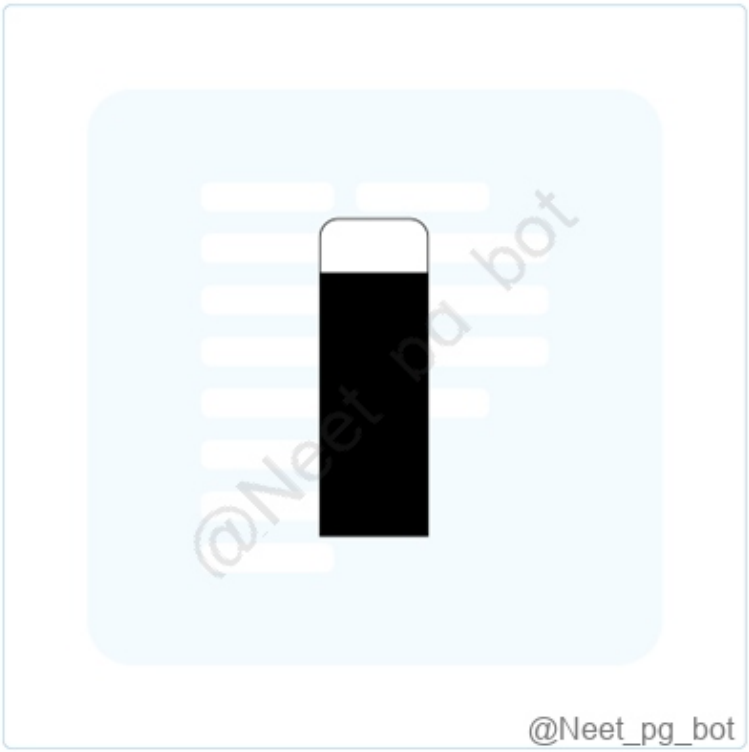
C. White

D. Black

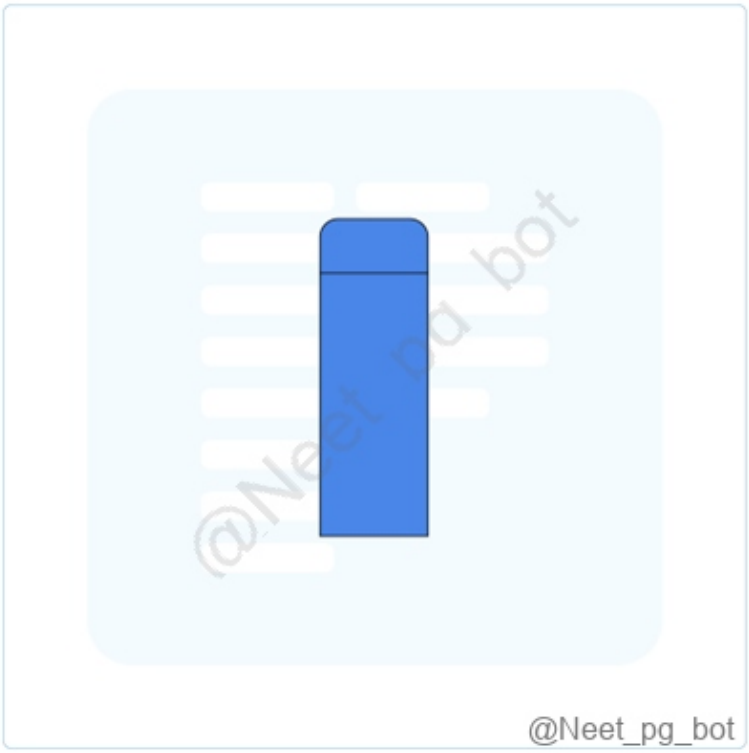
Correct Answer: A. Blue

Explanation: Nitrous oxide cylinders are color-coded blue. Gasses and their PIN Indices: Gas Cylinder color PIN Index system Air Black body with black & white shoulder 1,5 Oxygen Black body with white shoulder 2,5 N 2 O Blue 3,5 Carbon dioxide Grey 1,6 (> 7.5%) ; 2,6 (< 7.5%) Entonox Blue body with white shoulders 7 Cyclopropane Orange 3,6 Entonox: {{caption_text}} Composition: 50% N 2 O + 50% O 2 Cylinder color: Blue body with white shoulders PIN Index: 7 Uses: Only provides analgesia Used for short-term pain relief such as labor analgesia/dental procedures Disadvantage: No anesthesia effect

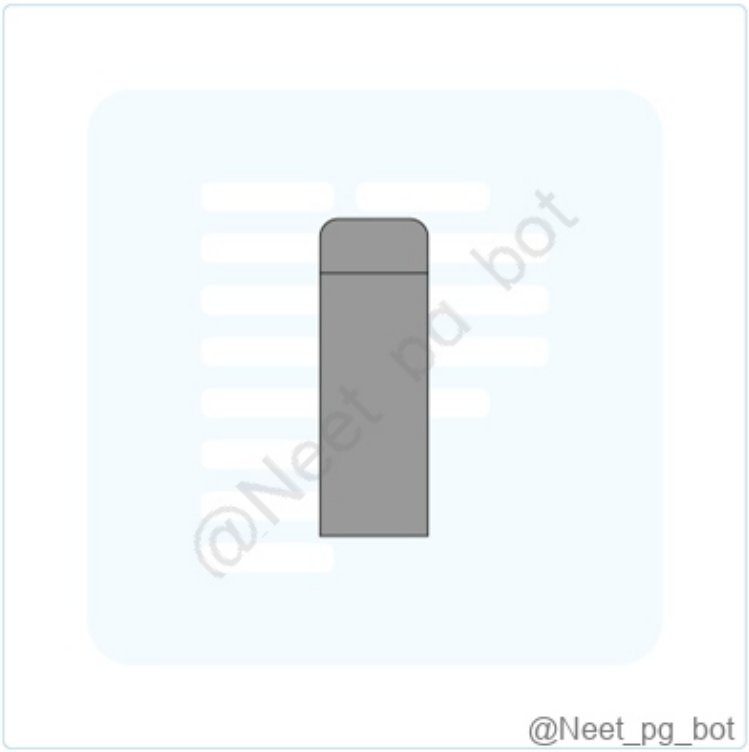




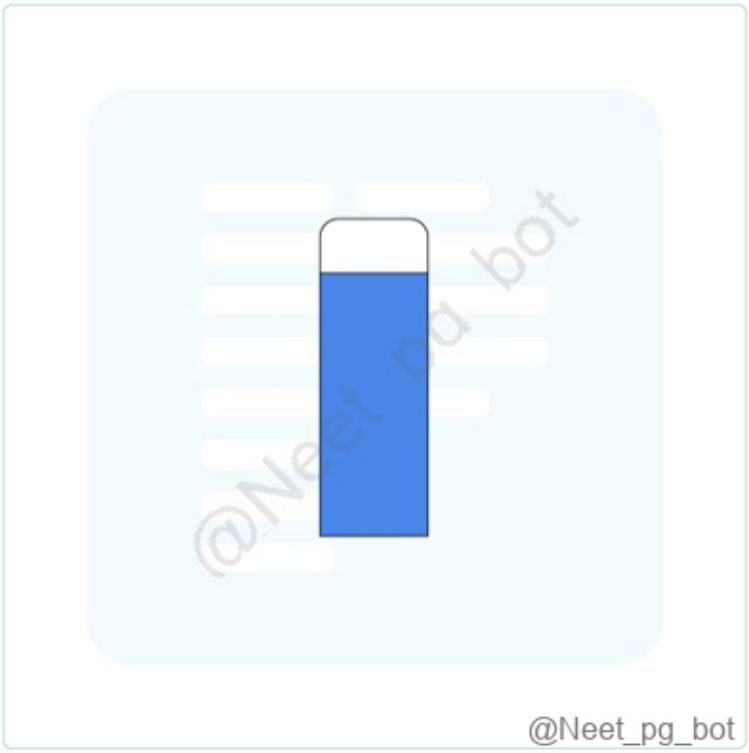
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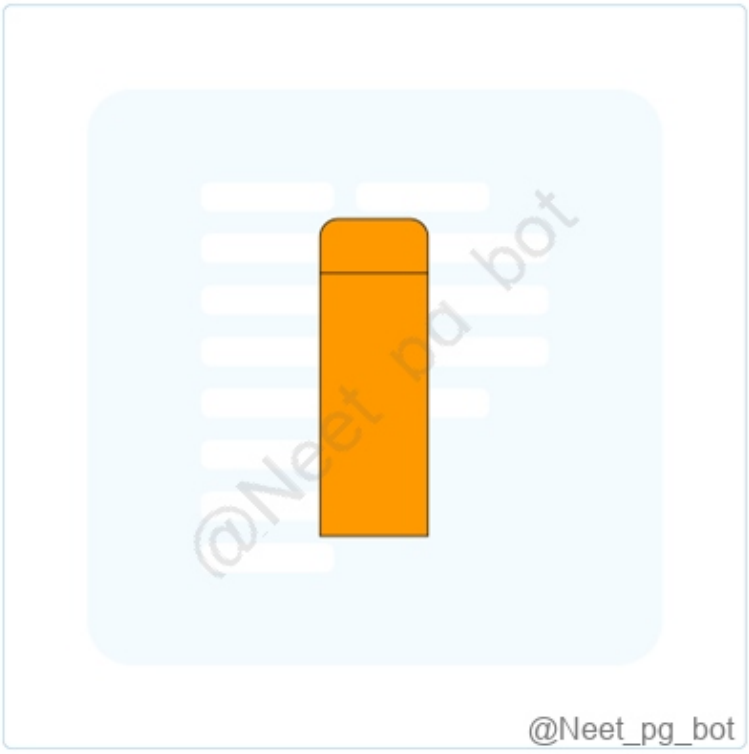
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References:

Dorsch & Dorsch Anaesthesia Equipment 5th Edition page - 7

Equipment in Anaesthesia and critical care by Daniel Aston pages - 6,10,137

↑ *Back to this question in Part A*

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Q8: Jackson Rees circuit is used for? (Q852831)

A. Pediatric anaesthesia

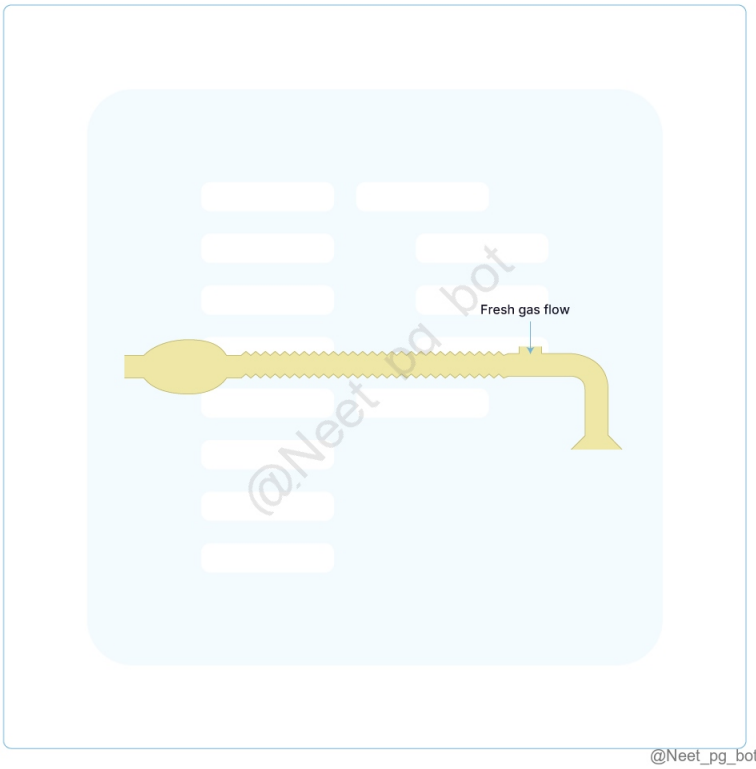
B. Cardiac anaesthesia

C. Neuro anaesthesia

D. Obstetric anaesthesia

Correct Answer: A. Pediatric anaesthesia

Explanation: Type of Circuit: The Jackson-Rees circuit is a modification of the Mapleson F system. Patient Population: It is commonly used in pediatric anesthesia , particularly in infants and small children. Jackson-Rees Circuit in Pediatric Anesthesia Feature Details Circuit Type Modification of Mapleson F circuit Common Usage Pediatric anesthesia Ventilation Mode Both controlled and spontaneous ventilation Dead Space Low, making it suitable for neonates and infants Advantages Low resistance, ease of use, and good control over ventilation Components Fresh gas flow, reservoir bag, expiratory limb with an open end Cardiac anaesthesia (Option B): Incorrect because the Jackson-Rees circuit is mainly used in pediatrics, whereas cardiac anesthesia typically requires closed-circuit ventilation with controlled settings. Neuro anaesthesia (Option C): Incorrect because neuroanesthesia patients require precise ventilation control, often achieved with mechanical ventilators. Obstetric anaesthesia (Option D): Incorrect because obstetric anesthesia mainly involves spinal, epidural, or general anesthesia with different breathing circuits.



References:

Daniel Aston Equipment in Anaesthesia and Critical Care, Pages 91, 92

↑ *Back to this question in Part A*

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Q9: In the operating theater, you observe the utilization of a particular vaporizer. Which of the listed gases would you anticipate it to comprise? (Q793427)

A. Desflurane

B. Sevoflurane

C. Halothane

D. Isoflurane



Correct Answer: B. Sevoflurane

Explanation: The vaporizer in the image can be identified as a Sevoflurane vaporizer based on its design and structural features , which differ from vaporizers for other agents. Key identifying features: 1. Variable-bypass vaporizer design (not heated, no power cable) The vaporizer shown is not electrically heated , and there is no power cord or temperature controller . Desflurane requires a heated, pressurized vaporizer (Tec 6) → bulky, metallic, with digital readouts, and always plugged in. Therefore, Desflurane is ruled out . 2. Modern compact build with wide dial and large reservoir window Sevoflurane vaporizers typically have: A broad concentration dial A large liquid reservoir window A sleek rectangular build (often chrome + black plastic) This matches the vaporizer in the image. 3. Filler port type Sevo vaporizers use a keyed agent-specific filling system (e.g., Quik-Fil / Key-Fill type), which is distinctively shaped. Isoflurane and halothane vaporizers often have different filler geometries . 4. Typical Sevoflurane branding pattern Even without text, many vaporizers have: Yellow or amber color coding A specific rectangular vaporizing chamber design used in newer sevo units The appearance in the image matches this standard sevoflurane vaporizer architecture.

References:

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↑ *Back to this question in Part A*

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• [10_Oxygen Therapy_ Mechanical Ventilation and Airway] 018 Previous Year Questions

« Back to Folder Directory

[10_Oxygen Therapy_ Mechanical Ventilation and Airway] 018 Previous Year Questions — Quick Jump

Q1 (p. 527)	*Q2 (p. 531)*	*Q3 (p. 532)*	*Q4 (p. 534)*	*Q5 (p. 535)*	*Q6 (p. 537)*
Q7 (p. 540)	*Q8 (p. 541)*	*Q9 (p. 542)*	*Q10 (p. 546)*	*Q11 (p. 547)*	*Q12 (p. 548)*
Q13 (p. 549)	*Q14 (p. 551)*	*Q15 (p. 553)*	*Q16 (p. 554)*	*Q17 (p. 555)*	*Q18 (p. 556)*
Q19 (p. 558)	*Q20 (p. 558)*	*Q21 (p. 559)*	*Q22 (p. 560)*	*Q23 (p. 561)*	

Q1: In conventional oxygen therapy, which device will deliver the highest FiO 2 ? (Q856584)

A. Venturi mask

B. Hudson mask

C. Non-rebreathing mask

D. High Flow Nasal Cannula

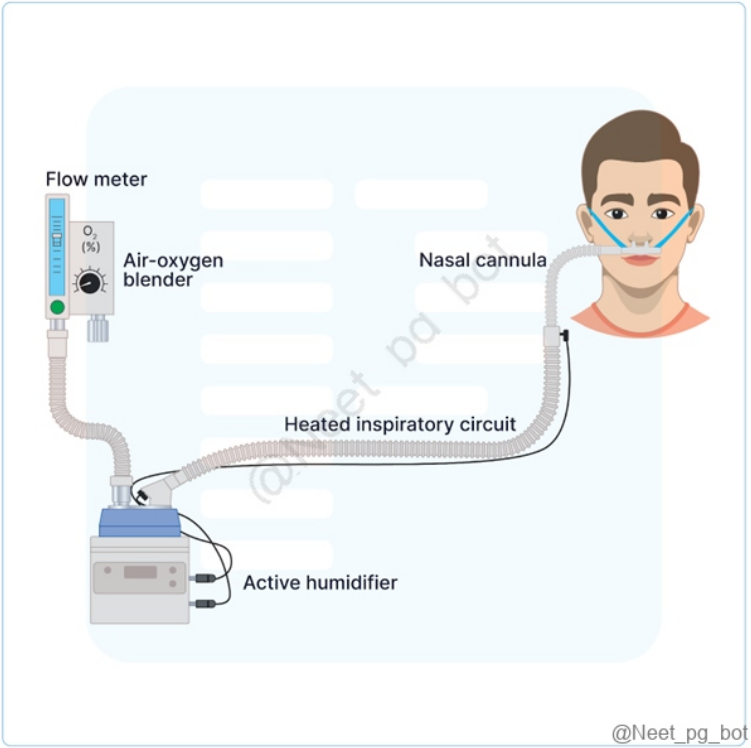
Correct Answer: C. Non-rebreathing mask

Explanation: Non-rebreathing mask (NRBM) delivers the highest FiO■ (up to 90–100%) among conventional oxygen devices because: It has a reservoir bag . One-way valves prevent room-air entrainment. High-Flow Nasal Cannula (HFNC): Can deliver very high FiO■ but is NOT classified as conventional oxygen therapy , hence not the answer. 1. High-Flow Devices: High-Flow Nasal Cannula (HFNC), Venturi mask 2. Low-Flow Devices: Nasal Prongs, Simple Face Mask, Non-Rebreather Mask (NRBM) Low-Flow Devices: Type of mask Nasal Prong Face Mask (Hudson mask) (Option B) NRBM (Option C) Flow rate 1 to 6 L 6 to 10 L 10 to 15 L FiO 2 25 to 45% 35 to 60% 65 to 95 % {{caption_text}} {{caption_text}} {{caption_text}} High-Flow Devices: High-Flow Nasal Cannula (HFNC), Venturi mask High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): Can deliver very high FiO■ but is NOT classified as conventional oxygen therapy , hence not the answer. Delivers warm, humidified oxygen up to 60 L/min Provides accurate high FiO■ (up to 100%) Generates >5 cm H■O positive airway pressure , similar to low-level CPAP Venturi Mask: (Option A) Fixed FiO■ but lower, 24–60% , high precision

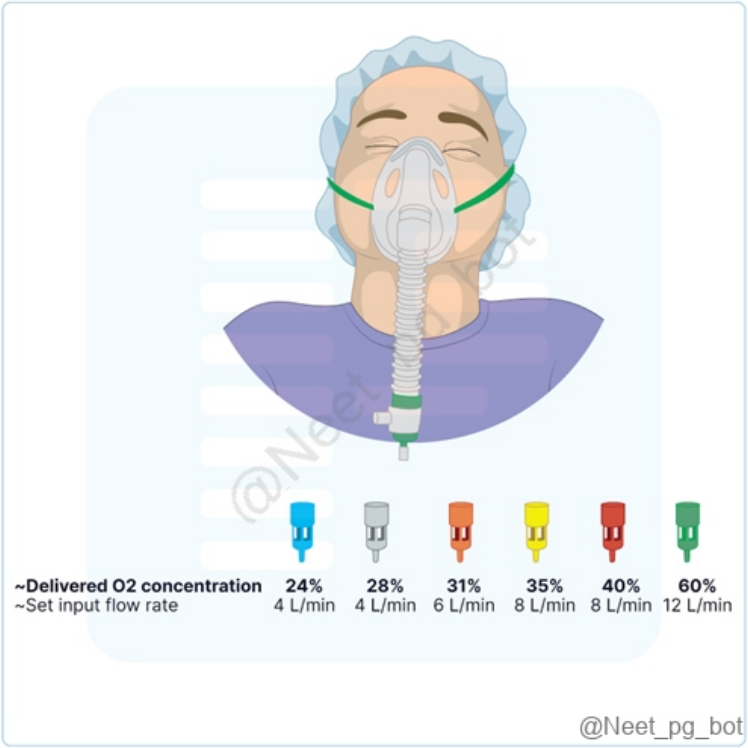

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Flow meter
O_2 (%)
Air-oxygen blender
Nasal cannula
Heated inspiratory circuit
Active humidifier
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References:

Miller’s Anesthesia, 9th edition, Page 2595

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 2507 to 2515

Barash Clinical Anesthesiology, 9th Edition, Page - 4841

Equipment in Anaesthesia and Critical Care, Page - 36

Davidson’s Principles and Practice of Medicine, 24th edition, page 202

https://www.ncbi.nlm.nih.gov/books/NBK526071/

↑ *Back to this question in Part A*

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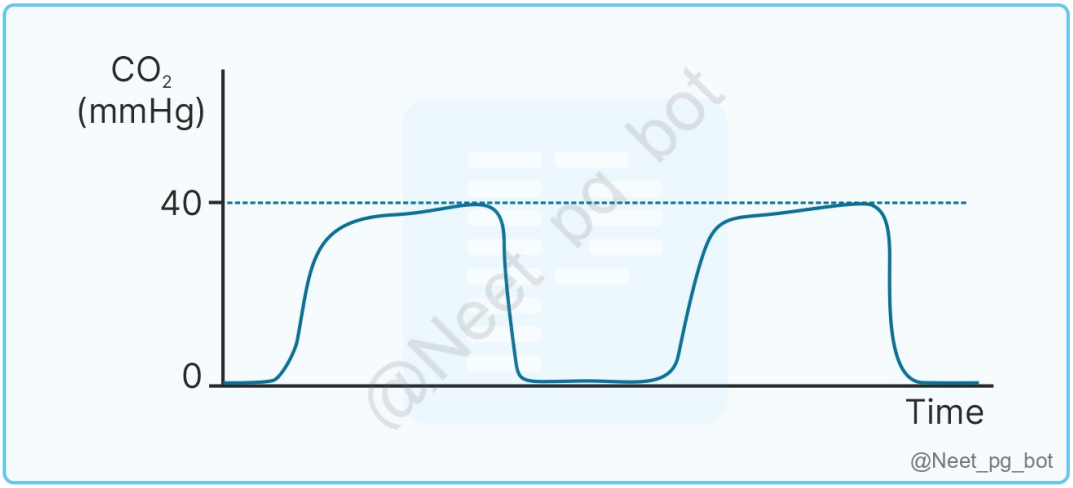
Q2: The waveform shown in the image represents which of the following physiological parameters? (Q866897)

A. Arterial oxygen saturation

B. End-tidal carbon dioxide

C. Functional residual capacity

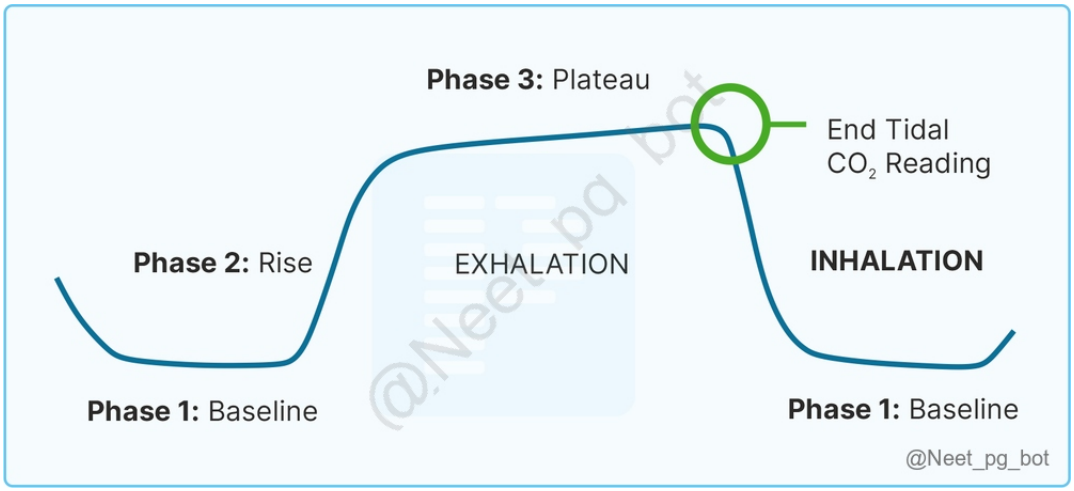
D. Tidal volume



Correct Answer: B. End-tidal carbon dioxide

Explanation: Correct Option B - End tidal carbon dioxide The image is of a waveform which represents end-tidal carbon dioxide (EtCO2). This is a capnography waveform, a non-invasive monitoring technique used in anesthesia to measure the concentration or partial pressure of carbon dioxide (CO2) at the end of each breath. A typical capnography waveform consists of four distinct phases: Phase I (Inspiration): The baseline represents a zero CO2 level, as the patient is inhaling fresh gas without any CO2. Phase II (Early Expiration): This phase shows a rapid increase in CO2 as the anatomical dead space is exhaled, mixing with alveolar gas. Phase III (Alveolar Plateau):

The CO2 concentration reaches a plateau as gas from the alveoli is exhaled. The end of this phase, point E, is the end-tidal CO2 value. Phase IV (Inspiration): A sharp downstroke to the baseline as inspiration begins and fresh gas dilutes the CO2 in the airway. Incorrect Options: Arterial oxygen saturation (SpO2) (Option A) : This is measured by a pulse oximeter and is displayed as a plethysmographic waveform, not a capnogram. The SpO2 waveform is a pulsatile wave that reflects blood flow and oxygenation, not the gas exchange pattern of respiration. Functional residual capacity (FRC) (Option C): FRC is a lung volume, the amount of air remaining in the lungs after a normal expiration. It is not measured with a waveform but through specific pulmonary function tests. Tidal volume (VT) (Option D): Tidal volume is the amount of air inhaled or exhaled in a single breath. While the capnogram provides information about the breath cycle, the waveform itself does not directly measure the volume of air. Instead, it measures the concentration of CO2 over time, from which tidal volume can be inferred through other calculations.



References:

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Q3: In the image shown, identify the function of the marked structure on the endotracheal tube. (Q866891)

A. Facilitation of vocal cord visualization

B. Monitoring airway pressure

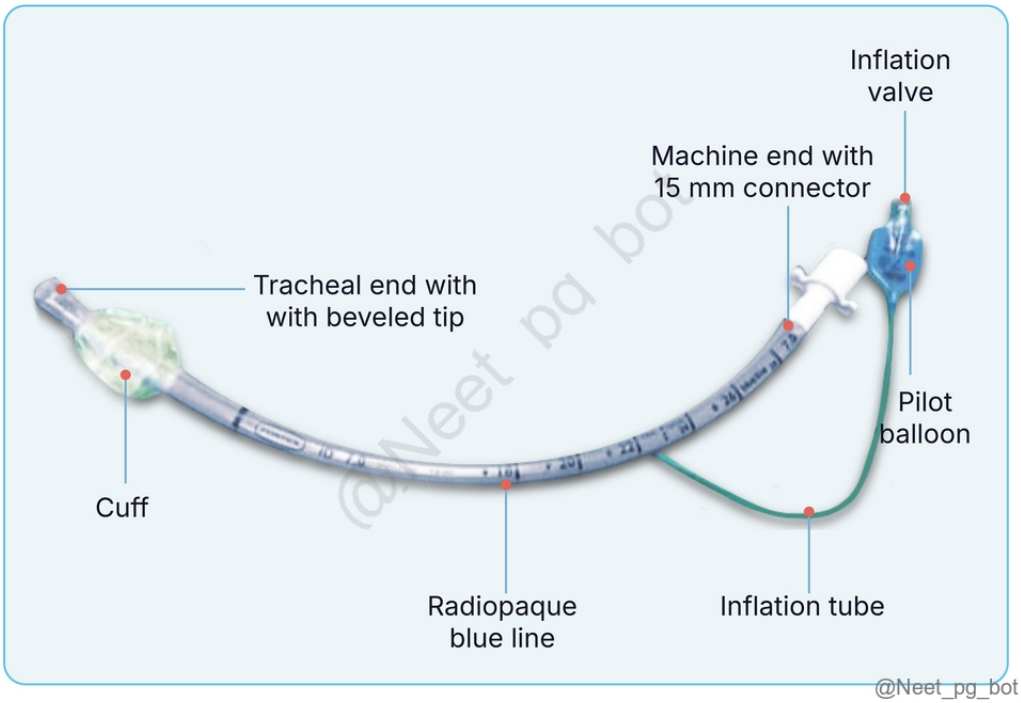
C. Prevention of air leakage and aspiration

D. Suctioning of lower respiratory tract secretions



Correct Answer: C. Prevention of air leakage and aspiration

Explanation: The marked structure is the inflatable cuff of the endotracheal tube. When inflated, it creates a seal between the tube and the tracheal wall. This seal prevents air leakage during positive pressure ventilation, ensuring efficient delivery of tidal volume. It also reduces the risk of aspiration by blocking secretions from the upper airway from entering the lungs. Overinflation can cause tracheal mucosal injury; thus, cuff pressure should be maintained between 20–30 cm H■O. Incorrect Options: Facilitation of vocal cord visualization (Option A) : Visualization is achieved during intubation using laryngoscopy, not by the cuff. Monitoring airway pressure (Option B): This is done via ventilator circuits, not by the cuff. Suctioning of lower respiratory tract secretions (Option D): Requires a suction catheter, not the cuff.



References:

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↑ *Back to this question in Part A*

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Q4: Which of the following conditions is a contraindication for the use of bi-level positive airway pressure? (Q860376)

A. Obstructive sleep apnea

B. Unconscious/ sedation

C. High oxygen levels

D. Low partial pressure of oxygen

Correct Answer: B. Unconscious/ sedation

Explanation: BiPAP (bilevel positive airway pressure) therapy is best for short-term use and in patients who can cough and protect their airway. Indications for using BiPAP machine COPD Obstructive sleep apnea (Option A) Patients with conditions causing low partial pressure of oxygen (Option D) Contraindications: Absolute contraindication Relative contraindication Facial trauma/ burn Altered mental staus/ unconscious (Option B) Fixed

upper airway obstruction Inability to protect the airway Active vomiting Life threatening hypoxemia Respiratory or cardiac arrest

References:

https://www.ncbi.nlm.nih.gov/books/NBK578188/

↑ *Back to this question in Part A*

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Q5: Identify the given instrument? (Q859731)

A. Guedel airway

B. Laryngeal mask airway

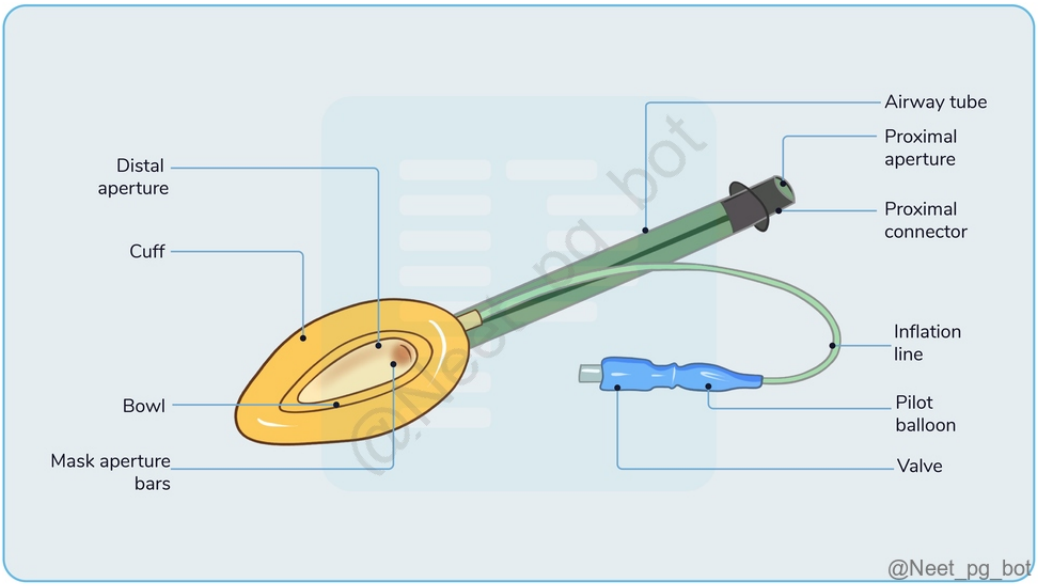
C. Endotracheal tube

D. Nasogastric tube

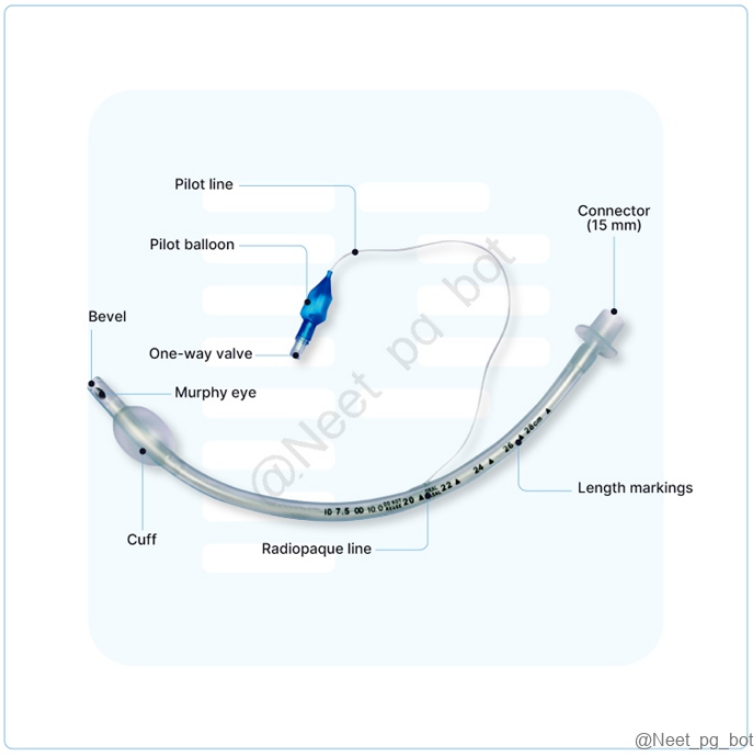


Correct Answer: B. Laryngeal mask airway

Explanation: A laryngeal mask airway (LMA) is a supraglottic airway device used to secure the airway in situations requiring anaesthesia or emergency management. It consists of: A tube connected to an inflatable mask that is placed over the laryngeal inlet. A cuff that is inflated to create a seal around the larynx. It is commonly used in: Daycare surgeries. Scenarios requiring less invasive airway management than an endotracheal tube. Patients where bag-mask ventilation is challenging. Guedel airway (option A): This is an oropharyngeal airway device used to keep the tongue from obstructing the airway. It looks like a rigid, curved plastic or rubber tube. {{caption_text}} Endotracheal tube (option C): This is a flexible tube inserted into the trachea through the mouth or nose to provide ventilation. It does not have an inflatable cuff like the LMA shown in the image. {{caption_text}} Nasogastric tube (option D): This is a thin, flexible tube used for feeding or suctioning gastric contents, inserted through the nose and extending into the stomach.







References:

Morgan and Mikhail's Clinical Anaesthesia, 5th Edition, Page 319

↑ *Back to this question in Part A*

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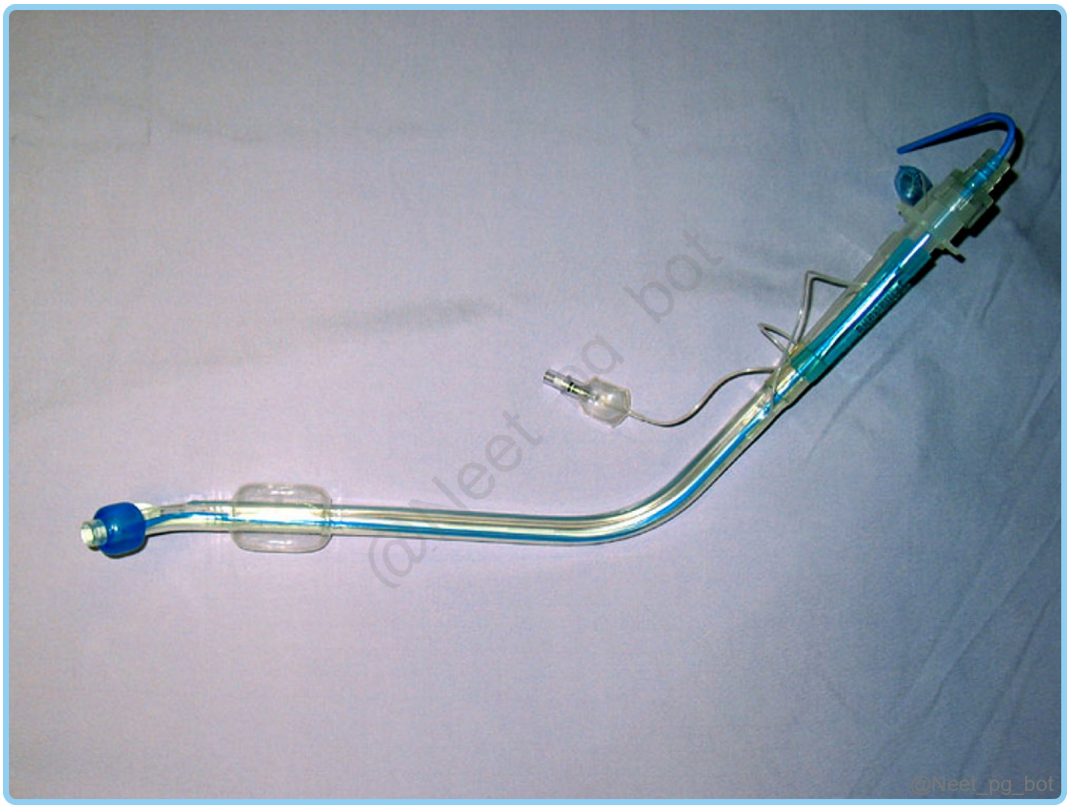
Q6: What is this device called? (Q859725)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

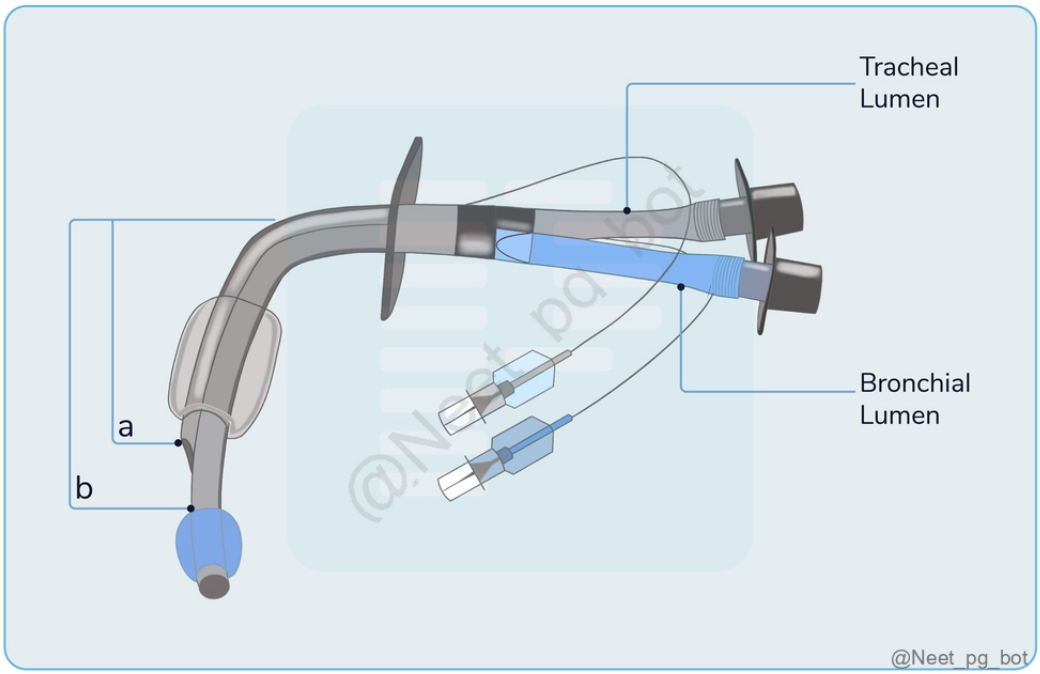
C. Ring-adair-elwin type

D. Endotracheal tubes equipped with bronchial blockers

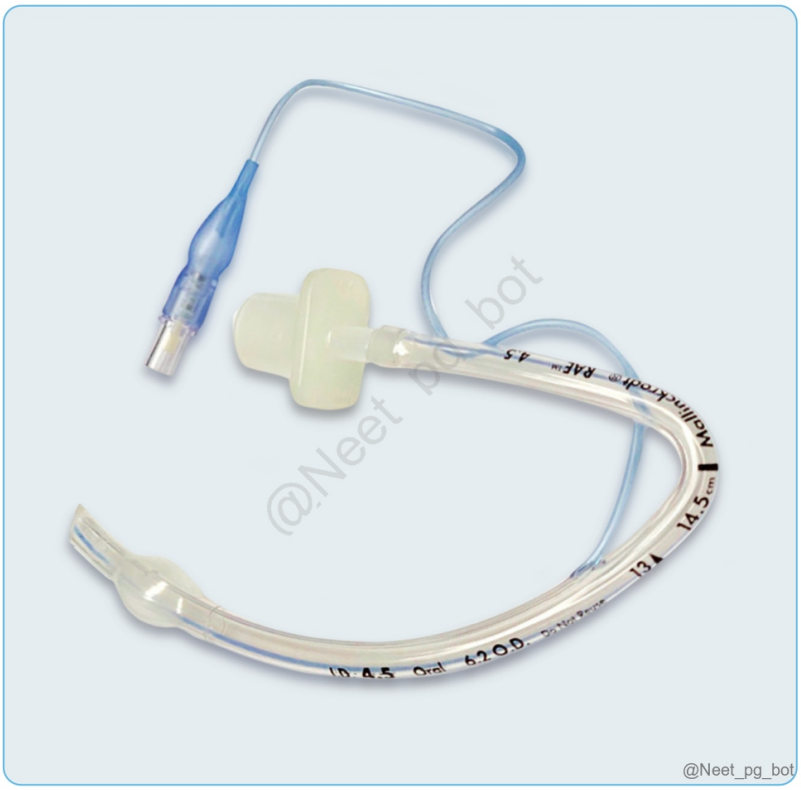


Correct Answer: B. Double-lumen endotracheal tube

Explanation: A double-lumen endotracheal tube is designed with two separate lumens or channels. It allows independent ventilation of each lung during thoracic surgeries or procedures requiring lung isolation. The tube has one lumen that enters the trachea and provides ventilation to one lung, while the other lumen enters the bronchus of the opposite lung, allowing selective lung collapse and ventilation control. Armored endotracheal tube (Option A): An armored endotracheal tube is a specialized type of endotracheal tube that has an internal wire coil or reinforcement. This provides rigidity and prevents kinking or collapse of the tube, ensuring a patent airway. Armored tubes are typically used in situations where there is a risk of tube compression or obstruction, such as during head and neck surgery. {{caption_text}} Ring-Adair-Elwin (RAE) tube (Option C): The Ring-Adair-Elwin tube is a type of cuffed endotracheal tube that has a preformed curvature near the distal end. This curved design helps to facilitate placement and positioning of the tube within the trachea. RAE tubes are commonly used in anesthesia and critical care settings. {{caption_text}} Endotracheal tubes equipped with bronchial blockers (Option D): These are endotracheal tubes that have an additional component called a bronchial blocker. A bronchial blocker is a small balloon-tipped catheter that can be inserted through the endotracheal tube and into one of the main bronchi. It is used to selectively block the airflow to one lung while allowing ventilation of the other lung. This technique is employed for lung isolation during thoracic surgeries or procedures.


Tracheal
Lumen
Bronchial
Lumen
a
b
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References:

Morgan and Mikhail's Clinical Anaesthesia, 5th Edition, Page 321, 322, 764

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Q7: Which of the following post-bronchodilator pulmonary function test (PFT) results would indicate airflow obstruction requiring further evaluation in a 50-year-old male with ASA Grade III status? (Q858067)

A. FEV1<0.85 and FEV1/FVC<0.8

B. FEV1<0.85 and FEV1/FVC<0.75

C. FEV1<0.85 and FEV1/FVC<0.7

D. FEV1<0.8 and FEV1/FVC<0.75

Correct Answer: C. FEV1<0.85 and FEV1/FVC<0.7

Explanation: FEV1 below 0.85 liters and FEV1/FVC ratio less than 0.7 indicate significant airflow limitation, suggesting conditions like COPD. In patients with grade 3 ASA, further evaluation, including lung volume measurements or gas diffusion capacity assessment, is needed to determine the severity and type of lung disease. FEV1 < 0.85 and FEV1/FVC < 0.8(Option A): An FEV1/FVC ratio of 0.8 is normal, usually not needing more assessment. FEV1 < 0.85 and FEV1/FVC < 0.75 (Option B): An FEV1/FVC ratio of 0.75 suggests airflow limitation, while an FEV1 below 0.85 liters indicates reduced air volume expelled in the first second. Despite the exact FEV1/FVC ratio, a low FEV1 necessitates further evaluation. FEV1 < 0.8 and FEV1/FVC < 0.75 (Option D): An FEV1 below 0.8 liters suggests significant airflow limitation, warranting further evaluation. However, with an FEV1/FVC ratio of 0.75 within the normal range, immediate additional assessment may not be necessary

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC7898324/

↑ *Back to this question in Part A*

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Q8: A patient in the ICU with an endotracheal tube now needs a tracheostomy tube. Which type of tube will you use? (Q857815)

A. Uncuffed tracheostomy tube

B. Cuffed tracheostomy tube

C. Metallic tracheostomy tube

D. Endotracheal tube

Correct Answer: B. Cuffed tracheostomy tube

Explanation: Cuffed tracheostomy tubes are commonly used for patients who require mechanical ventilation or have an increased risk of aspiration. The cuff creates a seal around the trachea, preventing air leaks and minimizing the risk of aspiration of secretions, food, or other materials into the lungs. Uncuffed tracheostomy tube (Option A): An uncuffed tracheostomy tube has no inflatable cup. These are most commonly used in the neonatal population or for patients who can manage their own secretions. These allow airway clearance but don't protect from aspiration. Metallic tracheostomy tube (Option C): A 2-3 inch long curved metal or plastic tube placed in a surgically created opening in the trachea to keep it open. It is indicated in case of obstruction in the upper airway Establishes and maintains a secure airway when it is unsafe to do so via the mouth or nose, in cases of severe facial, head, or neck injuries, for bronchial hygiene and secretion removal, and to provide airway protection in patients with neuromuscular disorders. Endotracheal tube (Option D): It is made of polyvinyl chloride. The main indication is to secure a definitive airway when there is the inability to maintain airway patency, inability to protect the air against aspiration, failure to ventilate, failure to oxygenate, and anticipation of a deteriorating course leading to respiratory failure.

References:

https://journals.sagepub.com/doi/pdf/10.1177/0310057X0002800609?utm

↑ *Back to this question in Part A*

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Q9: A COVID patient required oxygen therapy. Which of the following cylinders should be used to provide oxygen for this patient? [(Q857562)

A. 1

B. 2

C. 3

D. 4

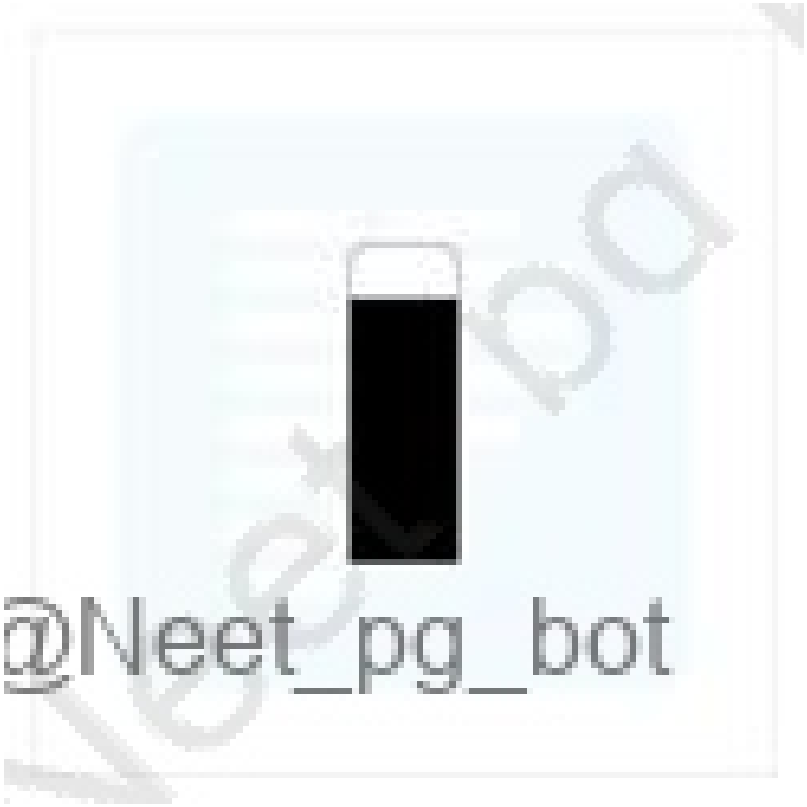


Correct Answer: A. 1

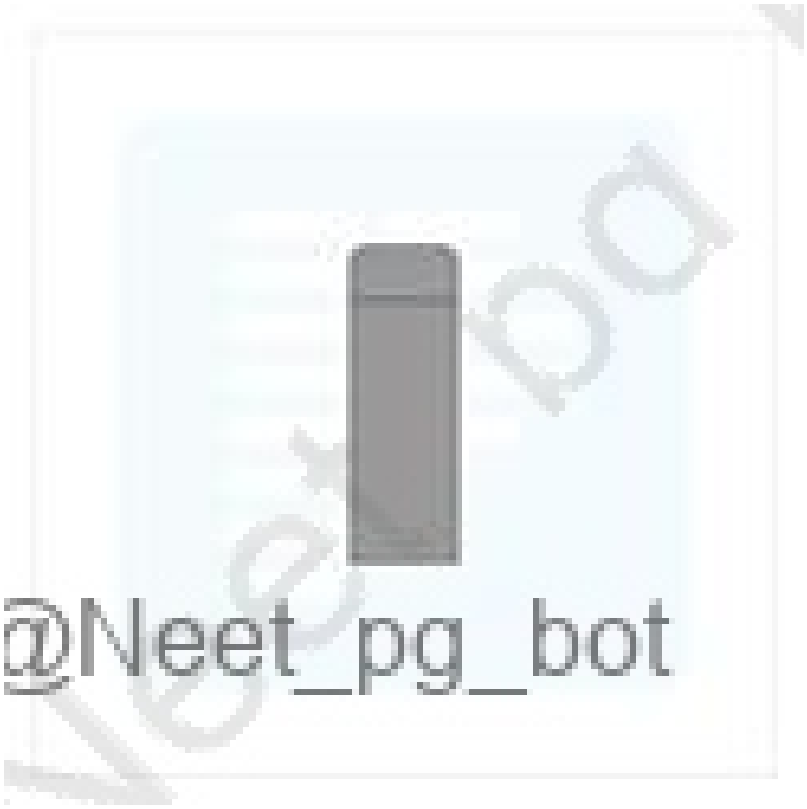
Explanation: The first cylinder (black body with a white shoulder) is the one to be used for oxygen therapy for the COVID-19 patient, as it contains medical oxygen. Gasses and their PIN Indices: Gas Cylinder color Image PIN Index system Air Black body with black & white shoulder {{caption_text}} 1,5 Oxygen Black body with white shoulder {{caption_text}} 2,5 N2O Blue {{caption_text}} 3,5 Carbon dioxide Grey {{caption_text}} 1,6 (> 7.5%) ; 2,6 (< 7.5%) Entonox Blue body with white shoulders {{caption_text}} 7 Cyclopropane Orange

{{caption_text}} 3,6






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References:

Dorsch & Dorsch Anaesthesia Equipment 5th Edition page - 7

Equipment in Anaesthesia and critical care by Daniel Aston pages - 6,10,137

↑ *Back to this question in Part A*

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Q10: The mask given below works on which of the following principles? (Q857036)

A. Bohr effect

B. Boyle's principle

C. Bernoulli principle

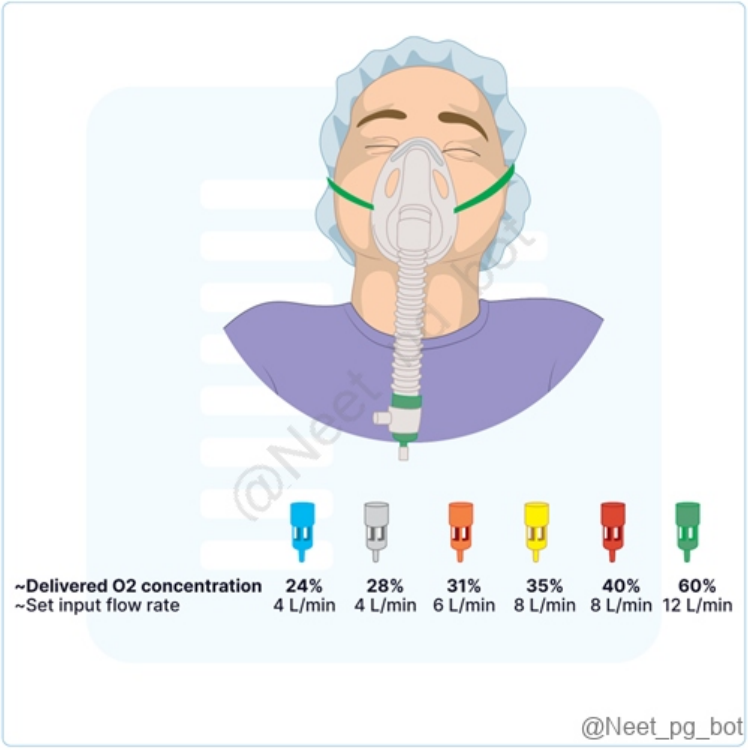
D. Mapleson's circuit



Correct Answer: C. Bernoulli principle

Explanation: The picture depicts a High Flow Venturi mask that uses Bernoulli’s principle to deliver a predetermined and fixed oxygen concentration to the patient. This principle states that as the velocity of a fluid (in this case, oxygen) increases, the pressure within the fluid decreases. The mask uses this principle to entrain room air when pure oxygen is delivered through a small orifice, resulting in a high-velocity jet. This creates a predictable and controlled oxygen concentration that is delivered to the patient■ Venturi Mask: Is a high-flow device with fixed performance that delivers a precise concentration of oxygen (FiO■) by mixing oxygen with

ambient air at specific flow rates, typically ranging from 2 to 15 L/min. It is often used in patients requiring controlled oxygen therapy, such as those with COPD. Color coding of Venturi mask Color FiO2 Require Flow rate (L/min) Blue 24% 4 White 28% 4 Orange 31% 6 Yellow 35% 8 Red 40% 8 Green 60% 12 Bohr effect (Option A): describes how hemoglobin's oxygen-binding affinity decreases in response to increased levels of carbon dioxide and decreased pH, facilitating oxygen release to tissues. This physiological phenomenon pertains to blood gas exchange Boyle's principle (Option B): states that the pressure of a gas is inversely proportional to its volume at a constant temperature. Mapleson’s circuits (Option D): are Semi-closed types of Breathing circuits used during anesthesia to deliver oxygen and anesthetic agents and effectively washout CO2.



References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC10661642/

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 2507 to 2515

↑ *Back to this question in Part A*

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Q11: Which of the following is not a clear benefit of using high-pressure oxygen via nasal cannula (Q857027)

A. Decreases the need for intubation

B. Reduces nasopharyngeal dead space

C. Heating and humidification

D. PEEP

Correct Answer: A. Decreases the need for intubation

Explanation: High-flow oxygen therapy delivered via nasal cannula, also known as high-flow nasal cannula (HFNC) therapy, has several benefits, but it does not necessarily decrease the need for intubation in all cases. Compared to the other options, Option A is the least clear benefit of using HFNC. High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): It works by delivering warmed & humidified gas , preventing nasal mucosa drying and overcoming the limitations of traditional cannulas. (Option C) HFNC therapy delivers a high flow of oxygen that washes out the nasopharyngeal dead space, allowing for more efficient ventilation and oxygenation. (Option A) Provide flows up to 60 L/min , allowing for accurate delivery of high FiO2 levels Generates positive airway pressures of over 5 cm H2O, making it a potential substitute for low-level CPAP (Conitinous Positive Airway Pressure). Can provide a degree of positive end-expiratory pressure. (Option D) Can deliver 100% Fio2. Advantages: Better tolerance compared to traditional face masks, allowing for greater comfort during oxygen therapy. Accurate delivery of high FiO2 in various clinical situations. Improved mortality rates in patients experiencing acute hypoxemic respiratory failure due to Sepsis and SARS-CoV-2 infection. Disadvantages: Higher cost compared to standard oxygen delivery devices. Limited availability outside of critical care settings

References:

Morgan & Mikhail's Clinical Anesthesiology

↑ *Back to this question in Part A*

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Q12: A 32-year-old man with blunt chest trauma following a high-speed motor vehicle collision is intubated in the emergency department for worsening respiratory distress. Mechanical ventilation is initiated. Which of the following initial ventilator settings is INCORRECT for this patient? (Q856769)

A. Respiratory rateof 12 breaths/min

B. PEEP of 5 cm H■O

C. FIO of 100%

D. Tidal volume of 12ml/kg of actual BW

Correct Answer: D. Tidal volume of 12ml/kg of actual BW

Explanation: In patients with blunt chest trauma, lung-protective ventilation strategies are crucial to minimize ventilator-induced lung injury (VILI). One of the key components of lung-protective ventilation is limiting tidal volume. The generally recommended tidal volume for patients with acute respiratory distress syndrome (ARDS), which includes many cases of severe blunt chest trauma, is 6 ml/kg of predicted body weight (not actual body weight) to reduce the risk of barotrauma.Using 12 ml/kg will cause over-distension of fragile alveoli and sharply increases mortality in lung injury. Lung Protective Ventilation is the current standard in mechanical ventilation which includes the following: Low TV to prevent barotrauma Increase RR-RR can be increased up to 30-35/min to maintain minute ventilation Increase PEEP-Can increase PEEP from 4-12 even up to 16 cm H 2 O if needed to prevent collapse of alveoli especially in ARDS FiO 2 < 0.6 or 60% - If FiO 2 > 60%, oxygen radical formation can occur causing worsening of symptoms Respiratory rate - 12 breaths/min (Option A): It is within the normal range for an adult and can be an appropriate initial setting, although the specific rate may need adjustment based on the patient's condition and blood gas values. PEEP-5 cm H 2 O (Option B): Positive end-expiratory pressure (PEEP) is used to prevent alveolar collapse and improve oxygenation. A setting of 5 cm H 2 O is a common starting point and can be adjusted based on the patient's oxygenation status. FiO 2 -100% (Option C): In the initial stages, a high fraction of inspired oxygen (FiO 2) might be necessary to ensure adequate oxygenation, but it should be titrated down as soon as possible to the lowest level necessary to maintain adequate oxygen saturation, in order to minimize the risk of oxygen toxicity.

References:

Barash Clinical Anesthesiology. 9th edition. Pdf Page 4841-4846

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: What is the maximum rate of oxygen flow that can be maintained using a traditional oxygen mask? (Q856582)

A. 5 L/min

B. 15 L/min

C. 10 L/min

D. 20 L/min

Correct Answer: C. 10 L/min

Explanation: A conventional oxygen mask , also known as a simple face mask, is a device used for oxygen delivery to patients who require supplemental oxygen. The mask covers the nose and mouth, allowing the patient to breathe in a mixture of oxygen and room air. The maximum oxygen flow rate that can be delivered with a conventional oxygen mask is typically around 10 L/min . This flow rate ensures that a sufficient amount of oxygen is delivered to the patient, maintaining an adequate oxygen concentration or fraction of inspired oxygen (FiO 2). Higher flow rates may not significantly increase the delivered oxygen concentration and may lead to discomfort for the patient. Type of mask Nasal Prong Face Mask (Simple face mask) NRBM Flow rate 1 to 6 L(Low flow) 6

to 10 L(Low flow) 10 to 15 L(High flow) FiO 2 25 to 45% 35 to 60% 65 to 95 % {{caption_text}} {{caption_text}} {{caption_text}}







References:

Miller’s Anesthesia, 9th edition, Page 2595

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 2507 to 2515

↑ *Back to this question in Part A*

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Q14: A 42-year-old man who was under home isolation after testing positive for COVID-19 develops breathing difficulty and is brought to the ER. The patient is alert and responsive but is breathing rapidly. SpO 2 is measured to be 86%. He is administered oxygen via a face mask with a reservoir bag with a flow rate of 10 L/min. After a trial of one hour, his SpO 2 is 88%. What is the next step in management? (Q856569)

A. Increase flow rate to 15 L/min

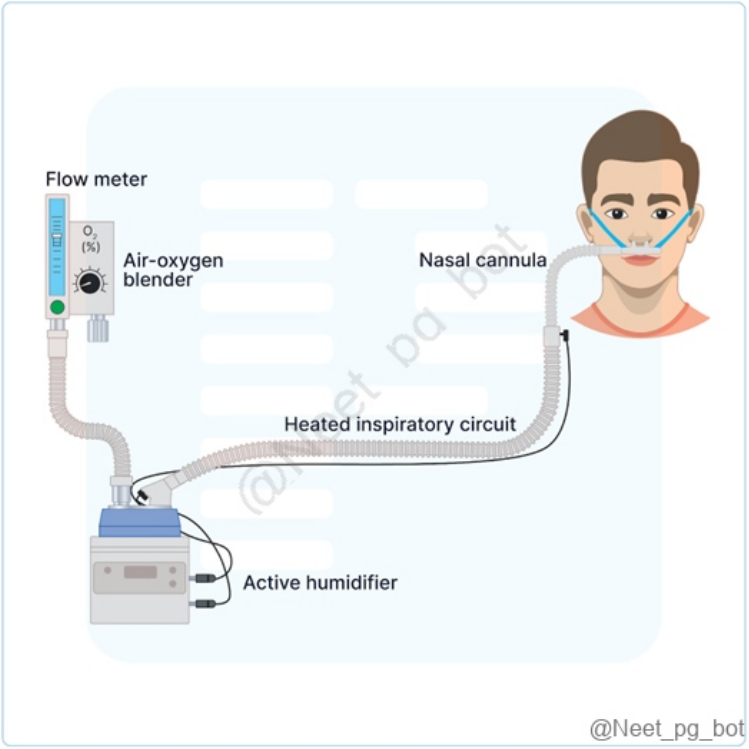
B. High-flow nasal cannula oxygen therapy

C. Endotracheal intubation

D. No specific intervention is necessary

Correct Answer: B. High-flow nasal cannula oxygen therapy

Explanation: In this scenario, the patient is experiencing hypoxemia with a SpO■ of 86% despite receiving oxygen via a non-rebreather mask at 10 L/min for one hour, resulting in only a slight improvement to 88%. This indicates inadequate oxygenation and suggests the need for more effective respiratory support. The most appropriate next step is to initiate high-flow nasal cannula oxygen therapy to improve oxygenation and reduce the work of breathing. High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): It works by delivering warmed & humidified gas , preventing nasal mucosa drying, and overcoming the limitations of traditional cannulas. Provide flows up to 60 L/min , allowing for accurate delivery of high FiO 2 levels Generates positive airway pressures of over 5 cm H 2 O, making it a potential substitute for low-level CPAP (Conitinous Positive Airway Pressure). Can deliver 100% FiO 2 Advantages: Better tolerance compared to traditional face masks, allowing for greater comfort during oxygen therapy. Accurate delivery of high FiO 2 in various clinical situations. Improved mortality rates in patients experiencing acute hypoxemic respiratory failure due to Sepsis and SARS-CoV-2 infection. Disadvantages: Higher cost compared to standard oxygen delivery devices. Limited availability outside of critical care settings Incorrect Options: Increase flow rate to 15 L/min (Option A): May provide a small improvement in oxygenation. However, given that the patient's SpO 2 only improved from 86% to 88% after one hour of oxygen therapy at 10 L/min, a further increase in flow rate alone is unlikely to be sufficient. Endotracheal intubation (Option C) is a more invasive procedure typically reserved for patients with severe respiratory distress who cannot maintain adequate oxygenation or ventilation despite non-invasive interventions. No specific intervention is necessary (Option D): After an hour of oxygen therapy, the patient's SpO 2 is still below the target range, indicating that a specific intervention is required to improve oxygenation.





References:

Miller’s Anesthesia, 9th Edition, Pages - 2543,2554

Barash Clinical Anesthesiology, 9th Edition, Page - 4841

Equipment in Anaesthesia and Critical Care, Page - 36

Davidson’s Principles and Practice of Medicine, 24th edition, page 202

https://www.ncbi.nlm.nih.gov/books/NBK526071/

↑ *Back to this question in Part A*

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Q15: What is the most effective way to verify the placement of the endotracheal tube in a 30-year-old male patient who has been intubated for surgery by a final-year resident? (Q856169)

A. X-ray chest

B. Auscultation

C. End-tidal CO■ concentration

D. Chest rise

Correct Answer: C. End-tidal CO■ concentration

Explanation: End-tidal CO■ concentration (capnography) : This is the most reliable and effective method to confirm endotracheal tube placement. A sustained detection of CO■ in exhaled air indicates proper placement in the trachea and confirms ventilation. It provides immediate, continuous, and quantitative confirmation. Capnography is the gold standard for confirming endotracheal tube placement during intubation due to its accuracy and real-time feedback. Incorrect Options: X-ray chest (Option A) : Useful for confirming tube depth or ruling out complications like pneumothorax, but it is not practical for immediate verification of tube placement. Auscultation (Option B) : Helps assess ventilation by listening for bilateral breath sounds, but it is less reliable as it can miss esophageal intubation or identify asymmetrical placement. Chest rise (Option D) : A visible chest rise may indicate ventilation but does not confirm tracheal placement, as it can occur with esophageal intubation or bag-mask ventilation.

References:

Morgan and Mikhail's Clinical Anesthesiology, Edition 5, Pg 127, 328, 1187

↑ *Back to this question in Part A*

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Q16: Identify the mask in the image used for patients with COVID-19 infection. (Q855539)

A. Venturi mask

B. Hudson mask

C. Nebuliser

D. Non-rebreathing mask



Correct Answer: D. Non-rebreathing mask

Explanation: The Non-rebreathing mask (NRBM) is preferred for oxygen delivery in patients with COVID-19 infection requiring high concentrations of oxygen without risking aerosol generation. This mask delivers a high concentration of oxygen (60–90%) by using a one-way valve and a reservoir bag. It minimizes the rebreathing of exhaled air and limits aerosol dispersion, making it suitable for respiratory infections like COVID-19. Venturi mask (Option A): Delivers precise oxygen concentrations (24–50%) and is commonly used for COPD patients. However, it is not suitable for high oxygen demands in severe COVID-19 cases. Hudson mask (Option B): Delivers 40–60% oxygen but lacks a reservoir bag for higher concentrations and does not effectively prevent aerosol generation. Nebuliser (Option C): Used to administer aerosolized medications, but it can increase the risk of aerosol generation, making it less suitable for infectious respiratory conditions. The Non-rebreathing mask is the most appropriate for patients with severe COVID-19 requiring high-flow oxygen.

References:

Morgan and Mikhail's Clinical Anesthesiology, Edition 6, Pg 1333, 1334

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: What should be the next course of action in managing a patient with pneumonia who is on a ventilator, weighs 50 kg, has a respiratory rate of 14 breaths per minute, a

bicarbonate level of 18, a pH of 7.33, a paCO2 level of 48 mmHg, a Pao2 level of 110 mmHg, a PEEP of 12 cm H■O, a tidal volume of 420 mL, and a SpO2 level of 100% with an FiO2 of 90%? (Q854618)

A. Increase PEEP

B. Decrease FiO■

C. Decrease RR

D. Increase tidal volume

Correct Answer: B. Decrease FiO■

Explanation: Lung Protective Ventilation is the current standard in mechanical ventilation. If Fio2 > 60%, oxygen radical formation can occur causing worsening of symptoms. FIO2 has to be decreased in this patient to prevent free radical formation and since PaO2 is higher than normal. Clinical Modes of Management in ARDS Lung Protective Ventilation (LPV): Tidal volumes : ≤6 mL/kg of ideal body weight to prevent alveolar overdistension. (Option D ruled out) PEEP : Use moderate levels to avoid alveolar collapse. (Option A ruled out) Plateau pressure : Limit to ≤30 cm H■O to minimize barotrauma and pneumothorax. Permissive hypercapnia : Allow mild-to-moderate respiratory acidosis to avoid lung injury. (Option C ruled out) FiO■ : Minimize while targeting PaO■ >55 mmHg or SpO■ >88%. (Option B) Recruitment Strategies: Use of PEEP to recruit collapsed alveoli and improve oxygenation. Prone positioning : Shown to improve survival in severe ARDS (P/F ratio ≤150). Advanced Techniques: Neuromuscular blockade : Early use may benefit patients with severe ARDS (P/F ratio <150). ECMO : Considered for severe, refractory ARDS in specialized centers. Rescue Therapies (Limited evidence for survival benefit): High-frequency oscillatory ventilation : No significant outcome improvements. Inhaled vasodilators (iNO, prostaglandins): Transient oxygenation improvement but no long-term benefit. Fluid Management: Conservative fluid management : Improves oxygenation and ventilator-free days. Corticosteroids : Mixed results; may benefit ARDS from bacterial sepsis but not viral pneumonia (except SARS-CoV2).

References:

Barash Clinical Anesthesiology. 9th edition. Pdf Page 4841-4846

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: A neonate is brought to the pediatric ER in acute respiratory distress. On examination, the abdomen is scaphoid. Which of the following should not be performed in this patient? (Q854615)

A. PPV

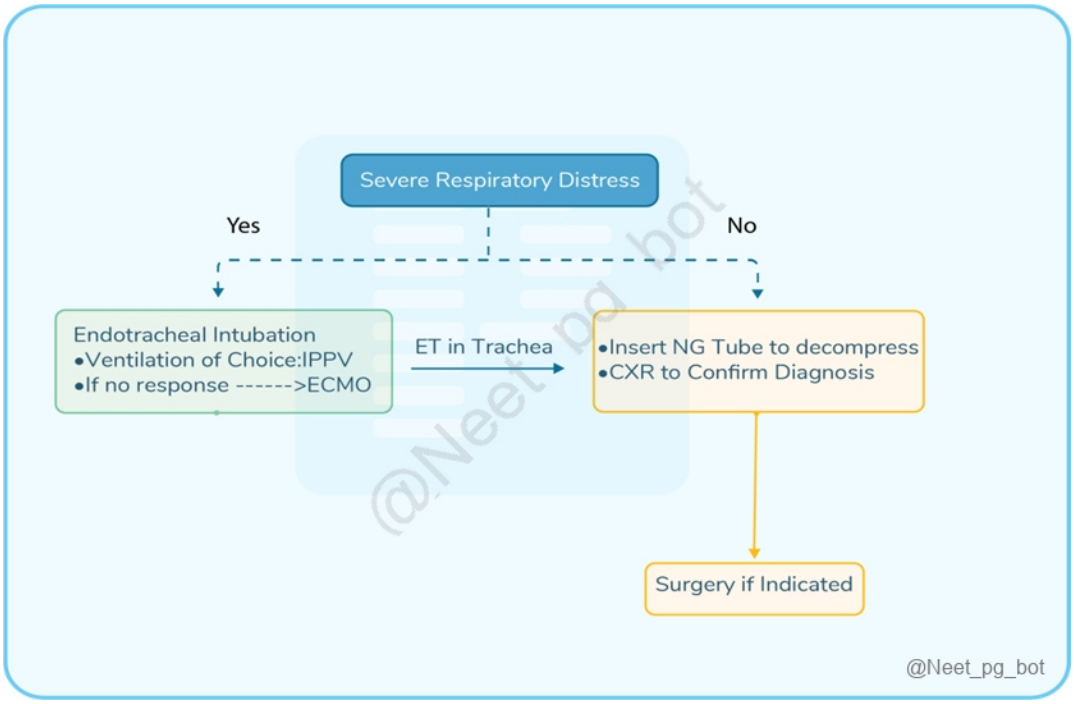
B. Bag and mask ventilation

C. Oxygen therapy

D. Intubation

Correct Answer: B. Bag and mask ventilation

Explanation: The clinical triad of respiratory distress, scaphoid abdomen, and shifted heart sounds in a neonate indicates Congenital Diaphragmatic Hernia (CDH) . Bag and Mask Ventilation is contraindicated in congenital diaphragmatic hernia (CDH) patients due to the risk of worsening respiratory distress and increasing intrathoracic pressure, which can further impede lung expansion and exacerbate the hernia. Management of Congenital Diaphragmatic Hernia: Initial Stabilization: Airway Management: Immediate endotracheal intubation (ET) is critical. (Option D ruled out) ECMO: If there is no response to ET Avoid excessive, mean airway pressure to prevent barotrauma Gastric Decompression: An orogastric tube is inserted to prevent gastric distention that worsens lung compression. Bag and Mask Ventilation is Contraindicated in CDH Surgical Repair is done only after pulmonary stabilisation in CDH (Immediate surgery done in case of Traumatic Hernia) PPV (Positive Pressure Ventilation) (Option A): This can be performed but should be done carefully to avoid overinflating the stomach, which can worsen respiratory distress. Intubation with PPV is preferred. Oxygen therapy (Option C): This is safe and can help improve oxygenation but is usually insufficient alone for severe respiratory distress in CDH.



References:

Nelson Textbook of Paediatrics 21st Edition, Pg - 945

Bailey & Love's Short Practice of Surgery, 28th edition, Pg - 271

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: A child was being delivered oxygen by nasal cannula at 3L/min. What is the FiO2 being delivered? (Q854611)

A. 24%

B. 30%

C. 44%

D. 40%

Correct Answer: B. 30%

Explanation: For each liter per minute (L/min) of oxygen flow, you can estimate an increase in FiO2 of about 4%. 1L/min of O2 corresponds to an FIO2 of 24% In this case, with an oxygen flow rate of 3 L/min, the FiO2 delivered is approximately 32% Nasal cannula: Used in low to medium concentrations of O2 (22-44%) When these are attached to the flow meter which is connected to the central pipeline supply of an ICU or cylinders and is turned on at 1L per minute, these deliver oxygen of about 24%. Atmospheric oxygen is from 20 to 21% When the concentration of oxygen is increased, it leads to an increase in the concentration of FIO2 This device can only deliver up to 6L per minute Every liter corresponds to its subsequent FiO2: 1 L/min-24% 2 L/min-28% 3 L/min-32% 4 L/min-36% 5 L/min-40% 6 L/min-44% This device is not beneficial for a capacity of > 6 liters Advantages: Patients can talk and eat with 02 support when using a nasal cannula and a nasal cannula can be used in home settings. Disadvantages: It may irritate nasal and pharyngeal mucosa. If the flow is given for more than 6L, the FiO2 may vary. 24% (Option A): An FiO2 of 24% corresponds to 1L/min of oxygen. 44% (Option C): An FiO2 of 44% corresponds to 6L/min of oxygen. 40% (Option D): An FiO2 of 40% corresponds to 5L/min of oxygen.

References:

Oxygen devices and delivery systems - PMC

↑ *Back to this question in Part A*

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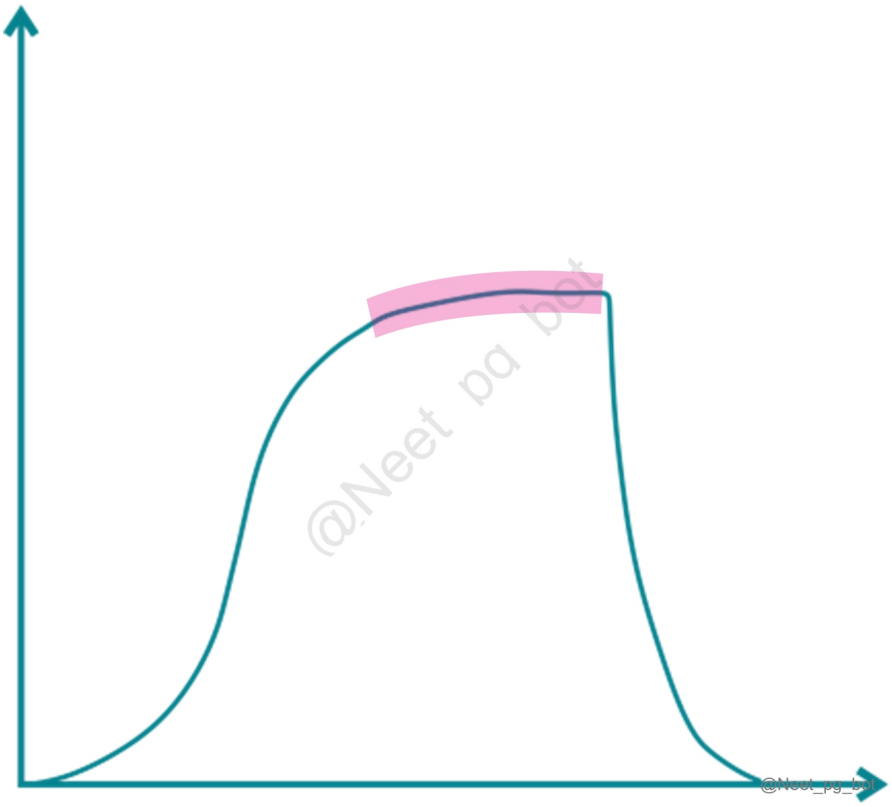
Q20: In the given capnograph, what does the marked area denote? (Q844285)

A. Expiratory upstroke

B. Alveolar Plateau

C. Inspiratory downstroke

D. Inspiratory baseline



Correct Answer: B. Alveolar Plateau

Explanation: Correct Option B – Alveolar Plateau: In a normal capnograph, the marked area represents the alveolar plateau phase. This is the flat part of the capnograph, indicating constant exhalation of CO2. Incorrect Options: Options A, C, and D are not marked in the given capnograph.

References:

↑ *Back to this question in Part A*

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Q21: In which of the following is the given position used? (Q844284)

A. Neurosurgery

B. Intubation

C. NG tube insertion

D. Bougie insertion



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Correct Answer: B. Intubation

Explanation: Correct Option B – Intubation: The given image shows the sniffing position. It is used during intubation to align the oral, pharyngeal, and laryngeal axes, making it easier to visualize the vocal cords and insert the endotracheal tube. Incorrect Options: Options A, C, and D: The sniffing position is not typically used for these.

↑ *Back to this question in Part A*

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Q22: Which of these is a second-generation Laryngeal Mask Airway (LMA)? (Q839902)

A. LMA Proseal

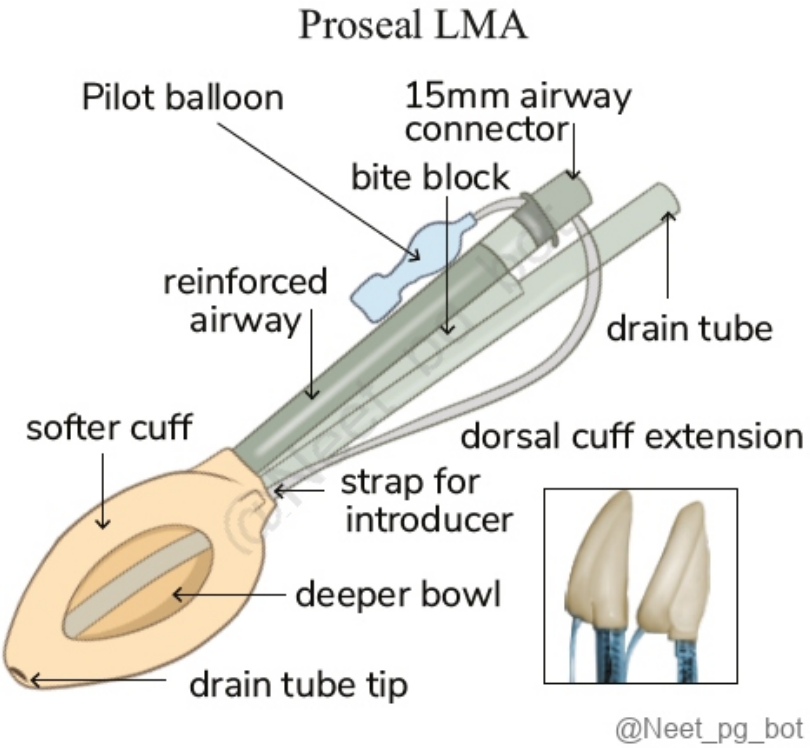
B. Ambu

C. Intubating LMA

D. Classic LMA

Correct Answer: A. LMA Proseal

Explanation: Correct Option A - LMA Proseal: LMA Proseal is a second-generation LMA designed with two ports: Tracheal port Esophageal port Second-generation Laryngeal Mask Airways (LMAs) have modifications to improve airway seal and reduce aspiration risk. ProSeal Supreme i-gel AuraGain Baska Mask LMA Protector Ambu LMA(Option B) refers to a brand and may include first- or second-generation devices depending on the model. Classic LMA(Option D) is first-generation (no drain tube). Intubating LMA (Fastrach) (Option C) is primarily designed to facilitate endotracheal intubation.



References:

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↑ *Back to this question in Part A*

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Q23: A known case of asthmatic bronchitis was reported to the hospital with breathlessness, palpitations, and oxygen saturation of 88%. The hospital does not have a ventilator. All the following can be given to the patient, except? (Q793453)

A. Hydrocortisone

B. Theophylline

C. Oxygen with oxygen mask, and reservoir

D. Leukotriene antagonist

Correct Answer: C. Oxygen with oxygen mask, and reservoir

Explanation: Correct Option C - Oxygen with oxygen mask, and reservoir: Bronchial asthma is an inflammatory chronic disease condition of airways that is characterized by paroxysmal wheezing, cough, and chest tightness. Asthma causes tightening of muscles around the airways and causes airways to narrow. Hence, when both acute bronchitis and asthma occur together, this situation is called asthmatic bronchitis. Currently, nasal cannula, non-breathing bag face mask reservoir, venturi masks, are used in the clinical settings as conventional oxygen therapies. However, non-invasive ventilation (NIV) in airways causes trauma, need for sedation, infections. Conventional oxygen therapy (COT) involves a simple face mask that delivers oxygen. COT is not able to provide sufficient respiratory support to the patients that are suffering from bronchial asthma. As it needs an extra attempt to breath and work for the breathing process to maintain oxygenation. Incorrect Options: Option A - Hydrocortisone: In case of bronchial asthma and hay fever, oral hydrocortisone is an effective therapy for symptomatic relief. Option B - Theophylline: Theophylline is applied for the treatment of shortness of breath, wheezing, chest tightness caused by asthma, emphysema, chronic bronchitis and other lung diseases. Lungs passages are opened and relaxed to make breathing easier. Option D - Leukotriene antagonist: Chronic asthma/bronchial asthma is treated with Leukotriene-receptor antagonists such as Montelukast and Zafirlukast.

References:

Morgan & Mikhail's Clinical Anesthesiology

↑ *Back to this question in Part A*

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• [11_Pain Management] 019 Pain Management

« Back to Folder Directory

[11_Pain Management] 019 Pain Management — Quick Jump

Q1 (p. 563) *Q2 (p. 565)* *Q3 (p. 566)* *Q4 (p. 567)* *Q5 (p. 568)* *Q6 (p. 569)*
Q7 (p. 570) *Q8 (p. 571)*

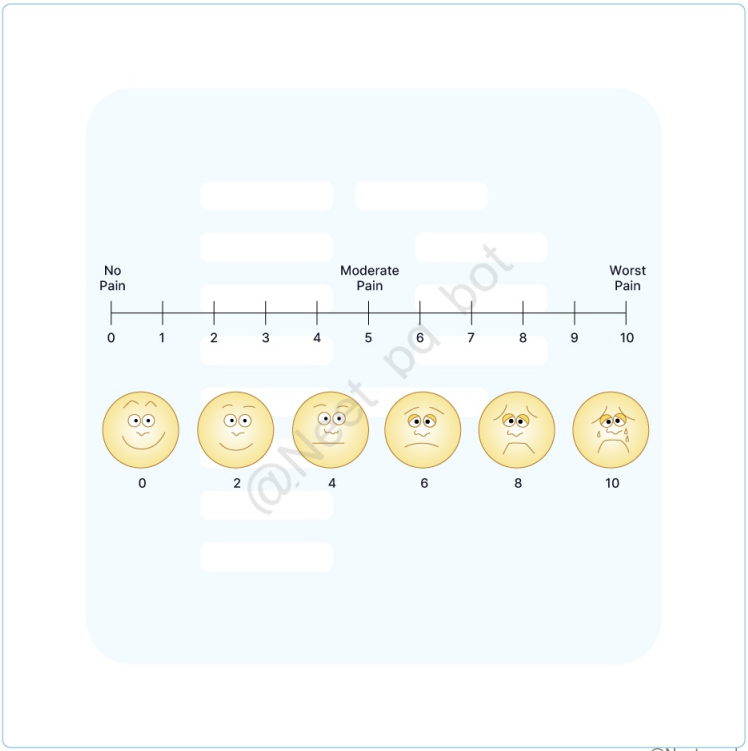
Q1: Identify the method of assessment of Pain as depicted in the image. (Q846827)

A. Wong-Baker Scale

B. Visual Analog Scale

C. CHEOPS

D. McGill Pain Scale

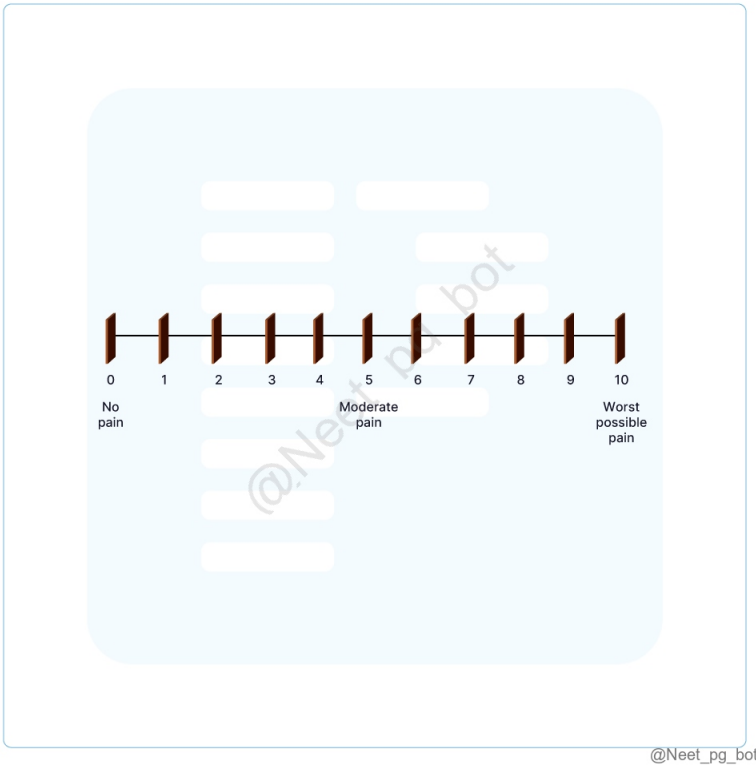


Correct Answer: A. Wong-Baker Scale

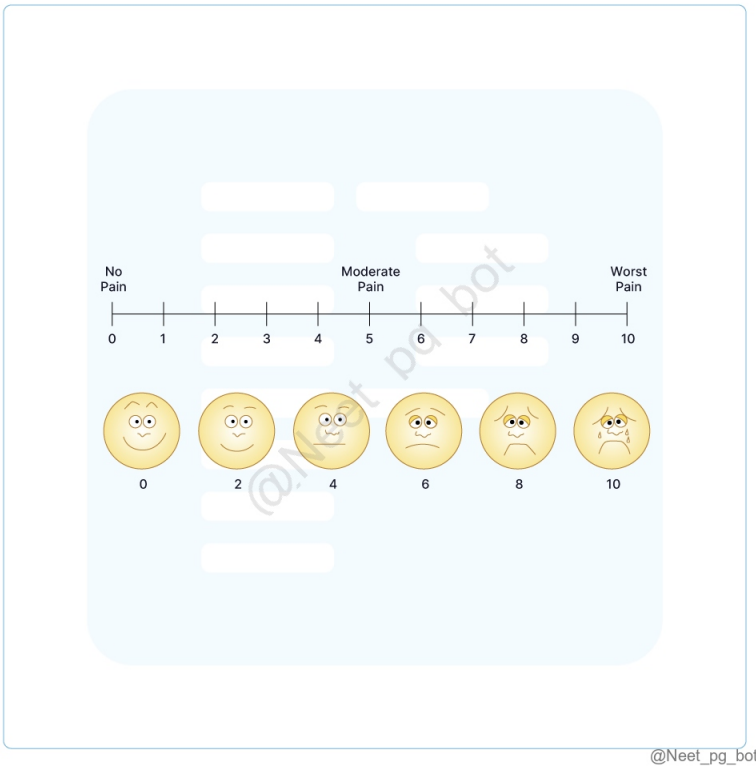
■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given image is of Wong Baker’s Faces Scale Facial expressions are used to analyze the severity of pain. Pain assessment methods Visual Analog Scale Commonly used scale in hospitals. Readings of scale range from 0-10 0 - no pain 10 – worst possible pain (Option B ruled out) Wong Baker's Faces Facial expressions are used to analyze the severity of pain. Readings of scale range from 0-10 0 – no pain 10 – worst pain Children's Hospital of Eastern Ontario Pain Scale (CHEOPS) Introduced by Canadian hospitals to assess pain. Observational measure of postoperative pain in children (Option C ruled out) McGill Pain Questionnaire Questionnaires are given to patients to assess the severity of pain. (Option D ruled out)



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References:

https://pami.emergency.med.jax.ufl.edu/resources/provider-resources/pain-assessment-scales/

↑ *Back to this question in Part A*

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Q2: A 45-year-old female presents to the clinic with a 6-month history of persistent lower back pain. She describes the pain as a dull ache that worsens throughout the day is associated with difficulty sleeping, and has a burning sensation radiating down her left leg. Over-the-counter ibuprofen has provided minimal relief. What is the most appropriate step in managing her pain? (Q846830)

A. Increase the dosage of ibuprofen.

B. Amitriptyline

C. Tramadol

D. Exercise therapy

Correct Answer: B. Amitriptyline

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient's lower back pain with a burning sensation radiating down her left leg suggests a neuropathic component. Since ibuprofen provided minimal relief Therefore, an adjuvant therapy (Amitriptyline) is added. Step 3 of WHO Step Ladder Management of Pain : Non-opioid analgesics: Acetaminophen, NSAIDs Adjuvant therapies (e.g. corticosteroids, anti-convulsants, anti-depressants) Increasing ibuprofen (Option A) may not address the burning sensation. Tramadol (Option C) is not first-line for neuropathic features when amitriptyline is available. Exercise therapy (Option D) is beneficial for general back pain; the specific symptoms make amitriptyline a more targeted approach in this case.

References:

https://www.irishhealthpro.com/content/articles/print/name/chronic-back-pain--a-stepwise-approach-to-management

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7038776/

https://www.medcentral.com/pain/chronic/who-pain-ladder-do-we-need-another-step

https://www.researchgate.net/publication/258112804_Is_the_WHO_analgesic_ladder_still_valid

↑ *Back to this question in Part A*

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Q3: You are caring for a 20-year-old woman with metastatic breast carcinoma and renal failure. While she is admitted to the oncology ward, she develops a pain of 8/10 score. What is the best medication to treat her pain? (Q846831)

A. IV Paracetamol

B. PO morphine

C. PO Tramadol

D. IV Pethidine

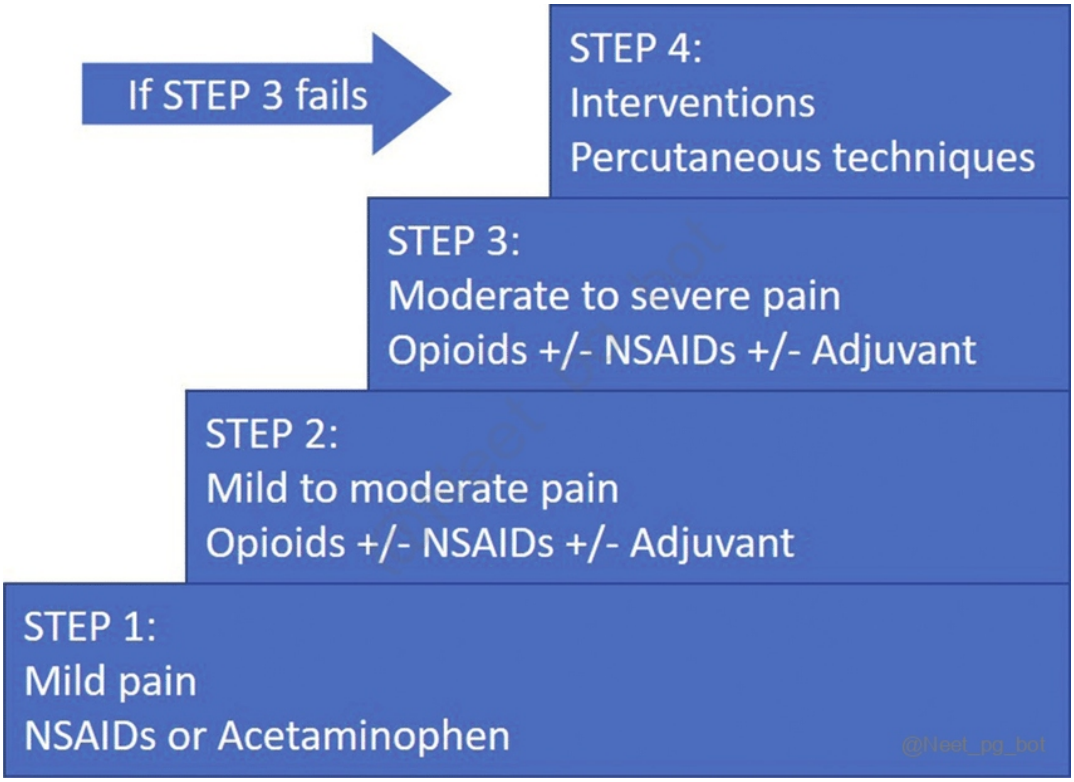
Correct Answer: B. PO morphine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In the case of a 20-year-old woman with metastatic breast carcinoma who is experiencing severe pain (8/10), the best medication to treat her pain would be PO morphine. Morphine is an opioid analgesic that is effective for moderate to severe pain WHO Step Ladder Management of Pain : It is WHO-given criteria for the

management of severe chronic pain which is not subsiding even after conventional therapies. Management depends on the severity of pain in a 'ladder ' manner. Step 1 Mild Pain Non-Opioid Analgesics: Acetaminophen, NSAIDs Adjuvant therapies (e.g., corticosteroids, anticonvulsants, antidepressants) Step 2 Moderate Pain Fixed-Dose Combination Products: (e.g., acetaminophen + hydrocodone) Weak Opioids: (e.g., codeine, tramadol) Adjuvant agents as needed Step 3 Severe Pain Strong Opioids: (e.g., morphine, oxycodone) Individualized dosing Appropriate adjuvant therapies Step 4 Complex and Uncontrolled Pain Interventional techniques: (e.g., nerve blocks, neurolysis) Multimodal approaches for complex pain syndromes IV paracetamol (Option A): less effective for severe pain compared to opioids. PO Tramadol (Option C): less effective for severe pain compared to opioids. IV Pethidine (Option D): Contraindicated in renal failure



References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7038776/

https://www.medcentral.com/pain/chronic/who-pain-ladder-do-we-need-another-step

https://www.researchgate.net/publication/258112804_Is_the_WHO_analgesic_ladder_still_valid

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 65-year-old woman is recovering in the postoperative unit after hip replacement surgery. She is receiving strong analgesics. The doctor checked her vital

signs and found that her heart rate was 52 beats per minute. Which other adverse effect should the medical team be alert for in this patient due to strong analgesics? (Q846832)

A. Rash

B. Mydriasis

C. Diarrhea

D. Hypertension

Correct Answer: A. Rash

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient's low heart rate (bradycardia) may indicate central nervous system effects from opioid analgesics, particularly morphine. Assuming that the patient is receiving Morphine, one of the potential adverse effects to monitor for is a rash Adverse effects of Morphine Produces respiratory depression and cough suppression. May produce bradycardia and hypotension (Option D ruled out) Nausea and vomiting are common side effects Histamine release may lead to rash, itching, and bronchospasm (in susceptible patients) (Option A) Meiosis is common (Option B ruled out) Constipation (Option C ruled out)

References:

https://www.ncbi.nlm.nih.gov/books/NBK459161/ KD Tripathi Essentials of Medical pharmacology, Ed. 8., Page 497-514 Miller's Anesthesia, Ed.9., Page 680-737

↑ *Back to this question in Part A*

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Q5: A 45-year-old man is in the postanesthesia care unit following a routine elective surgery. You are asked to monitor the patient for morphine overdose. Which of the following sets of symptoms best represents the classic triad associated with morphine overdose? (Q846833)

A. Mydriasis, hypertension, and tachycardia

B. Hypertension, respiratory depression, and miosis

C. Respiratory depression, miosis, and altered mental status

D. Agitation, hyperreflexia, and diaphoresis

Correct Answer: C. Respiratory depression, miosis, and altered mental status

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The classic morphine triad consists of respiratory depression, miosis (pinpoint pupils), and altered mental status (decreased level of consciousness) . This triad is a hallmark of opioid overdose. Antidote for morphine overdose: Naloxone Mydriasis, hypertension, tachycardia, agitation, hyperreflexia, and diaphoresis (Options A, B, and D) are not associated with morphine overdose.

References:

KD Tripathi Essentials of Medical pharmacology, Ed. 8., Page 493 - 501

Miller’s Anesthesia, Ed.9., Page 309

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A 45-year-old male in the post-anesthesia care unit (PACU) following surgery is found unresponsive with a respiratory rate of 6 breaths/min and pinpoint pupils. His oxygen saturation is 85%, and his blood pressure is 90/60 mmHg. He had received morphine for intraoperative analgesia. What is the most appropriate next step? (Q846834)

A. Administer Naltrexone.

B. Administer Naloxone.

C. Administer Methadone.

D. Administer Buprenorphine.

Correct Answer: B. Administer Naloxone.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient shows signs of morphine overdose (respiratory depression, pinpoint pupils, hypotension). Naloxone is the specific opioid antagonist that reverses these effects quickly. Morphine (Opioid) toxicity: For a non-tolerant adult , doses of 50 mg IM can produce serious toxicity. The lethal dose of morphine is estimated at around 250 mg. Naloxone is the specific antidote: Administer 0.4-0.8 mg i.v., repeated every 2-3 minutes until respiration improves. Naloxone is effective because it acts rapidly and does not have agonistic actions or depress respiration. Due to its short duration of action, naloxone needs to be repeated every 1-4 hours depending on the patient's response. Administer Naltrexone (Option A): It is for the prevention of relapse once detoxified. Administer Methadone (Option C): Used in maintenance programs for opiate use disorder, not during acute

poisoning. Also used in neonatal abstinence syndrome. Administer Buprenorphine (Option D): Used in maintenance programs for opiate use disorder, not during acute poisoning.

References:

KD Tripathi Essentials of Medical pharmacology, Ed. 8., Page 501

Miller's Anesthesia, Ed.9., Page 701, 731

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Which of the following statements accurately describes a key difference between sufentanil and remifentanil? (Q846835)

A. Remifentanil is more potent than Sufentanil

B. Remifentanil is metabolized by non-specific plasma esterases, while sufentanil is metabolized by the liver.

C. Sufentanil acts on μ-opioid receptors whereas Remifentanil acts on κ-opioid receptors.

D. Remifentanil has a longer duration of action compared to sufentanil.

Correct Answer: B. Remifentanil is metabolized by non-specific plasma esterases, while sufentanil is metabolized by the liver.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Remifentanil is metabolized by non-specific plasma esterases, while sufentanil is metabolized by the liver. It is less potent than sufentanil, has a longer duration of action, and acts on μ-opioid receptors. Sufentanil Remifentanil Mechanism of Action μ-opioid receptor agonist μ-opioid receptor agonist (Option C ruled out) Duration of Action Intermediate duration (30-45 minutes) Ultra-short duration (5-10 minutes) (Option D ruled out) Metabolism (Option B) Hepatic metabolism Rapid hydrolysis by plasma esterases Potency Approximately 5-10 times more potent than fentanyl (Option A ruled out) Similar potency to fentanyl

References:

KD Tripathi Essentials of Medical pharmacology, Ed. 8., Page 503, 504

Miller's Anesthesia, Ed.9., Page 309, 310

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 50-year-old patient is taking phenelzine, a monoamine oxidase inhibitor (MAOI), for depression and is scheduled for elective surgery. When should phenelzine be discontinued before the surgery to minimize the risk of interactions with pethidine? (Q846836)

A. 24 hours before surgery

B. 48 hours before surgery

C. 1 week before surgery

D. 3 weeks before surgery

Correct Answer: D. 3 weeks before surgery

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: MAOI (Monoamine Oxidase Inhibitors) are stopped 3 weeks before surgery, to prevent the risk of developing serotonin syndrome. MAO inhibitors inhibit the breakdown of serotonin, while pethidine may also have serotonergic effects, leading to excessive serotonin accumulation, causing serotonin syndrome , and may present with symptoms such as agitation, confusion, muscle rigidity, fever, and autonomic instability. Pethidine (Meperidine) Mechanism of Action Interacts with μ-opioid receptors Metabolite normeperidine also has analgesic activity. Pharmacological Effects Analgesic potency : 1/10th of morphine but nearly equally effective Rapid onset after i.m. injection, shorter duration (2-4 hours) Less spasmogenic action (less miosis, constipation, urinary retention) Uses Occasionally used to control shivering post-anesthesia Shivering control during IV infusions Pain relief, but clinical use has declined Adverse Effects Dry mouth, blurred vision, tachycardia Less constipation, urinary retention, and miosis compared to morphine Tachycardia due to antimuscarinic action Tremors, mydriasis, hyperreflexia, delirium, myoclonus, convulsions (due to overdose) Prone to excitatory effects in renal failure patients Interactions Excitatory effects are exacerbated when combined with MAO inhibitors or SSRIs (leading to serotonin syndrome), Hence stopped 3 weeks before surgery. Drugs causing Serotonin syndrome: 1. Psychiatric drugs: MAO Inhibitors SSRIs SNRIs TCAs Vilazodone Vortioxetine Buspirone 2. Nonpsychiatric drugs: Tramadol, Ondansetron Triptans, Linezolid, MDMA, Dextromethorphan, Meperidine, St. John’s wort

References:

KD Tripathi Essentials of Medical pharmacology, Ed. 8., Page 503

Miller’s Anesthesia, Ed.9., Page 726, 727

↑ *Back to this question in Part A*

@Neet_pg_bot

• [12_Brain Death] 020 Brain Death

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[12_Brain Death] 020 Brain Death — Quick Jump

Q1 (p. 572) *Q2 (p. 573)* *Q3 (p. 573)* *Q4 (p. 574)* *Q5 (p. 576)* *Q6 (p. 576)*
Q7 (p. 577) *Q8 (p. 578)*

Q1: Which of the following is true about brain death? (Q846837)

A. Complete loss of cerebral cortical function but preservation of brainstem reflexes.

B. Irreversible loss of all brain function, including the brainstem, with inability to breathe independently.

C. Persistent vegetative state where higher brain functions are lost, but spontaneous respiratory effort is present.

D. Reversible coma with absence of brainstem reflexes.

Correct Answer: B. Irreversible loss of all brain function, including the brainstem, with inability to breathe independently.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Brain death: Brain death is defined as the complete and irreversible cessation of all functions of the brain, including the brainstem . It represents legal and clinical death , even if cardiac activity continues with mechanical ventilation. Key features of brain death include: 1. Irreversible Loss of All Function: For a diagnosis of brain death, there must be clear evidence of an underlying cause (like a massive stroke or traumatic brain injury) that has destroyed all brain tissue. This includes: The Cerebrum: Responsible for thought, memory, and consciousness. The Brainstem: The "control center" for vital life functions like heart rate and blood pressure. 2. Absence of Brainstem Reflexes: In other states (like Options A or C) , the brainstem might still be functioning. In brain death, all reflexes controlled by the brainstem are gone. Doctors test for: Pupillary reflex: Pupils do not constrict when exposed to light. Gag/Cough reflex: No response when the back of the throat or windpipe is stimulated. Vestibulo-ocular reflex: The eyes do not move in response to head movement (the "doll's eyes" test). 3. Inability to Breathe Independently (Apnea): This is the "gold standard" test. Since the brainstem contains the respiratory centers that tell the body to breathe, a brain-dead person cannot take a breath on their own. The Apnea Test: Doctors temporarily remove the patient from the ventilator to see if rising levels of carbon dioxide (CO_2) in the blood trigger a natural breath. If no breath occurs, it confirms the brainstem has failed.

References:

Harrison’s principle of internal medicine, Edition 21st- Pg No. 188

↑ *Back to this question in Part A*

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Q2: A 58-year-old woman is admitted with a traumatic brain injury and is being evaluated for brain death. Her core body temperature is 36.5°C, and her systolic blood pressure is 95 mmHg despite volume resuscitation. Neuromuscular blocking agents were recently administered. Which of the following should be done before proceeding with the brain death diagnosis? (Q846838)

A. Administer vasopressors to increase systolic blood pressure above 100 mmHg and wait for drug clearance before proceeding.

B. Perform brainstem reflex testing immediately since her core temperature is adequate.

C. Reduce the temperature to less than 36°C to continue with the exam.

D. Start administering antidotes for neuromuscular blockade and proceed with the diagnosis.

Correct Answer: A. Administer vasopressors to increase systolic blood pressure above 100 mmHg and wait for drug clearance before proceeding.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Before deciding to proceed with the diagnosis of brain death, several conditions must be evaluated and met. In this scenario, the patient's systolic BP should be >100mmHg to meet the criteria, and administering vasopressors would help stabilize the blood pressure to meet the required threshold. The team must wait for five half-lives of drug clearance (adjusted for the patient's renal and hepatic function) to ensure the drugs (neuromuscular agent) have cleared, as they can interfere with the neurologic exam by paralyzing the patient, falsely mimicking brain death.

References:

Harrison's principle of internal medicine, 21st Edition, Page 188

Brain Death - StatPearls - NCBI Bookshelf (nih.gov)

↑ *Back to this question in Part A*

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Q3: A 30-year-old patient is unconscious following a massive intracerebral hemorrhage. Upon neurological examination, the pupils are fixed and dilated at 5 mm, and there is no response to cold caloric testing or corneal stimulation. However, when

tracheal suctioning is performed, the patient exhibits a slight cough. Which of the following conclusions is accurate? (Q846839)

A. Brain death cannot be confirmed due to the presence of the cough reflex.

B. Brain death can be confirmed as the pupils are fixed and non-reactive.

C. Brain death can be confirmed, and the cough reflex is a false-positive result.

D. Cold caloric testing is unreliable in this setting.

Correct Answer: A. Brain death cannot be confirmed due to the presence of the cough reflex.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Brain death diagnosis requires the absence of all brainstem reflexes, including the cough reflex (mediated by the vagus nerve, CN X). Since the patient exhibits a cough response, this suggests that some brainstem function is still intact. Therefore, brain death cannot be confirmed. Brain death can be confirmed as the pupils are fixed and non-reactive (Option B): The diagnosis of brain death requires the absence of all brainstem reflexes, including the cough reflex, which is still present in this case. Therefore, brain death cannot be confirmed solely based on fixed, non-reactive pupils. Brain death can be confirmed, and the cough reflex is a false-positive result (Option C): False. The cough reflex is not a false-positive result but an actual brainstem reflex that indicates some remaining brainstem activity. The presence of this reflex means that brain death cannot be confirmed. This option is incorrect. Cold caloric testing is unreliable in this setting (Option D): Cold caloric testing is a reliable method for assessing brainstem function. In this case, the absence of response to cold caloric testing suggests brainstem dysfunction. However, since the cough reflex is present, brain death cannot be confirmed. Hence, this option is incorrect.

References:

www.ncbi.nlm.nih.gov/books/NBK538159/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 40-year-old male is unconscious following a traumatic brain injury and is being evaluated for brain death. His blood pressure is stabilized with noradrenaline infusion to maintain a systolic BP of 110 mm Hg. The patient is preoxygenated for 10 minutes with 100% FiO 2 , achieving a PaO 2 of 230 mm Hg. The ventilator is disconnected, and 100% FiO 2 is administered via insufflation tubing at 6 L/min near the carina. After 10 minutes, no respiratory movements are observed. Arterial blood gas analysis reveals a PaCO 2 of 65 mm Hg, and the SpO 2 remains at 98% throughout the test.

What is the most appropriate conclusion regarding this apnea test? (Q846840)

A. The apnea test is negative since the patient needs vasopressors.

B. SpO2 should drop below 90% for a valid apnea test.

C. The apnea test is positive, indicating brain death.

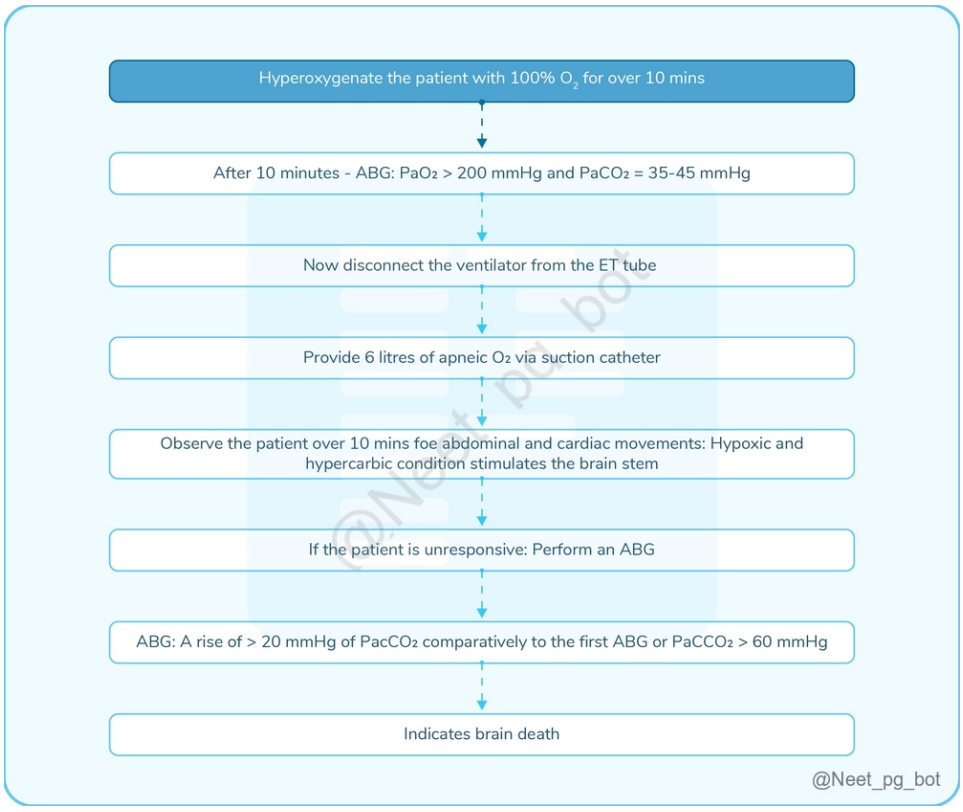
D. The apnea test should be extended for another 5 minutes to confirm brain death.

Correct Answer: C. The apnea test is positive, indicating brain death.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In this case, all criteria for a positive apnea test are met, confirming brain death. Apnea test for brain death If clinical evaluation and brain stem reflexes are inconclusive: Stimulate the brain stem with an apnea test. This test analyses whether the patient is brain dead or not by temporarily terminating the ventilator support or breathing. Preparation of Apnea Test: Pre-evaluation for brain death should be done and corrected if any abnormalities are detected. Vasopressors should be adjusted to maintain a SBP ≥100 mmHg. (Option A ruled out) Procedure of Apnea Test: Note: If PaCO 2 rise is <20 mmHg after 10 mins of providing apnea: Redo the apnea test or do ancillary tests. (Option D ruled out) The apnea test has to be discontinued if: Presence of any respiratory movement (abdominal or chest excursions or brief gasp). SBP decreases to <90 mm Hg. Oxygen saturation is less than 85% for more than 30 seconds. (Option B ruled out)



References:

www.ncbi.nlm.nih.gov/books/NBK538159/

↑ *Back to this question in Part A*

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Q5: A 45-year-old patient is suspected of having brain death after a severe head injury. The clinical evaluation is incomplete due to confounding factors. Which of the following ancillary tests is considered the gold standard for assessing cerebral blood flow in determining brain death? (Q846841)

A. Computed Tomography (CT) Angiography

B. Four-vessel angiography

C. Magnetic Resonance Angiography (MRA)

D. Electroencephalogram (EEG)

Correct Answer: B. Four-vessel angiography

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Four-vessel angiography is considered the gold standard for assessing brain blood flow in the determination of brain death. CT Angiography (Option A) is an emerging test used to visualize brain blood vessels but is not the gold standard. MRA (Option C) uses magnetic fields to image blood vessels but is not the gold standard. EEG (Option D) measures brain electrical activity and is used to evaluate brain function, but it is not a test for blood flow and not the gold standard for determining brain death.

References:

https://pubmed.ncbi.nlm.nih.gov/32648194/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3828391/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A 30-year-old patient requires conscious sedation for a dental procedure. The anesthesiologist considers various agents for this purpose. Which of the following drugs is commonly preferred for inducing moderate sedation due to its favorable safety profile and effectiveness in achieving anxiolysis without significant

cardiopulmonary complications? (Q846842)

A. Propofol

B. Dexmedetomidine

C. Midazolam

D. Methohexital

Correct Answer: C. Midazolam

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Midazolam : Commonly used for moderate sedation in dental and ambulatory procedures Provides anxiolysis and sedation with minimal cardiopulmonary complications Has a strong safety profile Conscious sedation: known as procedural sedation and/or moderate sedation, is a procedure to relieve anxiety and depress the level of consciousness in patients, before minor procedures. Propofol (Option A ruled): Decreases BP/CVS depression Dexmedetomidine (Option C ruled out): Causes Hypotension & Bradycardia Methohexital (Option D ruled out): Suppresses respiration (Option D ruled out)

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5672508/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5005095/

https://pubmed.ncbi.nlm.nih.gov/30124543/

https://www.medicinenet.com/what_drugs_are_used_for_conscious_sedation/drug-class.htm

↑ *Back to this question in Part A*

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Q7: Which of the following statements about non-operating room anesthesia (NORA) is false? (Q846843)

A. NORA can be safely performed in outpatient clinics with trained personnel.

B. Airway management complications are less common in NORA than in operating rooms.

C. NORA requires specific sedation techniques based on procedure complexity.

D. Midazolam is the commonly used agent, owing to its safety profile.

Correct Answer: B. Airway management complications are less common in NORA than in operating rooms.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Airway management complications are more common in NORA than in operating rooms. Non-Operating Room Anesthesia (NORA): NORA involves sedation and anesthesia for procedures outside traditional operating rooms, increasingly utilized in settings like radiology suites and outpatient clinics. (Option A ruled out) Key Aspects of NORA: Growing Demand Increased patient visits Complex procedures Greater emphasis on pain management Anesthesia providers managing sedation in diverse environments Challenges Inadequate Support : Limited staff and resources compared to operating rooms Airway Management Risks : Higher incidence of airway complications requiring vigilant monitoring (Option B) Sedation Techniques Selection based on: (Option C ruled out) Procedure type Expected pain levels Patient characteristics (age, comorbidities) Required sedation depth Common Agents Used Midazolam : Rapid onset, safety profile (Option D ruled out) Propofol : Quick recovery, necessitates careful airway monitoring Safety Considerations Major complications are rare when managed by trained personnel Ongoing evaluation of complication rates and mortality as procedures grow more complex Future Trends Continued expansion of NORA practices Development of standards to improve safety and efficacy

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6761785/

https://pubmed.ncbi.nlm.nih.gov/34074883/

↑ *Back to this question in Part A*

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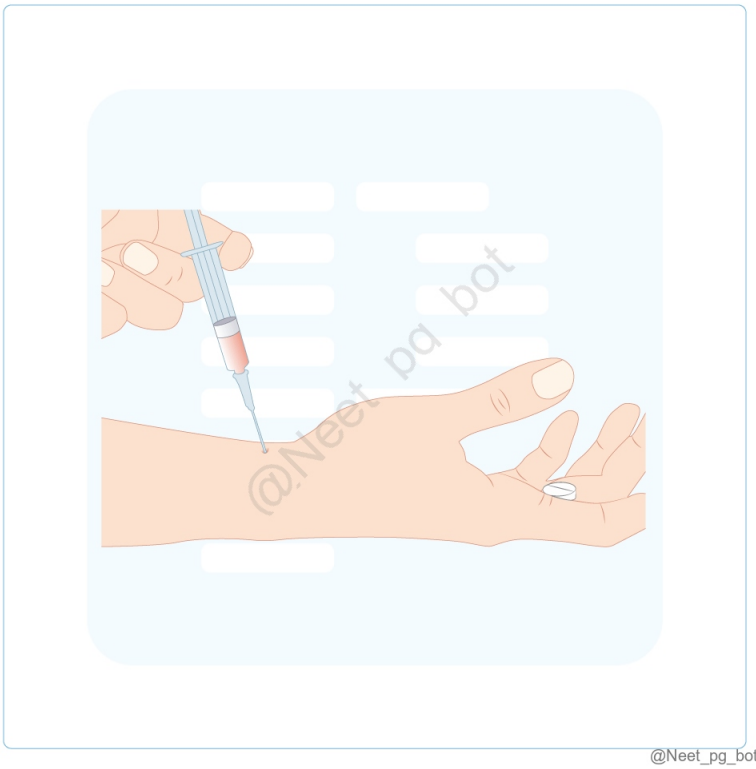
Q8: Which of the following statements is/are incorrect regarding this type of Euthanasia? Statement 1: It is an act of commission Statement 2: Not using extraordinary life-sustaining measures Statement 3: It is a part of Hospice care Statement 4: Practiced in India (Q846844)

A. Statements 1 and 2

B. Statements 2, 3 and 4

C. Statements 3 and 4

D. Statement 4 only



Correct Answer: B. Statements 2, 3 and 4

Explanation: The given image shows active euthanasia (as it shows the active administration of medicines). Statement 1 is correct, and Statements 2, 3, and 4 are incorrect. Euthanasia: Producing painless death of a person suffering from a hopelessly incurable and painful disease. Types of Euthanasia: Feature Active Euthanasia Passive Euthanasia Definition Positive merciful act to end useless suffering or a meaningless existence Discontinuing or not using extraordinary life-sustaining measures to prolong life (Statement 2) Principle It is an act of commission (Statement 1) It is an act of omission Procedure Administration of lethal doses of opium, barbiturate, or sodium thiopental followed by a muscle relaxant Allowing death by not resuscitating a terminally ill patient or a defective newborn Characteristic Feature Using measures that would hasten death Not using measures that would delay death Examples Followed in the Netherlands, Belgium, and Luxembourg Practiced in India, Mexico, and some US states (e.g., withholding tube-feeding) (Statement 4) It is a part of Hospice care (Statement 3): Euthanasia is the intentional ending of a person's life, while hospice care is a type of health care that focuses on comfort and quality of life for terminally ill patients. Hospice is a form of palliative care for patients with a prognosis < 6 months when curative or life-prolonging treatment is no longer beneficial.

References:

https://www.cravencountync.gov/1933/What-is-Hospice#:~:text=Hospice%20will%20never%20do%20anything,illness%20in%20their%20home%20environment . Forensic Medicine & Toxicology for Medical students, Gautam Biswas,6E, PG,47

↑ *Back to this question in Part A*

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• [13_Emergency Medicine] 021 Previous Year Questions

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[13_Emergency Medicine] 021 Previous Year Questions — Quick Jump

Q1 (p. 580) *Q2 (p. 580)* *Q3 (p. 586)* *Q4 (p. 587)* *Q5 (p. 588)* *Q6 (p. 590)*

Q1: Which statement in rapid sequence intubation is incorrect ? (Q855266)

A. Preoxygenation with 100% oxygen for 3 minutes is done

B. High–volume, low-pressure cuff is used

C. It is the first choice of treatment in cardiac arrest patients

D. The induction agent and muscle relaxant are given simultaneously

Correct Answer: C. It is the first choice of treatment in cardiac arrest patients

Explanation: Rapid sequence intubation (RSI) is not typically performed in cardiac arrest because such patients are usually unconscious, eliminating the need for an induction agent. Instead, bag-mask ventilation and immediate advanced airway placement are prioritized. RSI is primarily used in patients who require airway protection but are at risk of aspiration, not in cardiac arrest situations. Preoxygenation with 100% oxygen for 3 minutes is done (Option A) : This is correct. Preoxygenation is critical to ensure oxygen reserves during the apneic period of intubation. High–volume, low-pressure cuff is used (Option B) : This is correct. Such cuffs minimize the risk of airway trauma and provide an effective seal. The induction agent and muscle relaxant are given simultaneously (Option D) : This is correct. Administering these agents together minimizes the time to achieve intubation readiness.

References:

Miller’s Anaesthesia, 9th Edition, Page 1382

↑ *Back to this question in Part A*

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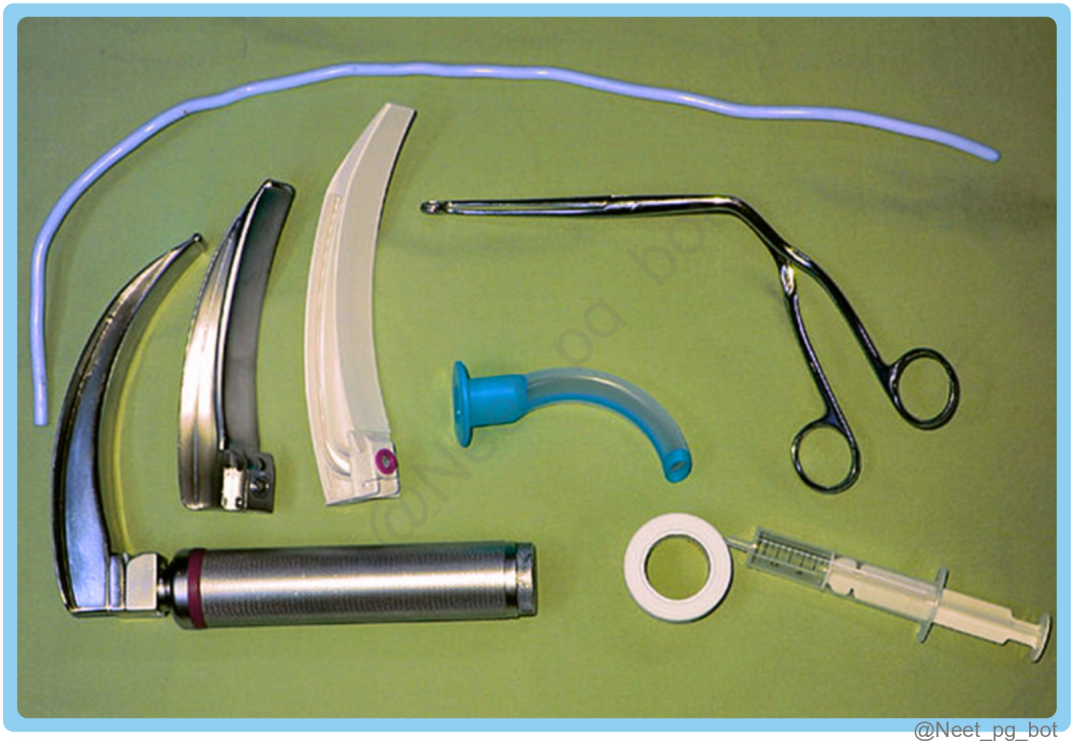
Q2: These instruments are utilized for: (Q856462)

A. Central line insertion

B. Arterial line insertion

C. Airway management

D. Umbilical catheter insertion



Correct Answer: C. Airway management

Explanation: The instruments on the tray are likely to include items such as endotracheal tubes, laryngoscopes, stylets, oral airways, suction catheters, and other devices used for airway assessment and intervention. These strongly suggest that the instruments are used for airway management. Airway management involves various techniques and tools to establish and maintain a patient's airway, ensuring adequate oxygenation and ventilation. Macintosh Laryngoscope Miller Laryngoscope McCoy Laryngoscope Blade Curved shape {{caption_text}} Straight shape {{caption_text}} Curved with levering tip {{caption_text}} Use In adults In children (large epiglottis) It can be used for both adults and children. Nasopharyngeal airway Guendel airway (Oropharyngeal) Placed through nose Placed through mouth Prevents back falling of tongue Prevents back falling of tongue Size is calculated by distance between tip of the nose and tragus {{caption_text}} Size is calculated by distance between angle of mouth and tragus {{caption_text}} Contraindicated in skull fracture and bleeding disorders Contraindicated in absence of gag reflex {{caption_text}} {{caption_text}} Central line insertion (Option A): I t refers to the placement of a catheter into a large central vein, such as the subclavian vein or internal jugular vein. The instruments used for this procedure typically include a needle, guidewire, dilators, and catheterization kit. The image provided does not correspond to instruments commonly used for central line insertion. Arterial line insertion (Option B): Arterial line insertion involves the placement of an arterial catheter to monitor blood pressure continuously and obtain arterial blood samples. The instruments used for arterial line insertion include a needle, guidewire, dilators, and arterial catheterization kit. The image does not match the instruments commonly used for arterial line insertion. Umbilical catheter insertion (Options D): Umbilical catheter insertion refers to the placement of a catheter into the umbilical artery or vein in newborns for medical purposes. The instruments used for this procedure typically include umbilical catheters, catheterization tray, and securing devices. The image provided does not correspond to the instruments commonly used for umbilical catheter insertion.


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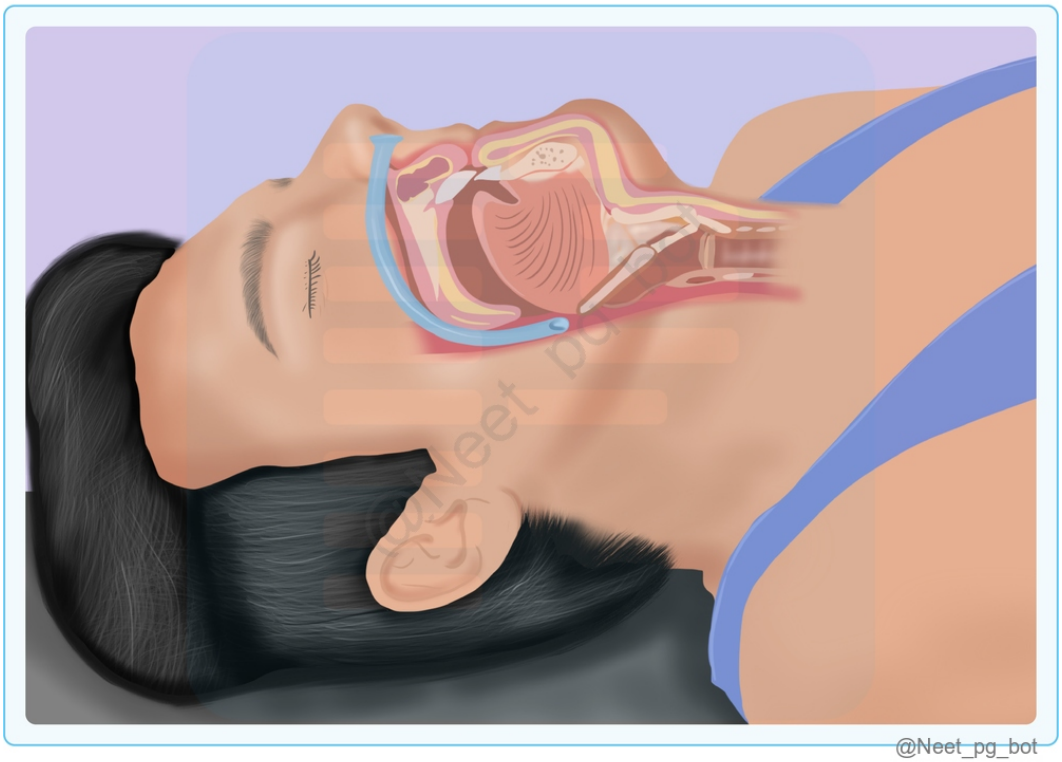

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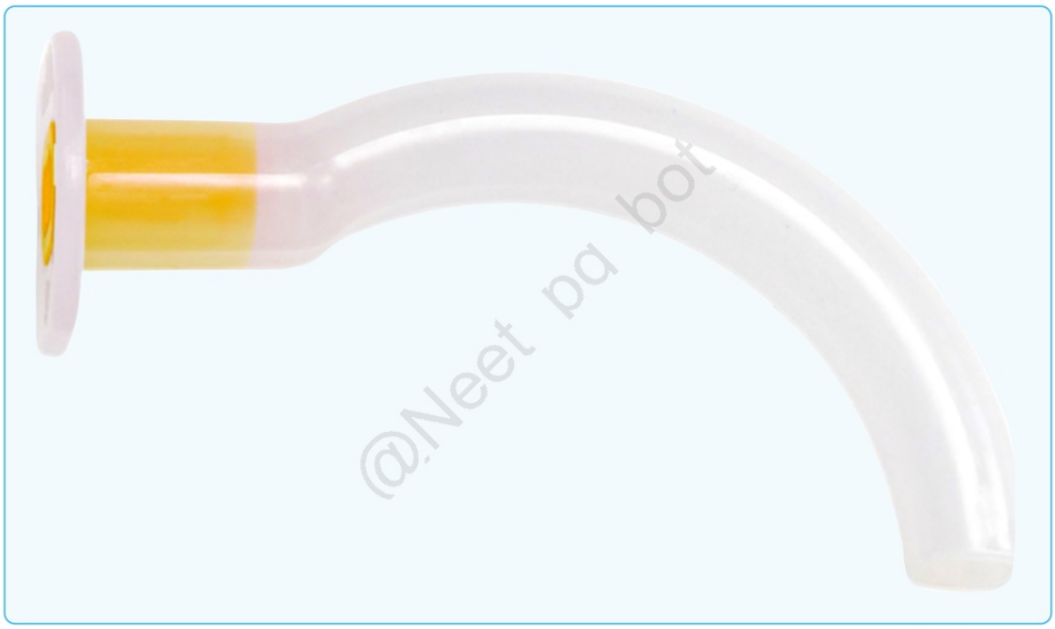


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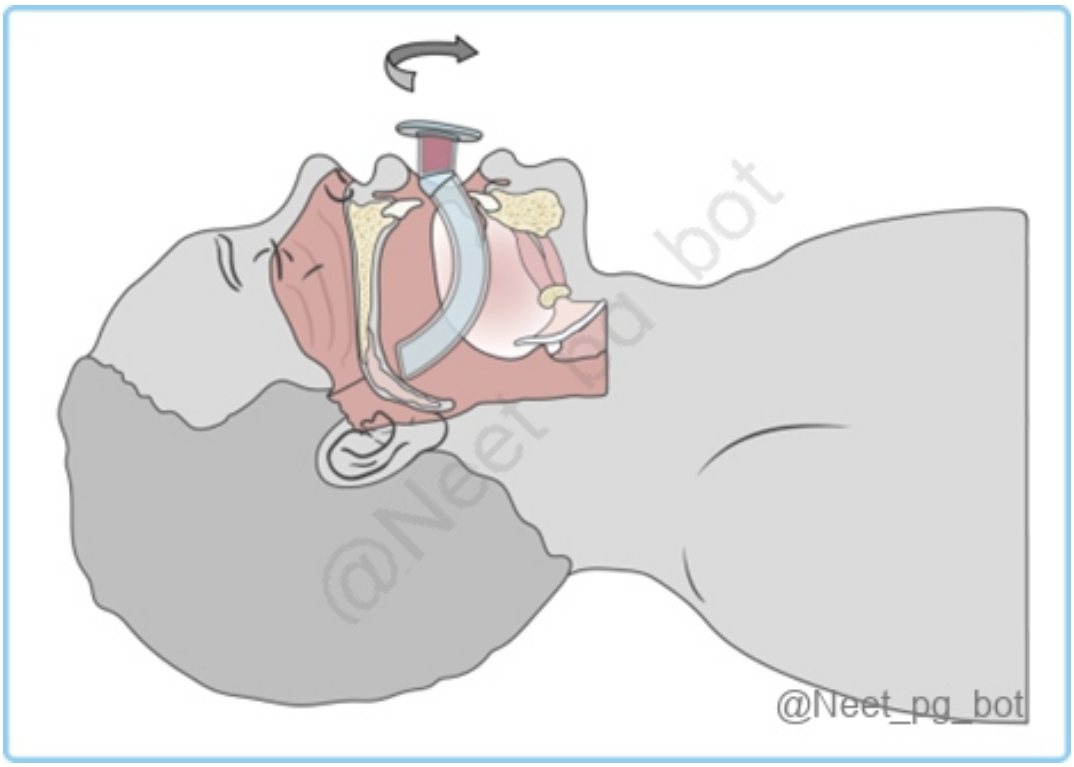




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References:

Miller’s Anesthesia, 9th edition, Pages 1394-1398, 1645

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pdf Pages 167, 175-76, 594, 1664

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: An 18-year-old boy is rushed to the emergency room after choking on a bone while eating. He is conscious and responsive, but unable to speak. What is the next appropriate step in management? (Q857564)

A. Bag and mask ventilation

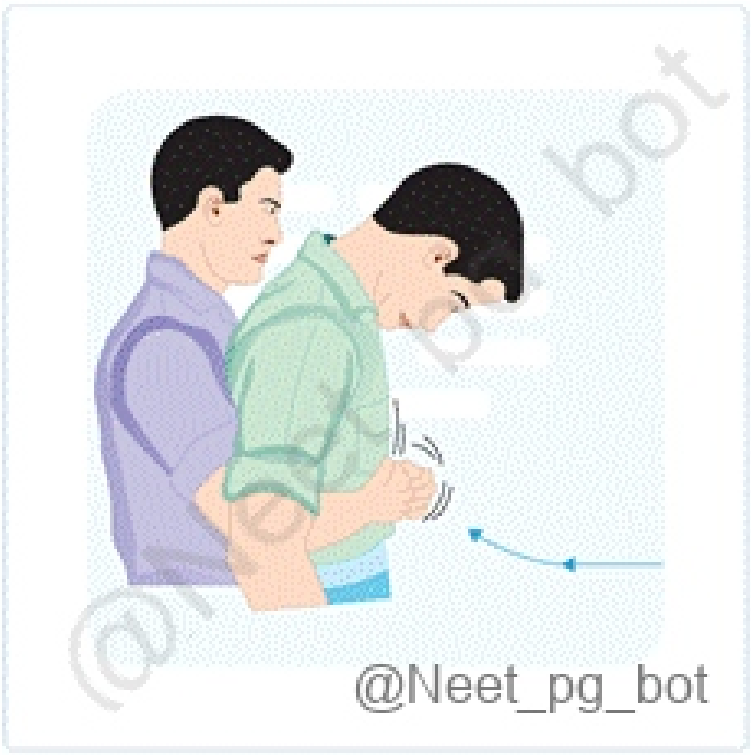
B. Endoscopic removal

C. Deliver 5 back slaps and 5 chest compressions

D. Perform Heimlich maneuver

Correct Answer: D. Perform Heimlich maneuver

Explanation: This patient is a conscious adult with a complete airway obstruction (unable to speak after choking). The immediate next step is the Heimlich maneuver (abdominal thrusts) . Abdominal thrusts create a sudden increase in intra-abdominal and intrathoracic pressure, helping to expel the foreign body . Heimlich Maneuver : Stand behind the patient. Place a fist above the umbilicus. Deliver forceful upward abdominal thrusts . Continue until the object is expelled or the patient becomes unresponsive. If the patient becomes unresponsive → start CPR . {{caption_text}} Bag and mask ventilation (Option A): Used only if the patient becomes unresponsive. Endoscopic removal (Option B): may be necessary if other methods fail or if the obstruction is not cleared by basic interventions, it may not be the initial step in managing a conscious patient with a clear airway obstruction. Deliver 5 back slaps and 5 chest compressions (Option C): Indicated for infants , not adults.



References:

https://www.ncbi.nlm.nih.gov/books/NBK531467/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: After a building collapse, a patient presents with airway obstruction and mouth filled with concrete debris. BP is 90/60 mmHg, HR 105/min. The given procedure is performed (image shown). Which of the following statements regarding this procedure is true? (Q866525)

A. It provides adequate ventilation for up to 6 hours

B. It must be followed by a formal tracheostomy

C. It allows for removal of large foreign bodies from the airway

D. It can be safely used for prolonged airway management without further intervention



Correct Answer: B. It must be followed by a formal tracheostomy

Explanation: The image depicts a needle cricothyroidotomy , an emergency airway procedure used when endotracheal intubation is not possible due to severe upper airway obstruction This technique provides temporary oxygenation via a large-bore needle inserted through the cricothyroid membrane, but it does not ensure adequate ventilation long-term due to high airway resistance. Therefore, it must be converted to a definitive airway (formal surgical cricothyroidotomy or tracheostomy) as soon as possible, usually within 30–45 minutes . It provides adequate ventilation for up to 6 hours (Option A): False - it's only for short-term oxygenation (max ~30–45 minutes), not hours. It allows for removal of large foreign bodies from the airway (Option C): False - it bypasses obstruction but cannot remove debris. It can be safely used for prolonged airway management without further intervention (Option D): False - prolonged use risks CO■ retention and inadequate ventilation.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A patient under anesthesia is found to be in a "cannot intubate, cannot ventilate" (CICV) scenario. What is the next best step in management? (Q866919)

A. Insert nasopharyngeal airway

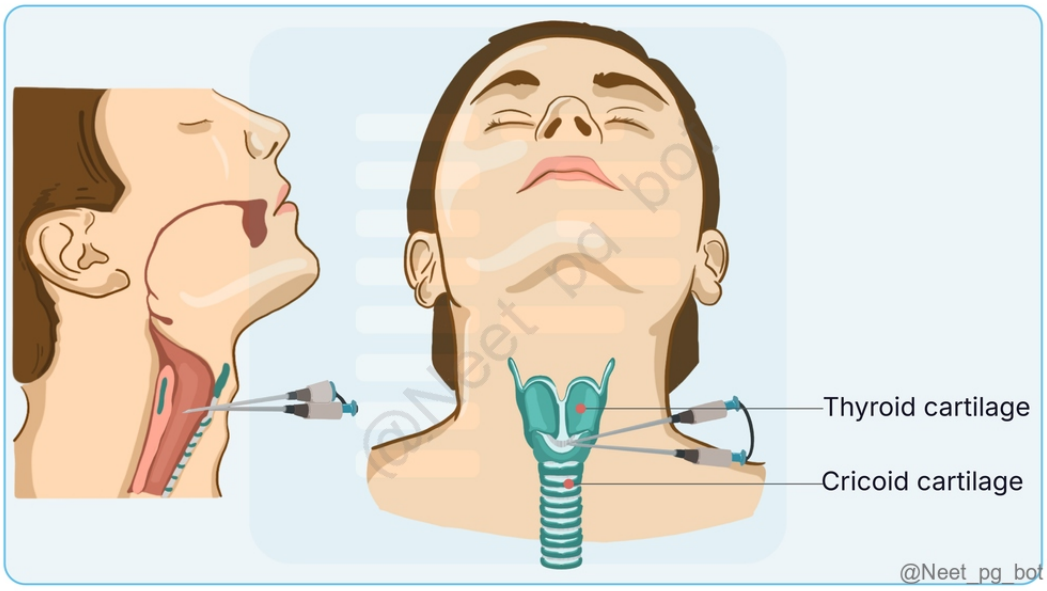
B. Perform a cricothyroidotomy

C. Insert a laryngeal mask airway

D. Perform a tracheostomy

Correct Answer: B. Perform a cricothyroidotomy

Explanation: A "cannot intubate, cannot ventilate" (CICV) scenario is a life-threatening emergency in which both endotracheal intubation and non-invasive ventilation (e.g., with a bag-valve-mask or supraglottic airway) have failed. This situation demands an immediate and decisive response to establish an airway. Immediate Surgical Airway: In a CICV situation, an immediate surgical airway is required to oxygenate the patient and prevent hypoxic brain injury or cardiac arrest. This must be performed as quickly as possible, ideally within 3-5 minutes of declaring the CICV state. Cricothyroidotomy: A cricothyroidotomy is the fastest and most accessible emergency surgical airway technique. It involves making a small incision through the skin and cricothyroid membrane to insert a tube directly into the trachea. Because it is performed at a superficial level and does not require complex dissection, it is the method of choice in this time-critical situation. Incorrect Options: Insert nasopharyngeal airway (Option A) is a type of non-invasive airway adjunct that is used for partial airway obstruction. It is ineffective in a complete airway obstruction, which is characteristic of a CICV scenario. Insert a laryngeal mask airway (Option C) is a supraglottic airway device that should have already been attempted as part of the standard difficult airway algorithm before the declaration of a CICV situation. If it has failed, it is no longer a viable option. Perform a tracheostomy (Option D) is a surgical procedure to create a more permanent airway. It is a more complex and time-consuming procedure than a cricothyroidotomy and is therefore not the appropriate choice for an emergency, life-threatening situation like CICV.



References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A patient undergoing surgery develops sudden deranged vitals following a failed attempt at subclavian vein catheterization. On examination, the trachea is shifted to one side and breath sounds are absent on the same side. What is the most likely diagnosis? (Q866921)

A. Bronchospasm

B. Tension pneumothorax

C. Pulmonary embolism

D. Aspiration pneumonitis

Correct Answer: B. Tension pneumothorax

Explanation: The patient's clinical presentation is a classic triad of signs and symptoms that strongly indicate a tension pneumothorax. A tension pneumothorax is a life-threatening condition that occurs when air enters the pleural space, but cannot escape, causing a one-way valve effect. The key findings are: Tracheal deviation: The trachea is shifted away from the affected side as the increasing pressure in the pleural space pushes the mediastinum to the opposite side. Absent breath sounds: Breath sounds are absent on the affected side due to the complete collapse of the lung. Hypotension and hypoxia: The high intrathoracic pressure compresses the major blood vessels, leading to a significant decrease in venous return, causing hypotension . This also impairs gas exchange, leading to hypoxia . Bronchospasm (Option A) would present with wheezing and difficulty breathing, but it would not cause tracheal deviation or absent breath sounds. Pulmonary embolism (Option C) typically presents with sudden-onset tachycardia and hypoxia. While it is a serious complication, it would not lead to absent breath sounds or tracheal deviation. The trachea would remain in a midline position. Aspiration pneumonitis (Option D) would present with symptoms like crackles, fever, and respiratory distress, but it is not a sudden, acute collapse of the lung that would cause tracheal shift and absent breath sounds.

References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

• [14_Intravenous Anaesthetic Agents] 022 Intravenous Anaesthetic Agents - I

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[14_Intravenous Anaesthetic Agents] 022 Intravenous Anaesthetic Agents - I — Quick Jump

Q1 (p. 591)	*Q2 (p. 592)*	*Q3 (p. 593)*	*Q4 (p. 593)*	*Q5 (p. 594)*	*Q6 (p. 595)*
Q7 (p. 596)	*Q8 (p. 597)*	*Q9 (p. 598)*	*Q10 (p. 599)*	*Q11 (p. 600)*	*Q12 (p. 601)*
Q13 (p. 601)	*Q14 (p. 602)*	*Q15 (p. 603)*	*Q16 (p. 604)*	*Q17 (p. 605)*	*Q18 (p. 605)*
Q19 (p. 606)	*Q20 (p. 607)*	*Q21 (p. 609)*			

Q1: A 40-year-old man is given propofol for anesthesia. Which of the following statements regarding the effects of propofol is false? (Q846877)

A. Inhibits ventilatory drive by depressing hypercarbic and hypoxic responses

B. Causes profound respiratory depression leading to apnea

C. It provides antipruritic and antiemetic effects

D. Increases the cerebral perfusion rate and cerebral blood volume

Correct Answer: D. Increases the cerebral perfusion rate and cerebral blood volume

Explanation: Propofol is an anesthetic agent that causes a reduction in cerebral blood volume, thus reducing the cerebral perfusion rate . Cardiovascular Effects: Hypotension : decreases arterial blood pressure by reducing systemic vascular resistance, preload, and cardiac contractility. Reflex Bradycardia: may occur due to decreased cardiac filling (Bezold–Jarisch reflex). Impaired Baroreflex: markedly impairs normal response to hypotension. Myocardial Oxygen Supply/Demand Mismatch: increases coronary sinus lactate production in some patients. Respiratory Effects: Respiratory Depression: Profound depression, often causing apnea after induction doses. (Option B) Inhibition of Ventilatory Drive: Depresses hypoxic and hypercarbic responses, necessitating qualified personnel for administration. (Option A) Upper Airway Reflex Depression: Exceeds that of thiopental, facilitating procedures like intubation without neuromuscular blockade. Cerebral Effects: Decreased Cerebral Blood Flow: reduces cerebral blood volume and intracranial pressure. Critical CPP Reduction : Can cause a critical reduction in cerebral perfusion pressure (<50 mm Hg) in patients with elevated intracranial pressure. Cerebral Protection: comparable to thiopental during experimental focal ischemia. Antipruritic and antiemetic properties: Provides unique benefits for outpatient anesthesia. (Option C) Anticonvulsant Effects: Can terminate status epilepticus; safe for epileptic patients. Decreased intraocular pressure: Beneficial in ocular surgeries. Other effects: Excitatory Phenomena: May cause muscle twitching, spontaneous movement, or hiccupping during induction. Low Addiction Potential: Uncommon for physical dependence or addiction, but inappropriate use has led to fatalities.

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg: 340-341.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Match the following anesthetic drug with its systemic effect Drug Effect 1. Thiopental a. No effect on HR, ■ MAP 2. Dexmedetomidine b. ■ HR, ■ MAP 3. Propofol c. ■ HR, ■ ICP 4. Ketamine d. ■ HR, ■ ICP (Q846887)

A. 1-c, 2-b, 3-a, 4-d

B. 1-b, 2-a, 3-d, 4-c

C. 1-a, 2-d, 3-c, 4-b

D. 1-d, 2-a, 3-b, 4-c

Correct Answer: A. 1-c, 2-b, 3-a, 4-d

■ *Listen to Audio 1*

Explanation: Thiopental: causes vasodilation & mild tachycardia; reduces cerebral metabolic rate; ■ HR, ■ ICP As a barbiturate, it significantly reduces intracranial pressure (ICP) while often causing a compensatory rise in heart rate (HR) due to peripheral vasodilation. Dexmedetomidine: α■-agonist → bradycardia + hypotension;■ HR, ■ MAP An alpha-2 agonist known for its sedative properties; it typically causes bradycardia (↓ HR) and a decrease in mean arterial pressure (↓ MAP). Propofol: vasodilation → ↓ MAP , HR usually unchanged Propofol causes significant vasodilation (↓ MAP), but unlike other agents, it often blunts the baroreceptor reflex, resulting in little to no change in heart rate. Ketamine: sympathomimetic → ↑ HR, ↑ BP, ↑ ICP ■■■■■■■ A dissociative anesthetic that stimulates the sympathetic nervous system, leading to increased heart rate and potentially increasing intracranial pressure. Agent Cardiovascular Respiratory Cerebral HR MAP Vent B'dil CBF CMRO■ ICP 1. Barbiturates Thiopental ↑↑ ↓↓ ↓↓↓ ↓ ↓↓↓ ↓↓↓ ↓↓↓ Methohexital ↑↑ ↓↓ ↓↓↓ 0 ↓↓↓ ↓↓↓ ↓↓↓ 2. Benzodiazepines Diazepam 0/ ↑ ↓ ↓↓ 0 ↓↓ ↓↓ ↓↓ Lorazepam 0/ ↑ ↓ ↓↓ 0 ↓↓ ↓↓ ↓↓ Midazolam ↑ ↓↓ ↓↓ 0 ↓↓ ↓↓ ↓↓ 3. Ketamine (Phencyclidine derivative) ↑↑ ↑↑ ↓ ↑↑↑ ↑↑ ↑ ↑↑ 4. Etomidate (Imidazole derivative) 0 ↓ ↓ 0 ↓↓↓ ↓↓↓ ↓↓↓ 5. Propofol (Alkylphenol derivative) 0 ↓↓ ↓↓↓ 0 ↓↓↓ ↓↓↓ ↓↓↓ 6. Dexmedetomidine ↓ ↓ 0 ? ↓↓ ↓↓ ↓↓ Key: B'dil: Bronchodilation CBF: Cerebral blood flow CMRO■: Cerebral oxygen consumption (cerebral metabolic rate of oxygen) HR: Heart rate ICP: Intracranial pressure MAP: Mean arterial pressure Vent: Ventilatory drive Changes: 0 = no effect ↑ = increase ↓ = decrease ? = unknown effect

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Table 9-4

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: A 24-year-old male with no significant medical history is scheduled for a minor surgical procedure. The anesthesiologist administers remimazolam for sedation. What is the primary advantage of remimazolam over midazolam in this setting? (Q846886)

A. More rapid and consistent recovery profile.

B. Reduced risk of respiratory depression.

C. Stronger anxiolytic properties.

D. Longer duration of action.

Correct Answer: A. More rapid and consistent recovery profile.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Remimazolam has a significant advantage over midazolam due to its rapid and consistent recovery profile . It is an ultra-short-acting benzodiazepine that is metabolized quickly by tissue esterases , resulting in faster clearance from the body. This leads to quicker recovery times. While both remimazolam and midazolam enhance GABA-A receptor activity, Remimazolam's shorter duration of action makes it more predictable in terms of recovery, reducing the chance of prolonged sedation. Reduced risk of respiratory depression (Option B) : Both remimazolam and midazolam have a similar risk of respiratory depression due to their effects on GABA-A receptors. Stronger anxiolytic properties (Option C) : Both drugs offer similar anxiolytic effects through the same mechanism, with no significant difference in potency. Longer duration of action (Option D) : Remimazolam has a shorter duration of action, not longer, which is why it allows for faster recovery compared to midazolam.

References:

Miller's Anesthesia 9th Edition Pg no. 657, 658, 659

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 75-year-old male with a history of chronic liver disease presents with severe anxiety and insomnia. The patient has been prescribed benzodiazepines in the past, but his physician is concerned about potential drug accumulation and adverse effects due to impaired liver function. Which of the following benzodiazepines is the most appropriate choice for this patient? (Q846885)

A. Diazepam

B. Clonazepam

C. Lorazepam

D. Flurazepam

Correct Answer: C. Lorazepam

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Lorazepam is metabolized directly through glucuronidation (Phase 2) without producing active metabolites, making it a safer option in patients with liver impairment. Metabolism: Class A drugs Here, drugs are metabolized both in phase 1 (by CYP3A4 enzymes in the liver), and their active metabolites undergo Phase 2 (Glucuronidation) reaction, which is then excreted in the urine. Examples: All benzodiazepines except 4 class B drugs (Lorazepam, Oxazepam, Temazepam, Estazolam). Class B drugs Metabolized by phase 2 or direct glucuronidation . Therefore, no active metabolite, so it is safer to use in elderly and liver failure patients. Examples: Lorazepam, Oxazepam, Temazepam, Estazolam Diazepam (Option A) and Clonazepam (Option B) are metabolized by Phase 1 hepatic enzymes (CYP3A4), producing active metabolites that could accumulate in patients with liver disease. Flurazepam (Option D) also undergoes Phase 1 metabolism and has long-acting active metabolites.

References:

Miller's Anesthesia, 9th Edition, Pg no. 657, 658

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A 60-year-old female with Parkinson’s disease is undergoing total knee replacement surgery. The anesthesiologist is considering giving droperidol as part of the anesthesia plan to prevent PONV. The patient is currently on levodopa-carbidopa therapy and has well-controlled symptoms. What should the anesthesiologist consider before administering droperidol? (Q846884)

A. It is contraindicated in patients with Parkinson's disease as it may exacerbate motor symptoms.

B. It will not interfere with Parkinson’s medications and can be safely administered.

C. It should only be given in higher doses to prevent complications in Parkinson's patients.

D. It is a first-line antiemetic in Parkinson’s disease and should be used without caution.

Correct Answer: A. It is contraindicated in patients with Parkinson's disease as it may exacerbate motor symptoms.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Droperidol is contraindicated in Parkinson’s disease because it blocks dopamine receptors , worsening motor symptoms and counteracting levodopa-carbidopa therapy. Alternatives like ondansetron are safer. It will not interfere with Parkinson’s medications and can be safely administered (Option B) : Droperidol can interfere with dopaminergic medications, worsening Parkinson's symptoms. It should only be given in higher doses to prevent complications in Parkinson's patients (Option C) : Higher doses would increase the risk of exacerbating symptoms rather than preventing complications. It is a first-line antiemetic in Parkinson’s disease and should be used without caution (Option D) : Droperidol is not a first-line antiemetic for Parkinson’s patients due to its potential to worsen motor symptoms; safer alternatives exist.

References:

Miller's Anesthesia, 9th Edition, Pg no. 675, 676

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A 40-year-old male with hypertension undergoes fiberoptic intubation. After receiving a loading dose of dexmedetomidine for sedation, his heart rate drops to 45 bpm, and his blood pressure increases slightly. What explains these changes? (Q846883)

A. Initial increase in BP followed by reflex bradycardia

B. Direct SA node depression causing bradycardia

C. Decrease in BP and HR due to alpha-1 agonism

D. Bradycardia from beta-blocker-like activity

Correct Answer: A. Initial increase in BP followed by reflex bradycardia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Dexmedetomidine is an α2-adrenergic agonist that causes a transient increase in blood pressure due to vasoconstriction , followed by reflex bradycardia. This explains the hemodynamic changes seen in the patient. The bradycardia is not due to a direct depressant effect on the heart and the drug does not have beta-blocker-like activity. Uses Procedural sedation (e.g., awake craniotomies, fiberoptic intubation) ICU sedation (e.g., ventilated patients recovering from cardiac surgery) Supplement to general anesthesia (to reduce intraoperative opioid needs or emergence delirium, especially in children) Treatment for alcohol withdrawal and cocaine intoxication side effects. Direct SA node depression causing bradycardia (Option B) :The bradycardia is not a direct effect on the SA node but a reflex response to vasoconstriction and increased blood pressure. Decrease in BP and HR due to

alpha-1 agonism (Option C) : Dexmedetomidine is an α2-agonist, not α1, and initially increases blood pressure, followed by reflex bradycardia. Bradycardia from beta-blocker-like activity (Option D) : Dexmedetomidine does not act on beta receptors but reduces sympathetic outflow through α2-receptor activation, leading to bradycardia.

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg no. 342, 343

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: During induction of anesthesia, a patient receiving etomidate shows an increase in blood pressure and heart rate. How does etomidate primarily achieve cardiovascular stability? (Q846882)

A. By activating the sympathetic nervous system

B. By affecting the baroreceptor function

C. Through α2-adrenoceptor activation

D. By enhancing myocardial oxygen demand

Correct Answer: C. Through α2-adrenoceptor activation

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Etomidate activates α2-adrenoceptors , which increases blood pressure and contributes to cardiovascular stability by preventing excessive sympathetic stimulation . Etomidate Mechanisms of Action Depresses the reticular activating system. Mimics GABA's inhibitory effects by binding to GABA A receptors , particularly the R(+) isomer. Structure-Activity Relationships Contains a carboxylated imidazole The imidazole ring provides water solubility in acidic solutions and lipid solubility at physiological pH. Pharmacokinetics Absorption : Only available for IV use , primarily for induction of anesthesia. Distribution: Rapid onset due to high lipid solubility; redistribution lowers plasma concentration post-awakening. Biotransformation: Rapidly hydrolyzed by hepatic microsomal enzymes to an inactive metabolite . Excretion : Hydrolysis products are excreted in urine. CNS Effects Induces hypnosis via GABA A receptor modulation (0.3 mg/kg). Reduces cerebral blood flow and cerebral metabolic rate of oxygen without affecting MAP. Decreases intracranial pressure (ICP) by 50% in patients with increased ICP. Respiratory Effects Minimal impact on ventilation; does not release histamine. May cause brief hyperventilation and mild apnea, with slight $PaCO_2$ increase. Cardiovascular Effects Minimal impact on sympathetic tone and myocardial function. It may cause mild arterial blood pressure decline without significant changes in cardiac output or contractility. Endocrine Effects Inhibits 11β-hydroxylase , reducing cortisol and mineralocorticoid production, leading to adrenal suppression. Clinical Uses Induction dose : 0.2 to 0.6 mg/kg IV. Suitable for patients with cardiovascular issues and Increased ICP Effective in treating endogenous hypercortisolemia . Side Effects Associated with postoperative nausea and vomiting (PONV), Pain on injection,

Myoclonic movements , and Hiccups. Pre-medication with lidocaine can reduce pain ; myoclonus can be lowered with midazolam or magnesium. Novel Derivatives Methoxycarbonyl etomidate (MOC) : Rapidly metabolized, minimal adrenal suppression, similar hypnotic potency. Carboetomidate: Reduces adrenal suppression potency, maintains hypnotic effects, minimal hemodynamic changes. Methoxycarbonyl-carboetomidate: Combines benefits of etomidate without adrenal suppression, longer action duration. CPMM and DMMM: Newer derivatives showing higher potency and rapid recovery post-infusion, promising in animal studies. Etomidate maintains hemodynamic stability by not affecting the sympathetic nervous system or baroreceptor function. (Option A & B) Oxygen Supply and Demand: Maintains a stable myocardial oxygen supply-to-demand ratio. (Option D)

References:

Miller's Anesthesia, 9th Edition, Pg no. 668

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 47-year-old male patient with a history of adrenal carcinoma and hypercortisolemia is scheduled for a surgical procedure. The anesthesiology team is evaluating induction agents that suppress adrenal function. Which of the following agents can be used in this patient? (Q846881)

A. Propofol

B. Ketamine

C. Etomidate

D. Thiopental

Correct Answer: C. Etomidate

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Etomidate inhibits 11β-hydroxylase in the adrenal cortex, which is essential for cortisol synthesis. Therefore, it effectively decreases cortisol levels , making it suitable for patients with hypercortisolemia. Etomidate Mechanisms of Action Depresses the reticular activating system. Mimics GABA's inhibitory effects by binding to GABA A receptors , particularly the R(+) isomer. Structure-Activity Relationships Contains a carboxylated imidazole The imidazole ring provides water solubility in acidic solutions and lipid solubility at physiological pH. Pharmacokinetics Absorption : Only available for IV use , primarily for induction of anesthesia. Distribution: Rapid onset due to high lipid solubility; redistribution lowers plasma concentration post-awakening. Biotransformation: Rapidly hydrolyzed by hepatic microsomal enzymes to an inactive metabolite . Excretion : Hydrolysis products are excreted in urine. CNS Effects Induces hypnosis via GABA A receptor modulation (0.3 mg/kg). Reduces cerebral blood flow and cerebral metabolic rate of oxygen without affecting MAP. Decreases intracranial pressure (ICP) by 50% in patients with increased ICP. Respiratory Effects Minimal impact on

ventilation; does not release histamine. May cause brief hyperventilation and mild apnea, with slight PaCO2 increase. Cardiovascular Effects Minimal impact on sympathetic tone and myocardial function. It may cause mild arterial blood pressure decline without significant changes in cardiac output or contractility. Endocrine Effects Inhibits 11β-hydroxylase , reducing cortisol and mineralocorticoid production, leading to adrenal suppression. (Option A) Clinical Uses Induction dose : 0.2 to 0.6 mg/kg IV. Suitable for patients with cardiovascular issues and Increased ICP Effective in treating endogenous hypercortisolemia . Side Effects Associated with postoperative nausea and vomiting (PONV), Pain on injection, Myoclonic movements , and Hiccups. Pre-medication with lidocaine can reduce pain ; myoclonus can be lowered with midazolam or magnesium. Novel Derivatives Methoxycarbonyl etomidate (MOC) : Rapidly metabolized, minimal adrenal suppression, similar hypnotic potency. Carboetomidate: Reduces adrenal suppression potency, maintains hypnotic effects, minimal hemodynamic changes. Methoxycarbonyl-carboetomidate: Combines benefits of etomidate without adrenal suppression, longer action duration. CPMM and DMMM: Newer derivatives showing higher potency and rapid recovery post-infusion, promising in animal studies. Propofol (Option A) , Ketamine (Option B) , and Thiopental (Option C) do not have specific effects on adrenal hormone synthesis and are not known to inhibit 11β-hydroxylase. They are primarily used for their anesthetic and sedative properties.

References:

Miller's Anesthesia, 9th Edition, Pg no. 667-669

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: A 60-year-old female patient with a history of chronic migraines and increased intracranial pressure due to a recent stroke is scheduled for a minor procedure requiring anesthesia. Which anesthetic agent should be avoided in this patient? (Q846880)

A. Thiopentone

B. Midazolam

C. Ketamine

D. Sevoflurane

Correct Answer: C. Ketamine

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Ketamine causes increased cerebral blood flow , which can lead to elevated intracranial pressure . This is especially problematic in patients with conditions such as stroke, where ICP management is crucial to prevent further neurological damage. Thiopentone (Option A) : It is the IV induction agent of choice in increased ICP. Midazolam (Option B) : A benzodiazepine that provides sedation and amnesia without significantly affecting

ICP. Sevoflurane (Option D) : An inhalational anesthetic that is typically well-tolerated and does not have a direct effect on increasing ICP, making it a safer option in this scenario.

References:

Miller's Anesthesia, 9th Edition, Pg no. 664-666

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: Which of the following statements about ketamine is not true in the context of its pharmacological properties and clinical use? (Q846879)

A. It primarily acts as an antagonist at N-methyl-D-aspartate (NMDA) receptors, inducing dissociative anesthesia.

B. The S(+) isomer is less potent as an analgesic than the R(-) isomer.

C. It has high lipid solubility, allowing for rapid brain uptake.

D. It is metabolized in the liver, and its elimination half-life is approximately 2 hours .

Correct Answer: B. The S(+) isomer is less potent as an analgesic than the R(-) isomer.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The S(+) isomer of ketamine is more potent as an analgesic than the R(-) isomer. Ketamine: Mechanisms of Action Inhibits N-methyl-D-aspartate receptor (NMDA) receptors (Option A) , affecting the CNS. Induces dissociative anesthesia , making patients appear conscious but unable to process sensory input. Influences endogenous analgesic pathways. It is an analog of phencyclidine. It is a racemic mixture of R(-) ketamine and S(+) ketamine . Molecular weight: 238 kD High lipid solubility (5 to 10 times that of thiopental) (Option C) and low protein binding (12%). S(+) isomer (Ketanest) is 3 to 4 times more potent as an analgesic with fewer psychomimetic effects. (Option B) S(+) ketamine causes cognitive impairment and reduced reaction time despite its analgesic properties. S(+) isomer has higher NMDA affinity and potency. Pharmacokinetics Absorption: Primarily given intravenously or intramuscularly; peak levels in 10-15 minutes. Distribution: Highly lipid-soluble; rapid brain uptake with a 10-15 minute distribution half-life. Biotransformation: Metabolized in the liver to active metabolites; tolerance develops with repeated use. (Option D) Excretion: Renally excreted ; elimination half-life of about 2 hours. Systemic effects, uses and C/I of Ketamine: Ketamine is the worst enemy of CNS & friend of other systems System Effects CNS It is associated with increased cerebral oxygen consumption , blood flow , and intracranial pressure It causes functional disorganization by selectively depressing neuronal activity in the cortex and thalamus while stimulating the limbic system, leading to disrupted pain perception and emotional processing. Emergence reactions , including vivid dreams, hallucinations, and illusion, occurs due to depression of auditory and visual relay nuclei, It provides analgesia , amnesia , and unconsciousness , making it a "complete" anesthetic. CVS Increases arterial blood pressure , heart rate , and cardiac output, particularly after rapid bolus injections. Stimulates the sympathetic nervous system and inhibits norepinephrine reuptake, increasing pulmonary artery

pressure and myocardial workload. Direct myocardial depression can occur with sympathetic blockade or catecholamine depletion. Respiratory Racemic ketamine is a strong bronchodilator , useful in asthmatic patients . Upper airway reflexes remain intact. Excessive salivation can be managed with anticholinergics (e.g., glycopyrrolate). Muscle It increases muscle tone Contraindications: Head injuries - ↑ ICP Brain trauma Seizures Glaucoma - ↑ IOP Ischemic heart disease Schizophrenia - It causes hallucinations Emergence reaction: Seen during the recovery phase Features: Hallucinations Delusions Nystagmus Confusion Fear

References:

Miller's Anesthesia, 9th Edition, Pg no. 661, 662

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: A patient is in long-term sedation with propofol due to a neurological condition. The patient develops rhabdomyolysis, hyperkalemia, and lactic acidosis. Which of the following steps would not be useful in managing this scenario? (Q846878)

A. Hemodialysis

B. Sodium bicarbonate infusion

C. Lowering the dose of propofol

D. Fluid management and monitoring

Correct Answer: C. Lowering the dose of propofol

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The clinical scenario points to the diagnosis of propofol infusion syndrome, which is treated with immediate cessation of propofol infusion and not just by lowering the dose. Management of Propofol Infusion Syndrome (PRIS) Immediate cessation of propofol infusion. Supportive care, including fluid management and monitoring of metabolic status. (Option D) Addressing electrolyte imbalances and other complications as they arise. Sodium bicarbonate infusion, hemodialysis, and hemofiltration for metabolic and lactic acidosis. (Options A & B) Oxygenation and circulatory support.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9671386/ Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg:338-341.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: A 12-year-old child is scheduled for surgery and has a history of asthma. Which preoperative medication should be considered to reduce airway secretions and minimize the risk of bronchospasm? (Q846828)

A. Midazolam

B. Glycopyrrolate

C. Ondansetron

D. Fentanyl

Correct Answer: B. Glycopyrrolate

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Glycopyrrolate is an anticholinergic medication that reduces airway secretions and minimizes bronchospasm by blocking acetylcholine at muscarinic receptors . It is especially important for asthmatic patients at risk of increased secretions and bronchoconstriction. Midazolam (Option A): It is used for anxiety reduction preoperatively. Ondasteron (Optin C): Used for the prevention of postoperative nausea and vomiting Fentanyl (Option D): Used for pain management and preferred for its rapid clearance and potency.

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg no. 516, 555 Basic Anesthesia Review Edited by Alaa Abd-Elsayed pg no. 235, 236, 237

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: A 40-year-old man is given propofol for anesthesia. Which of the following statements regarding the effects of propofol is false? (Q846876)

A. Inhibits ventilatory drive by depressing hypercarbic and hypoxic responses

B. Causes profound respiratory depression leading to apnea

C. It provides antipruritic and antiemetic effects

D. Increases the cerebral perfusion rate and cerebral blood volume

Correct Answer: D. Increases the cerebral perfusion rate and cerebral blood volume

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Propofol is an anesthetic agent that causes a reduction in cerebral blood volume, thus reducing the cerebral perfusion rate . Respiratory Depression: Profound depression, often causing apnea after induction doses. (Option B) Inhibition of Ventilatory Drive: Depresses hypoxic and hypercarbic responses, necessitating qualified personnel for administration. (Option A) Antipruritic and antiemetic properties: Provides unique benefits for outpatient anesthesia. (Option C)

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg: 340-341.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 4-year-old patient in the ICU requires sedation while on mechanical ventilation. The medical team considers using Propofol. Which of the following is a key pharmacokinetic feature of Propofol that supports its use in this scenario? (Q846875)

A. Long onset of action.

B. Minimal hangover effects after recovery.

C. High risk of prolonged sedation.

D. Primarily excreted via feces.

Correct Answer: B. Minimal hangover effects after recovery.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Propofol is known for its rapid onset and quick recovery , with minimal residual sedation effects after administration. This characteristic is particularly beneficial for patients in the ICU, as it facilitates timely assessment and care. Long onset of action (Option A): Propofol has a rapid onset; effects are typically observed for 2–8 minutes after administration. High risk of prolonged sedation (Option C): Propofol has a short initial distribution half-life, leading to quick awakening. Primarily excreted via feces (Option D): Propofol is primarily eliminated via urine; unaffected by end-stage kidney disease.



References:

Morgan and Mikhail's Clinical Anesthesiology, 7th Edition, Page 338-341.
https://www.ncbi.nlm.nih.gov/books/NBK430884/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A patient is sedated using methohexital for surgery. What is false about methohexital? (Q846874)

A. It belongs to the barbiturates group of drugs

B. Acts by binding to GABA (A) receptors

C. Can be used to briefly control grand-mal seizures

D. Produces muscle relaxation and analgesia

Correct Answer: D. Produces muscle relaxation and analgesia

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Methohexital, which is a short-acting barbiturate, does not cause muscle relaxation and does not affect pain perception . It also causes involuntary skeletal muscle contractions. Mechanism of Action: GABA(A) Receptor - Binds to GABA(A) receptors, enhancing GABA's effects by increasing the duration of chloride-specific ion channel opening. Induces sedation to unconsciousness based on dosage; can briefly control grand mal seizures (50-100 mg IV).

References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg: 320-326.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q16: A 45-year-old male is undergoing an elective surgical procedure Thiopental sodium is administered for induction. Shortly after the injection, the anesthesiologist notices that the patient's arm is becoming pale and cold, indicating possible intra-arterial injection of the anesthetic.What is the appropriate sequence of steps to manage this situation? (Q846873)

A. Administer 5 ml of 2% procaine or lignocaine into the affected artery, then consider a brachial plexus block.

B. Perform an early arteriotomy, then start full heparinization.

C. Administer 5 ml of 2% procaine or lignocaine, then provide deep anesthesia.

D. Start full heparinization immediately, then assess for the need for an arteriotomy.

Correct Answer: A. Administer 5 ml of 2% procaine or lignocaine into the affected artery, then consider a brachial plexus block.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Intra arterial injection: Induces severe inflammatory and necrotic reaction, threatening limb survival. Treatment: Inject 5 ml of 2% procaine or lignocaine into the affected artery , ideally through the existing needle . Brachial plexus block or stellate ganglion block is considered an alternative. Anticoagulation: Full heparinization is recommended if surgery is not performed. Surgical Treatment: Early arteriotomy may be considered. The immediate need is to manage the local tissue effects first before considering surgical intervention (Option B). General Anesthesia: To decrease sympathetic tone in the arm. Avoid deep anesthesia that could lower blood pressure and cardiac output (Option C) Starting heparinization is not the first step; the immediate priority is to address the local complication before considering systemic treatment options (Option D).

References:

Miller’s Anesthesia, 9th edition, Pg: 653 KD Tripathi Essentials of Medical Pharmacology, 8th edition, Pg: 409 Goodman & Gilman’s Pharmacology, 14th edition, Pg: 476 https://pdf.sciencedirectassets.com/318044/1-s2.0-S0007091217X6827X/1-s2.0-S0007091217526471/main.pdf?X-Amz-Security-Token=IQ

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: A 65-year-old patient undergoing neurosurgery is administered thiopental sodium as an induction agent. Which of the following statements regarding its effects is true? (Q846872)

A. It increases cerebral blood flow and oxygen consumption.

B. It causes peripheral vasodilation and increased heart rate.

C. It enhances respiratory rate and tidal volume during awakening.

D. It enhances hepatic blood flow and reduces the metabolism of other drugs.

Correct Answer: B. It causes peripheral vasodilation and increased heart rate.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Effect on Cardiovascular System: Causes peripheral vasodilation , leading to the pooling of blood in the venous system, which reduces cardiac output. Increases heart rate due to a baroreceptor-mediated sympathetic reflex compensating for reduced cardiac output and blood pressure. It increases cerebral blood flow and oxygen consumption (Option A): Sodium thipopental reduces cerebral oxygen consumption by up to 50% without causing harm due to the parallel decrease in CBF. It enhances respiratory rate and tidal volume during awakening (Option C): Sodium thiopental reduces both tidal volume and respiratory rate during awakening. It enhances hepatic blood flow and reduces the metabolism of other drugs (Option D): Chronic exposure to Sodium thiopental induces hepatic enzymes, leading to an increased rate of drug metabolism.

References:

Miller’s Anesthesia, 9th edition, Pg: 651,652 Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg: 165-169 https://journals.lww.com/ijaweb/fulltext/2007/51030/effect_of_propofol_and_thiopentone_on_intracranial.8.aspx# :

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: A 65-year-old patient is scheduled for elective surgery requiring general anesthesia. The anesthesiologist decides to use thiopental sodium as an induction agent. Which of the following statements is true about thiopental sodium? (Q846871)

A. It has a long duration of action due to extensive renal metabolism.

B. Its rapid onset is primarily due to its high potency and redistribution.

C. It appears as a white milky liquid.

D. Its elimination half-life is approximately 1 hour.

Correct Answer: B. Its rapid onset is primarily due to its high potency and redistribution.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Thiopental sodium has a rapid onset due to its high lipid solubility and high nonionized fraction, allowing for quick redistribution from the bloodstream to the brain. It has a long duration of action due to extensive renal metabolism (Option A): Thiopental has a short duration of action and is metabolised and excreted in the liver. It appears as a white milky liquid (Option C): Thiopental is a yellowish-white crystalline powder or pale greenish hygroscopic powder Its elimination half-life is approximately 1 hour (Option D): Elimination T1/2 is 10.4 hours for Thiopental

References:

Miller's Anesthesia, 9th edition, Pg: 648,649 Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg: 165-169 KD Tripathi Essentials of Medical Pharmacology, 8th edition, Pg: 408
https://www.sciencedirect.com/science/article/abs/pii/S0099542808604013
https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/sodium-thiopental

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: Which of the following statements is correct regarding intravenous anesthetic drugs? (Q846870)

A. Barbiturates primarily block NMDA receptors to induce anesthesia.

B. Barbiturates can be safely mixed with lactated Ringer's solution.

C. Thiopental is mixed with anhydrous sodium carbonate.

D. Ketamine primarily acts on GABA-A inhibitory receptors.

Correct Answer: C. Thiopental is mixed with anhydrous sodium carbonate.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Barbiturates (thiopental , methohexital, pentobarbital) are formulated as sodium salts, mixed with 6% by weight anhydrous sodium carbonate (increases alkalinity and therefore increases shelf life) Reconstituted with water, 5% glucose, or normal saline to produce: 2.5% solution of thiopental 2% solution of thiamylal 1% solution of methohexital Barbiturates can be safely mixed with lactated Ringer's solution (Option B): Barbiturates should not be reconstituted with lactated Ringer's solution or mixed with acidic solutions, as this reduces alkalinity and may cause precipitation of the drug as free acid. Barbiturates primarily block NMDA receptors to induce anesthesia (Option A): While NMDA receptor antagonism can play a role in some anesthetics (like ketamine), barbiturates mainly enhance GABA-A receptor activity. Ketamine primarily acts on GABA-A inhibitory receptors (Option D): Ketamine primarily acts as an NMDA receptor antagonist, not a GABA-A inhibitor.

References:

Miller's Anesthesia, 9th edition, Pg: 648,649 Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg: 165-179

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@Neet_pg_bot

Q20: A 38-year-old male is being taken up for emergency surgery following a trauma. The anesthesiologist decides to give medications as prophylaxis for aspiration. Which of the following drugs is not used as a prophylactic agent? (Q846869)

A. Bicitra

B. Metoclopramide

C. H2-antagonists

D. Rocuronium

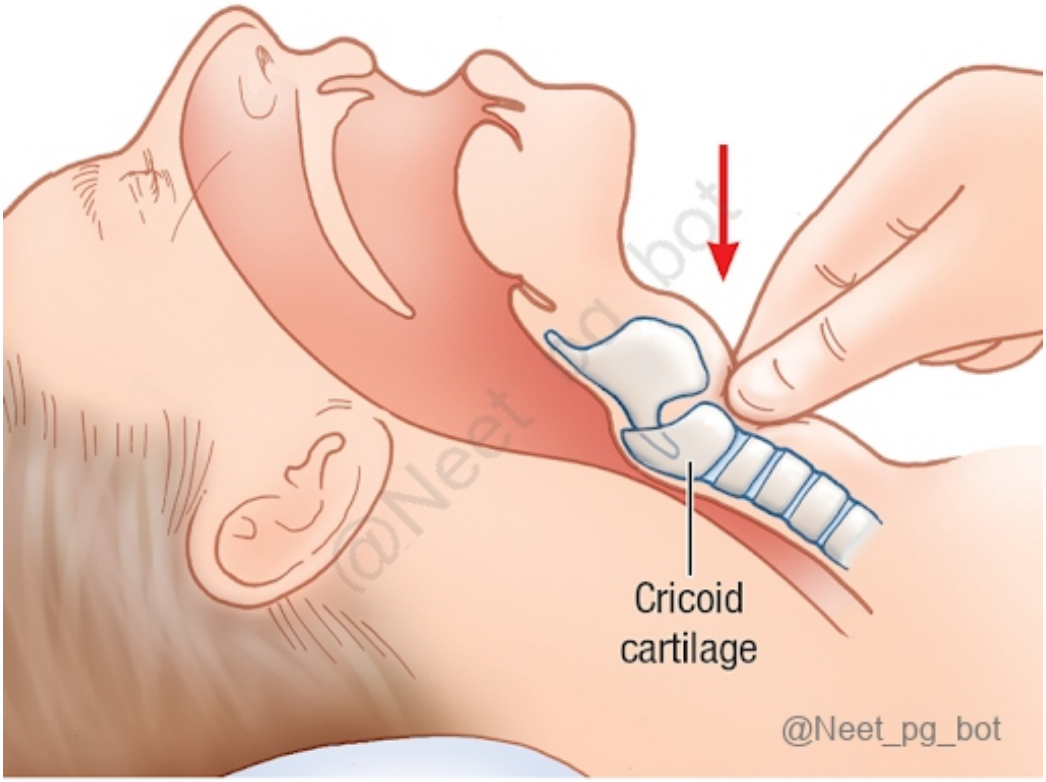
Correct Answer: D. Rocuronium

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Rocuronium is an intermediate-acting nondepolarizing neuromuscular blocking drug that acts as a muscle relaxant that helps in faster and more efficient intubation. Any patient taken up for an emergency surgery or trauma is considered to have a "full stomach". If the patient has consumed food and it is a case of elective surgery, it must be postponed. But if it cannot be delayed, regional or local anesthesia is preferred. When these methods are impractical, the airway must be secured and precautions are taken to prevent aspiration as explained below. Risk Factors for Aspiration: Full stomach Symptomatic gastroesophageal reflux disease (GERD) Hiatal

hernia Presence of a nasogastric tube Morbid obesity Diabetic gastroparesis Pregnancy Aspiration Prophylaxis: Goal: Decrease gastric volume and increase gastric fluid pH. Commonly used agents: Nonparticulate antacids (e.g., Bicitra) (Option A) Promotility drugs (e.g., metoclopramide) (Option B) H2-receptor antagonists (Option C) Can be used alone or in combination. Anesthetic Management and Rapid Sequence Induction (RSI) : Preoxygenation Always pre-oxygenate patients before induction. Patients with lung disease require 3 to 5 minutes of preoxygenation. Preparation Have a variety of laryngoscope blades, video laryngoscopes, intubation bougies, and endotracheal tubes ready and immediately available. Cricoid Pressure (Sellick Maneuver) An assistant applies firm pressure over the cricoid cartilage before induction to compress the esophagus and reduce the risk of aspiration. Excessive pressure during active regurgitation can cause esophageal rupture; the effectiveness of this maneuver remains uncertain. Induction Agent Administration Administer a bolus dose of propofol ; modify the dose if cardiovascular instability is present. Alternative rapid-acting agents include etomidate, ketamine, and methohexital. Neuromuscular Blockade Administer succinylcholine (1.5 mg/kg) or rocuronium (0.9–1.2 mg/kg) immediately after the induction dose, even if the patient is still conscious Ventilation Do not use bag-mask ventilation to avoid inflating the stomach and increasing aspiration risk. After loss of muscle response, rapidly intubate the patient while maintaining cricoid pressure until the cuff is inflated and the tube position is confirmed. Gentle ventilation may be allowed if cricoid pressure is maintained. Difficult Intubation If intubation is difficult, continue cricoid pressure and gently ventilate with oxygen until another attempt can be made. If unsuccessful, allow spontaneous ventilation and consider awake intubation. Sugammadex can be used to reverse rocuronium-induced muscle relaxation. Postoperative Management Keep the patient intubated until airway reflexes and consciousness return. Indications for Tracheal Intubation : Full stomach or increased risk for aspiration of gastric secretions or blood. Critically ill patients. Significant lung abnormalities (e.g., low lung compliance, high airway resistance). Patients requiring lung isolation. Patients undergoing surgeries where SGAs would interfere. Patients needing postoperative ventilatory support. Failed SGA placement. Surgical requirement for NMBDs. Predicted difficult airway. Prolonged procedures. Emergency Situations : Protect patients from pulmonary aspiration while managing intraocular pressure (IOP) during procedures. Succinylcholine can cause a modest increase in IOP; its use is controversial but may be acceptable based on current evidence. Alternative Options : Use a higher dose of Rocuronium (0.9-1.2 mg/kg) and reverse with Sugammadex. Ensure adequate relaxation using a peripheral nerve stimulator before intubation.



References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 537-539. Miller's Anesthesia, 9th Edition, Pg: 1381, 1382.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q21: A 35-year-old woman undergoes a laparoscopic hysterectomy under general anesthesia. After 5 minutes of preoxygenation with 100% oxygen, anesthesia is induced and maintained. What is the main purpose of preoxygenation in this case? (Q846829)

A. To increase CO 2 retention

B. To ensure the patient's lungs are fully saturated with oxygen before induction

C. To reduce anesthesia depth requirement

D. To reduce respiratory rate during anesthesia

Correct Answer: B. To ensure the patient's lungs are fully saturated with oxygen before induction

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Preoxygenation involves administering 100% oxygen for about 5 minutes before anesthesia induction, which increases lung and blood oxygen levels. This process creates an oxygen reserve that is crucial during the apnea period that follows induction and intubation, helping to prevent hypoxemia (low blood oxygen levels) during this critical time. Increasing CO 2 retention is not the goal of preoxygenation (Option A). In fact, it may help to improve gas exchange. Preoxygenation does not affect the depth of anesthesia required (Option C). It focuses on increasing oxygen reserves. Preoxygenation does not directly influence the respiratory rate during anesthesia (Option D).

References:

www.ucl.ac.uk/anaesthesia/sites/anaesthesia/files/IntroductionToAnaesthesia.pdf

japractice.co.uk/2017/07/pre-oxygenation-why-and-how/12582

↑ *Back to this question in Part A*

@Neet_pg_bot

• [14_Intravenous Anaesthetic Agents] 023 Previous Year Questions

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[14_Intravenous Anaesthetic Agents] 023 Previous Year Questions — Quick Jump

Q1 (p. 611) *Q2 (p. 612)* *Q3 (p. 613)* *Q4 (p. 613)* *Q5 (p. 614)*

Q1: Sodium thiopentone is regarded as an ultrashort-acting drug due to (true or false) (Q865386)

A. Rapid redistribution

B. Metabolism

C. Excretion

D. Short elimination half-life

Correct Answer: A. Rapid redistribution

Explanation: Sodium thiopentone (Thiopental) is a barbiturate used for induction of anesthesia . It is classified as an ultrashort-acting agent , and this characteristic is due to its rapid redistribution Thiopental sodium has a rapid onset due to its high lipid solubility and high nonionized fraction, allowing for quick redistribution from the bloodstream to the brain. Thiopentone Sodium: Use: Intravenous induction agent. Prepared concentration: 2.5% solution Form : Yellowish-white crystalline powder or pale greenish hygroscopic powder Odor: Garlic-like odor. Formulation : Thiopental sodium for injection is a sterile mixture of thiopental sodium and anhydrous sodium carbonate (buffer). Should not be reconstituted with lactated Ringer’s solution or mixed with acidic solutions, as this reduces alkalinity and may cause precipitation of the drug as free acid. pH: 11 Melting Point : The free acid (thiopental) melts at 158–160°C. Solubility : Water : Soluble in 1.5 parts of water at 20°C. Alcohol : Partially soluble. Insoluble : Practically insoluble in ether, benzene, and petroleum ether. Pharmacokinetics: Higher potency. Rapid onset and short duration of action. Dose: 3-6 mg/kg Duration of onset: 15-20 seconds Duration of action: 6-10 minutes Elimination T1/2: 12 hours (Option D) Exhibits first-order kinetics. Unique property: Duration of induction dose is determined by redistribution . Metabolism: Liver (plays a role in elimination, not in the rapid offset of action) (Option B) Excretion site: Kidney , (renal excretion is also slow and doesn't affect the immediate duration of action) (Option C)

References:

Miller’s Anesthesia, 9th edition, Pg: 648,649

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg: 165-169

KD Tripathi Essentials of Medical Pharmacology, 8th edition, Pg: 408

https://www.sciencedirect.com/science/article/abs/pii/S0099542808604013

https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/sodium-thiopental

https://www.openanesthesia.org/keywords/thiopental/#:~:text=Thiopental%20is%20predominantly%20metabolized%20in,and%20acts%20as%20a%20reservoir.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which of the following is the most common drug used in day care surgery/TIVA? (Q860078)

A. Sodium thiopentone

B. Propofol

C. Halothane

D. Ketamine

Correct Answer: B. Propofol

Explanation: Propofol Propofol is the preferred choice for daycare surgery and Total Intravenous Anesthesia (TIVA) due to its rapid onset and quick recovery profile. Additionally, Propofol is associated with a lower incidence of postoperative nausea and vomiting (PONV) Propofol Appearance: Clear, white emulsion, available as a 1% aqueous preparation (10 mg/mL) for IV administration. Composition of Propofol Chemical structure: phenol ring with two isopropyl groups . Solubility: not water-soluble; available as a 1% aqueous oil-in-water emulsion. Emulsion ingredients: contains soybean oil, glycerol, and egg lecithin. Storage requirements: this should be administered within 6 hours of opening due to the risk of bacterial contamination, and a strict sterile technique is required 0.005% disodium edetate or 0.025% sodium metabisulfite helps slow bacterial growth. Pharmacokinetics of Propofol Administration Route: only available for intravenous use. Onset of Action: rapid onset ; effects typically observed for 2–8 minutes after administration. Distribution: short initial distribution half-life leads to quick awakening . Recovery: faster recovery compared to other anesthetics, minimal "hangover" effects . Biotransformation: high clearance exceeding hepatic blood flow (possible extrahepatic metabolism); metabolism occurs in the liver, resulting in inactive metabolites. Excretion : Primarily eliminated via urine; unaffected by end-stage kidney disease . Clinical Uses Induction of Anesthesia : Suitable for patients aged 3 years and older ; can be used in younger children with IV access. Maintenance of Anesthesia : For patients over 2 months old. Sedation : During monitored anesthesia for various procedures. For intubated, mechanically ventilated ICU patients. Off-Label Uses Management of refractory status epilepticus in both children and adults. Treatment of refractory postoperative nausea and vomiting. Incorrect Options: Options A, C and D are less commonly chosen for daycare surgeries

References:

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pg: 338-341

https://www.ncbi.nlm.nih.gov/books/NBK430884/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: Which of the following intravenous anesthetics functions as an NMDA receptor antagonist? (Q860086)

A. Ketamine

B. Propofol

C. Thiopentone sodium

D. Midazolam

Correct Answer: A. Ketamine

Explanation: Ketamine is an NMDA (N-methyl-D-aspartate) receptor antagonist. Mechanism of Action: Inhibits N-methyl-D-aspartate receptor (NMDA) receptors (Option A) , affecting the CNS. Induces dissociative anesthesia , making patients appear conscious but unable to process sensory input. Influences endogenous analgesic pathways. High lipid solubility (5 to 10 times that of thiopental) and low protein binding (12%). S(+) isomer (Ketanest) is 3 to 4 times more potent as an analgesic with fewer psychomimetic effects. S(+) ketamine causes cognitive impairment and reduced reaction time despite its analgesic properties. S(+) isomer has higher NMDA affinity and potency. Pharmacokinetics Absorption: Primarily given intravenously or intramuscularly; peak levels in 10-15 minutes. Distribution: Highly lipid-soluble; rapid brain uptake with a 10-15 minute distribution half-life. Biotransformation: Metabolized in the liver to active metabolites; tolerance develops with repeated use. Excretion: Renally excreted ; elimination half-life of about 2 hours. Incorrect Options: Propofol and Thiopentone (Options B and C) are direct GABA-A receptor agonists that enhance GABA’s effects. Midazolam (Options D) is a benzodiazepine , increases GABA's effect by modifying the receptor to make it more responsive to GABA.

References:

Miller's Anesthesia 9th Edition Pg no. 664-666

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Intravenous induction agent of choice for day care anesthesia is? (Q859312)

A. Ketamine

B. Propofol

C. Etomidate

D. Thiopentone

Correct Answer: B. Propofol

Explanation: Propofol is the intravenous induction agent of choice for day-care anaesthesia due to its rapid onset, antiemetic effects, short duration of action, and smooth recovery profile. It allows patients to wake up quickly with minimal residual sedation, which is ideal for day-care procedures requiring early discharge. Incorrect Options: Ketamine (option A): While ketamine provides excellent analgesia and maintains cardiovascular stability, it is associated with slower recovery and potential emergence reactions (e.g., hallucinations). These side effects make it less suitable for day-care anaesthesia. Etomidate (option C) has a rapid onset and is haemodynamically stable, but it is associated with adrenal suppression and myoclonus, making it less ideal for routine day-care procedures. Thiopentone (option D) has a rapid onset, but its prolonged recovery time due to accumulation in body fat makes it unsuitable for day-care anaesthesia. It also lacks antiemetic properties, which are beneficial in outpatient settings.

References:

Morgan and Mikhail's Clinical Anaesthesia, 7th Edition, Page 175, 213, 479

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which of the following statements about ketamine when used in combination with another induction agent is incorrect? (Q878929)

A. Enhances the induction effect

B. Reduces opioid tolerance

C. Increases sensitivity to opioid analgesia

D. Produces a dissociative state

Correct Answer: D. Produces a dissociative state

Explanation: Ketamine alone produces dissociative anesthesia — a functional and sensory dissociation between thalamo-neocortical and limbic systems. However, when combined with other IV induction agents (e.g. propofol in "ketofol"), this dissociative effect is blunted . Incorrect Options: Enhances the induction effect (Option A): Ketamine's sympathetic stimulation offsets propofol-induced hypotension and produces smoother induction. Reduces opioid tolerance (Option B): Ketamine reduces opioid tolerance by blocking NMDA receptors. Increases sensitivity to opioid analgesia (Option C): Ketamine prevents NMDA-mediated central sensitization and enhances analgesic efficacy.

References:

Morgan and Mikhail’s Clinical Anesthesiology, 5th Edition, Page 182, 184

↑ *Back to this question in Part A*

@Neet_pg_bot

• [15_Inhalational Anaesthetic Agents] 024 Inhalational Anaesthetics

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[15_Inhalational Anaesthetic Agents] 024 Inhalational Anaesthetics — Quick Jump

Q1 (p. 616)	*Q2 (p. 617)*	*Q3 (p. 618)*	*Q4 (p. 619)*	*Q5 (p. 620)*	*Q6 (p. 621)*
Q7 (p. 622)	*Q8 (p. 623)*	*Q9 (p. 624)*	*Q10 (p. 624)*	*Q11 (p. 625)*	*Q12 (p. 626)*
Q13 (p. 627)	*Q14 (p. 628)*	*Q15 (p. 629)*	*Q16 (p. 630)*	*Q17 (p. 630)*	*Q18 (p. 631)*
Q19 (p. 632)	*Q20 (p. 633)*				

Q1: Which of the following statements about the systemic effects of desflurane is true? (Q846810)

A. Increase in systemic vascular resistance.

B. Severe nephrotoxicity.

C. Increases cerebral blood flow (CBF) while decreasing cerebral oxygen consumption.

D. No effect on respiratory rate.

Correct Answer: C. Increases cerebral blood flow (CBF) while decreasing cerebral oxygen consumption.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Desflurane increases cerebral blood flow and intracranial pressure while decreasing cerebral oxygen consumption. Option A: Desflurane decreases systemic vascular resistance and arterial blood pressure. Option B: Minimal nephrotoxicity, but decreases in urine output and glomerular filtration occur with reduced cardiac output. Option D: Causes decreased tidal volume and increased respiratory rate. It is pungent and can cause airway irritation, making it unsuitable for inhalation induction.



References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.309-312

↑ *Back to this question in Part A*

@Neet_pg_bot

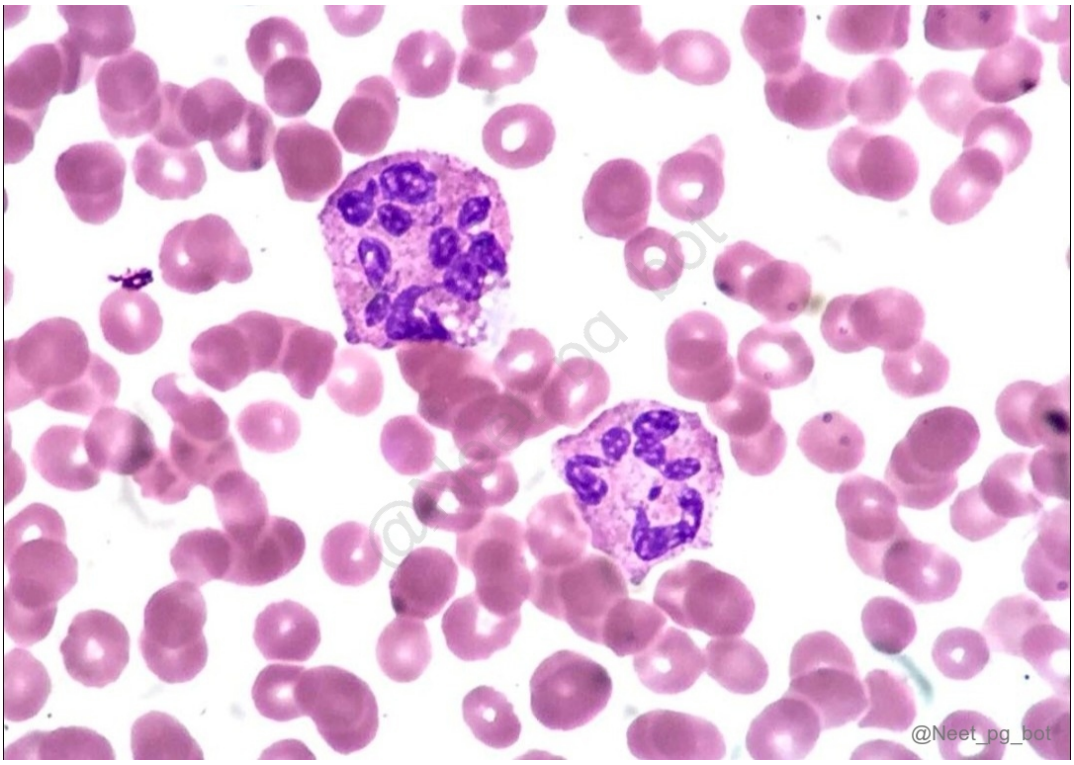
Q2: A 45-year-old chronic alcoholic patient is scheduled for an emergency laparotomy. The preoperative peripheral blood smear is shown below. Exposure to which of the following anaesthetic agents is most likely to precipitate subacute combined degeneration (SCD) of the spinal cord in this patient? (Q885147)

A. Sevoflurane

B. Nitrous Oxide

C. Propofol

D. Ketamine



Correct Answer: B. Nitrous Oxide

Explanation: ■ The peripheral smear in question shows hypersegmented neutrophils (a neutrophil with >5-6 lobes) and macro-ovalocytes. These are hallmark findings of Megaloblastic Anaemia, which is most commonly caused by a deficiency in Vitamin B12 or Folate. Mechanism of the Drug Interaction: ■ The Culprit: Nitrous Oxide (N2O) is unique among anaesthetics for its interaction with Vitamin B12. ■ The Action: It irreversibly oxidises the cobalt atom of Vitamin B12 from the Co+ state to the Co3+ state. ■ The Enzyme: This inactivation specifically inhibits the enzyme Methionine Synthase . ■ The Result: Methionine synthase is essential for myelin sheath maintenance. In a patient with already low B12 stores (like the chronic alcoholic or the patient in your smear), N2O can trigger rapid neurological deterioration, known as Subacute Combined Degeneration (SCD) . Target enzyme Methionine synthase Chemical action Oxidation of cobalt in vit b12 Hematology Megaloblastic anaemia (macro ovalocytes, Hypersegmented neutrophils) Neurology Subacute combined degeneration of the spinal cord (loss of vibration and proprioception) Risk groups Vegetarians, Chronic alcoholics, Pernicious anemia patients. Sevoflurane (Option A): A halogenated ether that does not significantly affect B12 metabolism or cause myeloneuropathy. ■ Propofol (Option C): An intravenous sedative-hypnotic with no known interaction with the methionine synthase pathway. ■ Ketamine (Option D): An NMDA receptor antagonist; while it has dissociative properties, it does not induce B12 deficiency or megaloblastic changes.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 299-301.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: A 28-year-old female patient, who is 24 weeks pregnant, is scheduled for an emergency appendectomy under general anaesthesia. Which of the following statements correctly describes the change in her anaesthetic requirement compared to a non-pregnant state? (Q885146)

A. MAC increases due to increased cardiac output.

B. MAC decreases due to increased levels of progesterone and endogenous opioids.

C. MAC remains unchanged as pregnancy does not affect the blood-brain barrier.

D. MAC increases due to the higher metabolic rate of the fetus.

Correct Answer: B. MAC decreases due to increased levels of progesterone and endogenous opioids.

Explanation: During pregnancy, the Minimum Alveolar Concentration (MAC) of inhalational anaesthetics decreases by approximately 30-40% starting from the first trimester. Mechanism of Decrease: Elevated levels of progesterone have a sedative and anaesthetic-potentiating effect. Endogenous Opioids: Increased levels of beta-endorphins during pregnancy contribute to a naturally higher pain threshold, reducing the external anaesthetic requirement. Physiological Changes: While cardiac output increases (which can actually slow the speed of induction), the net effect on the brain is a requirement for a lower concentration of gas to achieve the same depth of anaesthesia. Clinical Implication: Anesthesiologists must reduce the vaporiser settings for pregnant patients to avoid accidental overdose and maternal hypotension. Various factors affecting the dose of anaesthetic agent requirement : Factors that decrease MAC require less gas Factors that increase MAC require more gas Ageing decreases 6% per decade Infancy/young age: MAC. Highest at 6months Pregnancy, Hypercalcemia Chronic alcoholism: Due to enzyme induction Acute alcohol intoxication Hyponatremia Hypernatremia Hypothermia Hyperthermia Drugs: Opioids, Benzodiazepines, Lithium Drugs: Cocaine, Amphetamine, Ephedrine MAC increases due to increased cardiac output (Option A): Although cardiac output increases in pregnancy, MAC is determined by CNS sensitivity, not cardiac output. MAC actually decreases. MAC remains unchanged (Option C): Pregnancy significantly reduces MAC. MAC increases due to higher fetal metabolic rate (Option D): Fetal metabolism does not determine maternal anaesthetic requirement.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 297.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: A 75-year-old male is scheduled for a transurethral resection of the prostate (TURP). The anesthesiologist notes that the patient's Minimum Alveolar Concentration (MAC) requirements are likely lower than those of a younger patient. By approximately what percentage does the MAC of inhalational anaesthetics

decrease per decade of life? (Q885142)

A. 2%

B. 4%

C. 6%

D. 10%

Correct Answer: C. 6%

Explanation: MAC requirements for both local and general anaesthetics are significantly reduced in elderly patients . Specifically, MAC decreases by approximately 6% per decade. Mechanism: This is attributed to altered sensitivity in ion channels and receptors, such as nicotinic, acetylcholine, glutamate, and GABA receptors in the ageing brain. Clinical Significance: Recovery in geriatric patients can be prolonged due to an increased volume of distribution (higher body fat) and decreased pulmonary gas exchange The least potent (highest concentration required) to the most potent (lowest concentration required): Nitrous Oxide (N2O): 104% (Highest MAC; Least Potent) Xenon: 63% - 71% Desflurane: 6.0% Sevoflurane: 2.0% Isoflurane: 1.15% Halothane: 0.75% (Lowest MAC; Most Potent)

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Pages 295, 296.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: Which of the following inhalational anaesthetic agents has the lowest blood-gas partition coefficient, thereby ensuring the fastest induction and recovery? (Q885124)

A. Halothane

B. Isoflurane

C. Desflurane

D. Sevoflurane

Correct Answer: C. Desflurane

Explanation: Desflurane provides the most rapid induction and recovery among these agents. The solubility of an inhalational anaesthetic is measured by its Blood-Gas Partition Coefficient . ■ Low solubility: A drug with low solubility does not get dissolved or "held" in the blood. Consequently, the partial pressure in the alveoli rises quickly, leading to a faster rise in the partial pressure in the brain. This results in rapid induction and rapid

recovery . ■ High solubility: A drug with high solubility is "soaked up" by the blood, acting like a reservoir. It takes much longer for the blood to become saturated enough to pass the gas to the brain, leading to slow induction and slow recovery . Desflurane: Blood-Gas coefficient approx 0.42. It is the least soluble agent currently in clinical use, providing the quickest control over the depth of anesthesia Clinical Correlation: While Desflurane has the fastest kinetics, it is pungent and can cause breath-holding or laryngospasm, so it is not used for "mask induction" (inhaling the gas to go to sleep). Sevoflurane is the drug of choice for mask induction despite being slightly more soluble because it is non-irritating to the airways. Lowest Blood-Gas Coefficient: Xenon >Desflurane (Fastest recovery). ■ Highest Blood-Gas Coefficient: Ether / Halothane (Slowest recovery) Agent Blood gas partition value Features Desflurane (0.42) Lowest Fastest induction/Recovery, pungent, not used in children N20 (0.47) Second gas effect, Diffusion hypoxia, Low potency Sevoflurane (0.65) Agent of choice for pediatric mask induction, as it is non-pungent Isoflurane (1.40) Good for neurosurgery, maintains cerebral blood flow Halothane (2.30) Most potent, Risk of halothane hepatitis and arrhythmias Halothane (Option A): Blood-Gas coefficient approx 2.3. Highly soluble, leading to the slowest induction and recovery among these options. ■ Isoflurane (Option B): Blood-Gas coefficient approx 1.4.Moderately soluble. ■ Sevoflurane (Option D): Blood-Gas coefficient approx 0.65. Highly popular for pediatric induction due to its low solubility and non-pungent odour.

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 282.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: During a surgical procedure, the anesthesiologist is monitoring the patient and observes signs of complete respiratory depression, total loss of reflexes, and dilated, non-reactive pupils. According to Guedel's stages of anesthesia, which stage is the patient most likely in, and what are the implications for airway management? (Q846815)

A. Stage I (Analgesia)

B. Stage II (Excitement)

C. Stage III (Surgical Anesthesia)

D. Stage IV (Overdose)

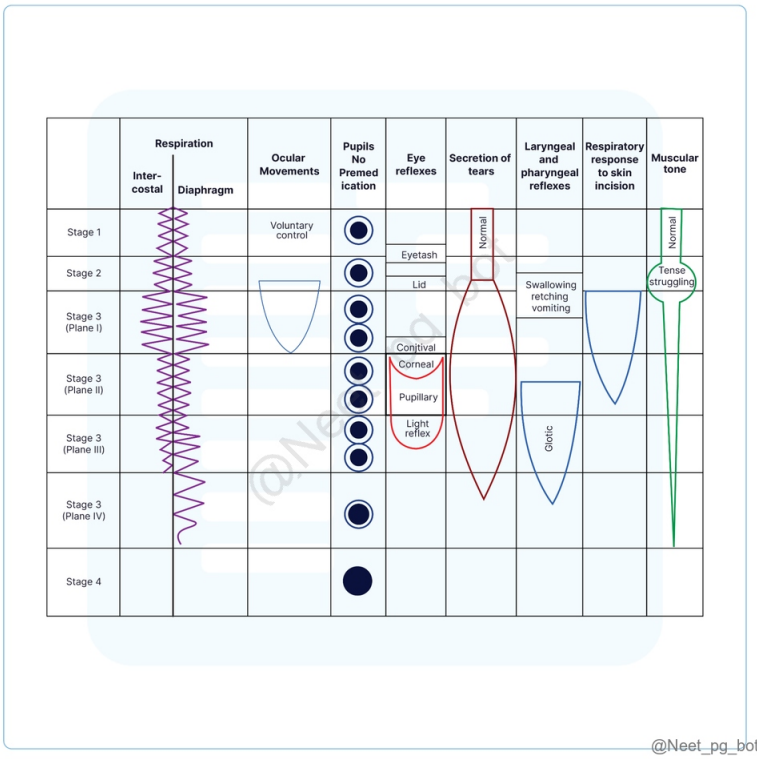
Correct Answer: D. Stage IV (Overdose)

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Stage IV of Guedel's staging represents overdose/ medullary paralysis and presents with: Respiratory arrest Cardiovascular collapse Dilated, non-reactive pupils Stage II (Excitement) (Option B): Patients may exhibit erratic breathing and are often agitated. Close monitoring and potential airway interventions may be needed to

prevent airway obstruction Stage III (Surgical Anesthesia) (Option C): This is the stage where the patient is deeply unconscious, and controlled ventilation is essential. While airway management is critical, reflexes may still be present. Stage IV (Overdose): Indicates severe respiratory depression and potential cardiovascular instability. Immediate airway intervention and resuscitation are required, as the patient may not be breathing adequately or may be unresponsive.



References:

https://www.ncbi.nlm.nih.gov/books/NBK557596/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: Which among the following statements explains the concept of Mayer Overton's rule? (Q846814)

A. The lipid solubility of the agent is directly proportional to the potency of the agent

B. The rule asserts that all anesthetics act through the same mechanism of action regardless of their structure.

C. The rule indicates that anesthetics with lower boiling points are more potent.

D. None of the above

Correct Answer: A. The lipid solubility of the agent is directly proportional to the potency of the agent

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Meyer Overton rule: Lipid solubility of the agent is directly proportional to the potency of the agent Potency is measured by MAC and is inversely proportional to MAC value.

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1301419/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 35-year-old patient is recovering from anesthesia after a dental procedure that involved the use of nitrous oxide (N 2 O). As the anesthesiologist prepares to discontinue N 2 O, they consider the potential risks associated with it. To prevent this complication in the patient, which of the following actions should be taken? (Q846813)

A. Administer room air immediately after stopping N 2 O.

B. Administer 100% oxygen for 5 to 10 minutes after stopping N 2 O.

C. Continue N 2 O for an additional 10 minutes.

D. Reduce the concentration of N 2 O gradually over the next 15 minutes.

Correct Answer: B. Administer 100% oxygen for 5 to 10 minutes after stopping N 2 O.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The possible risk associated with N 2 O stoppage is diffusion hypoxia. Diffusion hypoxia occurs during recovery from anesthesia due to the washout of high concentrations of N 2 O, leading to lower O 2 and CO 2 levels in the alveoli, which is called the fink effect. This can cause hypoxemia (low blood oxygen) and hypocarbia (low carbon dioxide), which may suppress respiratory drive and worsen hypoxemia. To prevent diffusion hypoxia, it is recommended to administer 100% O2 for 5 to 10 minutes after stopping nitrous oxide. Administering room air immediately after stopping N 2 O (Option A) can lead to further dilution of alveolar O 2 and CO 2 , increasing the risk of hypoxemia and respiratory depression. Continuing N 2 O for an additional 10 minutes (Option C) would not resolve the risk of diffusion hypoxia and would prolong the potential adverse effects. Reducing the concentration of N 2 O gradually over the next 15 minutes (Option D) does not effectively prevent diffusion hypoxia, and the immediate administration of 100% oxygen is necessary to counteract its effects.

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.288 Barash Clinical Anaesthesia, 9th edition, Pg. 1402

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: Which of the following statements best describes the second gas effect of Nitrous oxide when administered along with Isoflurane? (Q846812)

A. Decreased concentration of Isoflurane in the alveoli

B. Increased concentration of Isoflurane in the alveoli

C. Increase concentration of Nitrous oxide in alveoli

D. No effect on the concentration of gases in the alveoli

Correct Answer: B. Increased concentration of Isoflurane in the alveoli

Explanation: As N■O partitions into the blood, it leaves behind a higher relative concentration of the potent anesthetic in the alveoli. This results in an increased concentration of the anesthetic gas, although the clinical impact on speeding induction is minimal. The second gas effect occurs when a second lesser soluble Inhalational anaesthetic is given alongside nitrous oxide (N■O), leading to a concentration effect. Increase concentration of Nitrous oxide in alveoli (Option C): As N■O is rapidly absorbed into the blood, it decreases its own concentration in the alveoli, which allows for a relatively higher concentration of the second anaesthetic gas (Isoflurane in this case). Decreased concentration of Isoflurane in the alveoli (Option A): The second gas effect actually leads to an increased concentration of Isoflurane in the alveoli. No effect on the concentration of gases in the alveoli (Option D): The second gas effect directly influences the concentration of the anaesthetic gas in the alveoli by increasing the concentration of Isoflurane in the alveoli.

References:

Miller Anaesthesia. 9th edition. Pg. 518

Barash Clinical Anaesthesia. 9th edition. Pg. 1394, 1395

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: A 30-year-old male with a family history of severe reactions to anesthesia is scheduled for surgery under general anesthesia. The anesthetic plan includes nitrous

oxide (N■O) along with other agents. Given his history, which of the following statements about nitrous oxide is FALSE ? (Q846811)

A. Nitrous oxide is a colorless and odorless gas.

B. It can trigger malignant hyperthermia.

C. It is contraindicated in patients with Pneumothorax.

D. It causes MI in patients with CAD.

Correct Answer: B. It can trigger malignant hyperthermia.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Nitrous oxide does not trigger malignant hyperthermia, which is a severe reaction typically associated with certain volatile anesthetics and succinylcholine. Nitrous oxide (N■O) is a colorless, odorless, nonflammable gas, stored as a liquid under pressure. (Option A ruled out) Nitrous oxide should be avoided in patients with air-containing cavities because it can cause rapid expansion of these air cavities (e.g., pneumothorax, air embolism, intestinal obstruction, pneumocephalus, intraocular air, tympanic membrane grafting). (Option C ruled out) Nitrous oxide causes myocardial depression in patients with coronary artery disease or hypovolemia. (Option D ruled out)

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.298- 303

Miller’s Textbook of Anaesthesiology, 9th Edition, Pg. 533

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: Which of the following statements about Minimal Alveolar Concentration (MAC) is true? (Q846784)

A. MAC is the lowest for nitrous oxide

B. MAC is used to compare the potency of inhaled anesthetics

C. MAC is a measure of the blood concentration of anesthetic agents

D. MAC does not vary with age

Correct Answer: B. MAC is used to compare the potency of inhaled anesthetics

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Minimal Alveolar Concentration (MAC) is a standard measure used in anesthesia to assess the potency of inhaled anesthetics. It represents the concentration of anesthetic in the alveoli needed to prevent movement in 50% of patients exposed to a surgical/painful stimulus. A lower MAC value indicates a more potent anesthetic, meaning less is needed to achieve the desired anesthetic effect. Methoxyflurane has the least MAC & Nitrous oxide has the highest MAC MAC is the lowest for nitrous oxide (Option A): MAC is the highest for nitrous oxide MAC is a measure of the blood concentration of anesthetic agents (Option C) : Mean Alveolar Concentration (MAC) is not actually a measure of the blood concentration of anesthetic agents; rather, it refers specifically to the concentration of inhaled anesthetics in the alveoli of the lungs. MAC does not vary with age (Option D): MAC value is inversely proportional to age.

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.294-296

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: A 55-year-old female is scheduled for elective surgery. The anesthesiologist is reviewing the anesthesia plan, which includes the use of sevoflurane. Which of the following statements regarding sevoflurane is TRUE ? (Q846809)

A. It significantly increases heart rate during anesthesia.

B. It can be given to the patient with raised intracranial pressure.

C. It is known to cause significant renal toxicity.

D. It doesn’t reverse bronchospasm.

Correct Answer: B. It can be given to the patient with raised intracranial pressure.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Sevoflurane and isoflurane, when compared to other inhalational agents will cause less increase in cerebral blood flow and intracranial pressure. Sevoflurane should be avoided in patients with intracranial hypertension as it can increase cerebral blood flow and intracranial pressure. Sevoflurane Properties Sevoflurane is a fluorinated ether with low blood solubility (λb/g 0.65), allowing for rapid induction and emergence. Its non-pungency makes it suitable for inhalation induction, especially in pediatric patients. It is used with conventional vaporizers. Uses Ideal for smooth and rapid inhalation induction, particularly in daycare procedures (4-8% concentration with nitrous oxide and oxygen). It is commonly used for both pediatric and adult anesthesia. C/I Should be avoided in cases of severe hypovolemia, susceptibility to malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Mild myocardial depression with a slight reduction in systemic

vascular resistance and blood pressure. It causes a minimal heart rate increase and may prolong the QT interval. (Option A ruled out) Hepatic Decreases portal vein flow but increases hepatic artery flow, maintaining overall hepatic perfusion. Renal Slightly decreases renal blood flow but has no known association with significant renal toxicity. (Option C ruled out) Compound A , a degradation product of sevoflurane, is nephrotoxic in animals but has no known adverse effects on humans. Neuromuscular Provides adequate muscle relaxation for intubation but is often combined with other agents or muscle relaxants. Cerebral Slight increases in cerebral blood flow (CBF) and intracranial pressure. High concentrations may impair CBF autoregulation. Seizures have not been reported. Respiratory Depresses respiration and helps reverse bronchospasm. Thus, agent of choice in asthmatics. (Option D ruled out) Volatile Anaesthetics: Drug Speed (Onset/Offset) Key Property Main Clinical Concern Isoflurane Intermediate Gold standard for CAD; cardioprotective. Pungent; irritates airways. Sevoflurane Fast Non-pungent (sweet); best for mask induction. Risk of Compound A (nephrotoxicity). Desflurane Fastest Rapid emergence; ultra-low solubility. Very pungent; needs heated vaporizer . Halothane Slow Potent bronchodilator; cheap. Hepatitis and myocardial depression. Enflurane Intermediate Stable hemodynamics. Can trigger seizures (epileptogenic). Methoxyflurane Very Slow Potent analgesic at low doses. Severe nephrotoxicity (F- ions). Nitrous Oxide Rapid Inorganic gas; strong NMDA antagonism. Diffusion hypoxia ; bone marrow suppression.

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg. 312-315

↑ *Back to this question in Part A*

@Neet_pg_bot

Q13: A 60-year-old man with hypertension and coronary artery disease is undergoing general anesthesia for abdominal surgery. The anesthesiologist chooses to use isoflurane for the maintenance of anesthesia. Which of the following is a correct statement about isoflurane's effects and properties? (Q846808)

A. It causes significant myocardial depression

B. It increases systemic vascular resistance

C. It is highly metabolized in the liver

D. It provides cardio-protection through ischemic preconditioning

Correct Answer: D. It provides cardio-protection through ischemic preconditioning

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Isoflurane is a volatile anesthetic used for the induction and maintenance of general anesthesia. It provides cardio-protection through ischemic preconditioning , which can help reduce ischemia-reperfusion injury to the heart. This makes it a good choice for patients with coronary artery disease. Category Details Chemical Properties Halogenated ether compound Non-flammable Strong, pungent odor Cardiovascular Effects Minimal

impact on left ventricular function Dose-dependent decrease in systemic vascular resistance Mild increase in heart rate Coronary vasodilation - Coronary steal syndrome - (HIND Drugs - Hydralazine, Isoflurane, Nitroprusside, Dipyradiamole) Cardioprotection through ischemic preconditioning Respiratory Effects Decrease in tidal volume Minimal increase in respiratory rate Overall decrease in minute ventilation Increased PaCO2 CNS Effects Increased cerebral blood flow at >1 MAC Increased intracranial pressure at >1 MAC Decreased cerebral metabolic rate Uses Induction of general anesthesia (less commonly used due to odor, irritation, and laryngospasm) Maintenance of general anesthesia - agent of choice in cardiothoracic and neurosurgery. Side Effects Dose-dependent hypotension Potential trigger for malignant hyperthermia Metabolism Minimal hepatic metabolism (0.2%) Metabolized to trifluoroacetic acid No significant renal or hepatic toxicity at clinical doses Volatile Anesthetics: Drug Speed (Onset/Offset) Key Property Main Clinical Concern Isoflurane Intermediate Gold standard for CAD; cardioprotective. Pungent; irritates airways. Sevoflurane Fast Non-pungent (sweet); best for mask induction. Risk of Compound A (nephrotoxicity). Desflurane Fastest Rapid emergence; ultra-low solubility. Very pungent; needs heated vaporizer . Halothane Slow Potent bronchodilator; cheap. Hepatitis and myocardial depression. Enflurane Intermediate Stable hemodynamics. Can trigger seizures (epileptogenic). Methoxyflurane Very Slow Potent analgesic at low doses. Severe nephrotoxicity (F- ions). Nitrous Oxide Rapid Inorganic gas; strong NMDA antagonism. Diffusion hypoxia ; bone marrow suppression. It causes significant myocardial depression (Option A): Isoflurane has minimal impact on left ventricular function. It increases systemic vascular resistance (Option B): Isoflurane has a dose-dependent decrease in systemic vascular resistance. It is highly metabolized in the liver (Option C): Isoflurane undergoes minimal hepatic metabolism (only about 0.2%).

References:

Miller’s Textbook of Anaesthesiology, 9th Edition, Pg. 511, 527, 536

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 45-year-old woman with a history of moderate alcohol use undergoes general anesthesia for an emergency appendectomy. The anesthesiologist uses halothane for induction and maintenance. Two weeks after the surgery, the patient presents with fatigue, nausea, jaundice, and tender hepatomegaly. Laboratory tests reveal the following: AST (Aspartate Aminotransferase): 850 U/L (normal range: 5-40 U/L) ALT (Alanine Aminotransferase): 920 U/L (normal range: 7-56 U/L) Total Bilirubin: 4.8 mg/dL (normal range: 0.1-1.2 mg/dL) Direct Bilirubin: 3.2 mg/dL (normal range: 0.0-0.3 mg/dL) Which of the following best explains the patient's condition? (Q846807)

A. Direct hepatotoxicity of halothane

B. Immune-mediated hepatotoxicity of halothane

C. Alcohol-induced liver failure precipitating due to surgical stress

D. Postoperative sepsis

Correct Answer: B. Immune-mediated hepatotoxicity of halothane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient's presentation is consistent with halothane-induced hepatitis , also known as Type-2 halothane hepatotoxicity. This is an immune-mediated reaction that typically occurs 1-2 weeks after exposure to halothane, especially in patients with previous exposure or risk factors such as moderate alcohol use. Pathophysiology : Halothane is metabolized in the liver by CYP2E1 , forming: Trifluoroacetylated protein adducts (TFA-adducts) These act as neoantigens , triggering: Autoimmune hepatitis-like reaction Massive hepatocellular necrosis Management Stop halothane forever (contraindicated lifelong) Supportive: IV fluids Monitoring Avoid hepatotoxic drugs Treat acute liver failure if present: N-acetylcysteine (adjunct) Lactulose (encephalopathy) Liver transplant in severe cases

References:

Miller’s Textbook of Anaesthesiology, 9th Edition, Page 528, 529

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A 68-year-old patient with a history of liver disease is scheduled for a prolonged liver transplant surgery. Which of the following inhalational anesthetics would be most appropriate to use in this case? (Q846805)

A. Halothane

B. Desflurane

C. Methoxyflurane

D. Isoflurane

Correct Answer: B. Desflurane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Desflurane is the least metabolized inhalational agent in the liver , with <0.01% metabolized in the liver and 99.9% in the lungs. This minimal hepatic metabolism makes it safer for patients with liver disease. Halothane (Option A): Maximum metabolism in the liver (20%) Methoxyflurane (Option C) and Iso flurane (Option D): Both these have some metabolism in the liver.

References:

Miller's Textbook of Anaesthesiology, 9th Edition, Pg. 522, 526, 528, 530, 536

↑ *Back to this question in Part A*

@Neet_pg_bot

Q16: A 45-year-old woman is undergoing elective cholecystectomy under general anesthesia. The anesthesiologist is using halothane as the primary inhalational anesthetic. During the procedure, the surgeon encounters unexpected bleeding and requests local infiltration with adrenaline (epinephrine) for hemostasis. What is the most appropriate response of the anesthesiologist to the surgeon's request for adrenaline infiltration? (Q846789)

A. Agree to the use of adrenaline without any concerns

B. Refuse the use of adrenaline completely due to high-risk

C. Allow the use of adrenaline, but advise using a dilute solution and limiting the total dose

D. Suggest switching to a different inhalational anesthetic before using adrenaline

Correct Answer: C. Allow the use of adrenaline, but advise using a dilute solution and limiting the total dose

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: This scenario highlights the important interaction between halothane and adrenaline (epinephrine). The key points to consider are: Halothane sensitizes the myocardium to the arrhythmogenic effects of catecholamines, including adrenaline. This interaction can potentially lead to severe cardiac arrhythmias , particularly ventricular arrhythmias. However, the risk is dose-dependent and can be mitigated by using appropriate precautions. Completely avoiding adrenaline may compromise surgical hemostasis, which is also important for patient safety.

References:

Barash Clinical Anaesthesiology, 9th Edition, Pg. 1425, 1426 American Society of Anaesthesiology

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: All the following statements about the systemic effects of inhalational agents are correct except: (Q846788)

A. Isoflurane can be safely used in patients with head injury

B. Halothane is the anesthetic agent of choice in patients with ischaemic heart disease

C. Almost all inhalational agents cause bronchodilation

D. Sevoflurane is the anesthetic of choice in bronchial asthma

Correct Answer: B. Halothane is the anesthetic agent of choice in patients with ischaemic heart disease

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Halothane is contraindicated in patients with ischaemic heart disease. Halothane decreases cardiac output, BP, and PR Halothane causes hypotension by direct myocardial depression Halothane causes bradycardia by blunting carotid body receptor response Halothane is a common inhalational agent used in the respiratory system (due to maximum bronchodilation) while Isoflurane is the common inhalational agent used in CNS and CVS Isoflurane can be safely used in patients with head injury (Option A): True, as it decreases ICP. Sevoflurane is a better choice due to its low blood-gas coefficient. Almost all inhalational agents cause bronchodilation (Option C): True, almost all cause bronchodilation. Sevoflurane is the anesthetic of choice in bronchial asthma (Option D): True. Sevoflurane is the best choice for bronchial asthma, followed by Halothane

References:

Morgan's and Mikhail's Anesthesiology, 7th Edition, Page 299, 300

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: Which of the following anesthetics is ordered from lowest to highest in terms of Minimum Alveolar Concentration (MAC) values (indicating potency)? (Q846787)

A. Desflurane, Isoflurane, Halothane

B. Halothane, Isoflurane, Desflurane

C. Sevoflurane, Nitrous Oxide, Desflurane

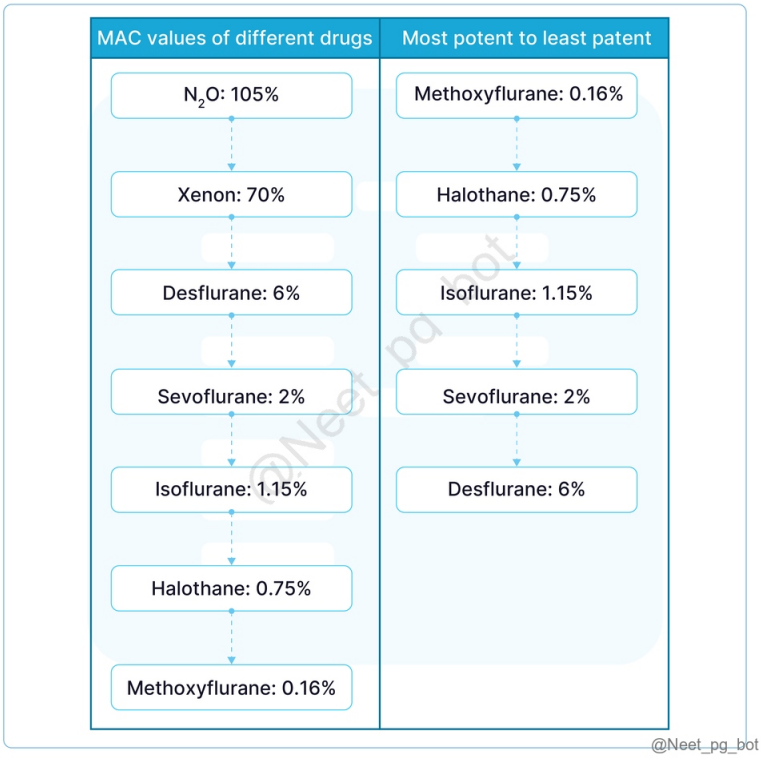
D. Nitrous Oxide, Sevoflurane, Halothane

Correct Answer: B. Halothane, Isoflurane, Desflurane

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Mnemonic for most potent to least potent: MaHI S traight D rive - M ethoxyflurane, H alothane, I soflurane, S evoflurane, D esflurane.



References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.294-297

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: A 45-year-old male is undergoing general anesthesia for a routine surgery. The anesthesiologist uses two different inhalational agents: one with a high blood-gas partition coefficient and another with a low blood-gas partition coefficient. Which of the following is TRUE regarding the blood-gas partition coefficient and its clinical implications? (Q846786)

A. An inhalational agent with a high blood-gas partition coefficient will achieve anesthesia more quickly than one with a low coefficient.

B. An inhalational agent with a low blood-gas partition coefficient will require a higher concentration in the alveoli to maintain anesthesia.

C. An inhalational agent with a high blood-gas partition coefficient will have a slower onset and offset of action compared to one with a low coefficient.

D. The blood-gas partition coefficient has no effect on the pharmacokinetics of inhalational anesthetics.

Correct Answer: C. An inhalational agent with a high blood-gas partition coefficient will have a slower onset and offset of action compared to one with a low coefficient.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Anesthetic agents having a high blood-gas partition coefficient (B/G) will have a high solubility in blood leading to a low alveolar concentration, slow induction, and slow recovery. Blood gas coefficient: Indicates the speed of onset and recovery of inhalational agent Indicates solubility of the inhalational agent in the blood Inversely proportional to the speed of onset High B/G has a slow onset (Option A) Low B/G has a fast onset The inhalational agent enters the lungs → blood vessels → brain An inhalational agent with a high blood-gas partition coefficient will achieve anesthesia more quickly than one with a low coefficient (Optin A): High B/G has a slow onset An inhalational agent with a low blood-gas partition coefficient will require a higher concentration in the alveoli to maintain anesthesia (Option B): This is misleading. While low solubility agents reach higher concentrations in the alveoli more quickly, they do not necessarily require higher concentrations to maintain anesthesia. The blood-gas partition coefficient has no effect on the pharmacokinetics of inhalational anesthetics (Option D): This is false. The blood-gas partition coefficient is critical in determining how quickly an anesthetic will act and how it will be eliminated from the body.

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition. Pg 282-283

↑ *Back to this question in Part A*

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Q20: During a routine surgical procedure requiring general anesthesia, an anesthesiologist is determining the appropriate dosage of sevoflurane for a 45-year-old patient. Several factors could influence the Mean Alveolar Concentration (MAC) needed to achieve adequate anesthesia. The anesthesiologist considers the following factors: Patient Age: 45 years. Body Temperature: 37°C. Use of Opioids: The patient has received a dose of fentanyl prior to induction. Which factor is likely to decrease the MAC value for sevoflurane in this patient? (Q846785)

A. Height

B. Gender

C. Use of opioids

D. Thyroid status

Correct Answer: C. Use of opioids

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Opioids decrease MAC value. Opioids like fentanyl have a synergistic effect with anesthetics, meaning they can enhance the anesthetic effect. This allows for a lower MAC to achieve the same anesthetic depth, effectively decreasing the required concentration of sevoflurane. Factors increasing MAC Factors decreasing MAC Factors not affecting MAC Young patient (maximum at 6 months) Chronic alcoholic Acute amphetamine/cocaine user Hypernatremia Hyperthermia Red hair Elderly person Acute alcoholic Chronic amphetamine user Hyponatremia Hypothermia Hypoxia Hypercarbia Anemia (low hemoglobin) Pregnancy Local anaesthetics I.V. induction Gender (Option B) Height (Option A) Thyroid status (Option D)

References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition. Pg.297

↑ *Back to this question in Part A*

@Neet_pg_bot

• [15_Inhalational Anaesthetic Agents] 025 Previous Year Questions

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[15_Inhalational Anaesthetic Agents] 025 Previous Year Questions — Quick Jump

Q1 (p. 635) *Q2 (p. 636)* *Q3 (p. 637)* *Q4 (p. 638)*

Q1: Which of the following inhalation agents has a blood-gas partition coefficient similar to nitrous oxide? (Q860372)

A. Isoflurane

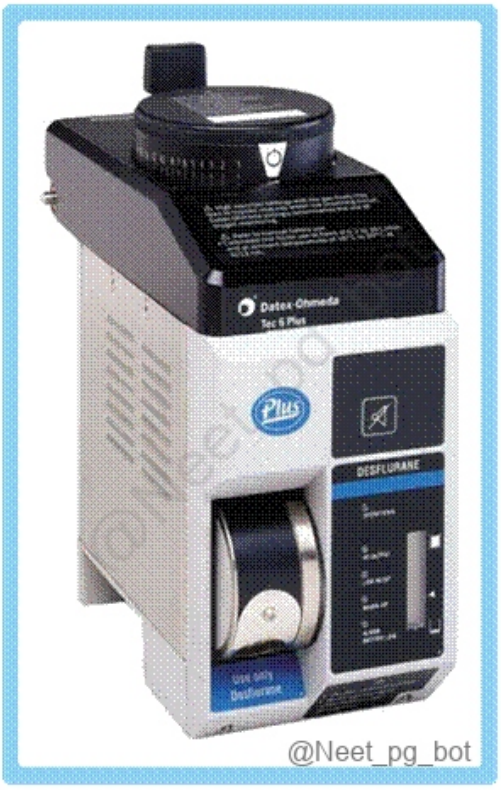
B. Desflurane

C. Sevoflurane

D. Halothane

Correct Answer: B. Desflurane

Explanation: Desflurane Properties Desflurane is a fluorinated ether with high vapor pressure (681 mm Hg at 20°C) and very low blood solubility (λb/g 0.42), allowing rapid induction and emergence. It requires a special vaporizer (tec 6) for precise anesthetic control. {{caption_text}} Tec 6 Blood gas coefficient indicates speed of onset and recovery, solubility of inhalational agent in the blood. It is inversely proportional to speed of onset High B/G has a slow onset Low B/G has a fast onset Desflurane has similar blood-gas partition co-efficient similar to Nitrous oxide. Uses Desflurane is ideal for rapid induction and emergence due to its low blood solubility, but it is not suitable for inhalation induction due to its pungency and airway irritation. C/I It should be avoided in patients with severe hypovolemia, malignant hyperthermia, and intracranial hypertension. Systemic Effects Cardiovascular Desflurane decreases systemic vascular resistance and arterial blood pressure. It causes moderate increases in heart rate, central venous pressure, and pulmonary artery pressure, particularly during rapid concentration increases, which can be managed with fentanyl, esmolol, or clonidine. Respiratory Causes decreased tidal volume and increased respiratory rate. It is pungent and can cause airway irritation, making it unsuitable for inhalation induction. Hepatic Minimal metabolism and risk of anesthetic-induced hepatitis, with maintained hepatic oxygen delivery. Renal Minimal nephrotoxicity, but decreases in urine output and glomerular filtration occur with reduced cardiac output. Neuromuscular Desflurane causes a dose-dependent decrease in neuromuscular response, enhancing the effects of nondepolarizing neuromuscular blockers. Cerebral Increases cerebral blood flow (CBF), intracranial pressure, and cerebral blood volume but decreases cerebral oxygen consumption. CBF can be lowered through hyperventilation. Incorrect Options: Other incorrect options do not have blood gas partition co-efficient similar to nitrous oxide. Isoflurane (Option A) : Most commonly used in CVS and CNS surgeries Cost-effective Sevoflurane (Option C) : Induction agent of choice in children Second fastest-acting inhalational agent Halothane (Option D): Undergoes maximum metabolism in liver (20%) Most hepatotoxic- can cause halothane-induced hepatitis if given repeatedly



References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg.309-312 (PDF)

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: Which among the following is the induction anesthesia of choice in pediatric age group? (Q839908)

A. Sevoflurane

B. Desflurane

C. Halothane

D. Isoflurane

Correct Answer: A. Sevoflurane

Explanation: Correct Option A - Sevoflurane: Sevoflurane is the preferred induction agent in pediatric anesthesia due to its rapid onset, pleasant smell, and minimal airway irritation, making it well-tolerated by children. Incorrect

Options: Option B - Desflurane: Desflurane causes airway irritation and laryngospasm, making it less suitable for pediatric induction. Option C - Halothane: Halothane is less favored as it is the most hepatotoxic anesthetic agent and can also lead to halothane hepatitis, malignant hyperthermia, halothane shivering, and heart diseases. Option D - Isoflurane: Isoflurane is effective but has a strong pungent odor and can cause airway irritation, making it less ideal for pediatric use.

References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q3: A patient was given halothane for a surgical procedure. After a few minutes, the anesthetist noticed that he developed rigidity and hyperthermia. Which of the following ions is the reason for the above symptoms? (Q857782)

A. Sodium

B. Calcium

C. Potassium

D. Magnesium

Correct Answer: B. Calcium

Explanation: The above patient presents with rigidity and hyperthermia after administration of halothane. This is indicative towards the diagnosis of malignant hyperthermia and the ion involved is calcium . It occurs due to prolonged opening of functionally altered ryanodine receptors , leading to uncontrolled release of calcium from sarcoplasmic reticulum causing sustained muscle contraction. Malignant hyperthermia: Feature Description Definition Rare, life-threatening reaction to certain anesthetic medications (inhaled anesthetics, succinylcholine). Inheritance Often autosomal dominant with variable penetrance (meaning not everyone with the gene will develop the condition). Underlying mechanism Mutations in the ryanodine receptor (RYR1) gene cause uncontrolled release of calcium (Ca2+) from the sarcoplasmic reticulum, leading to sustained muscle contraction and heat generation. Signs/Symptoms Severe muscle rigidity, rapid rise in body temperature (hyperthermia), increased heart rate, metabolic acidosis. Treatment Dantrolene (a ryanodine receptor antagonist that reduces calcium release from the sarcoplasmic reticulum and relaxes muscles).

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC1867813/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Which volatile anesthetic is most frequently chosen for maintenance during cardiac surgery? (Q857786)

A. Halothane

B. Isoflurane

C. Sevoflurane

D. Desflurane

Correct Answer: B. Isoflurane

Explanation: Isoflurane remains the most frequently chosen volatile anesthetic for maintenance during cardiac surgery , including during the pre-bypass, bypass, and post-bypass periods. Isoflurane is favored because of its: Myocardial protective effects (ischemic preconditioning) Stable hemodynamic profile Ability to maintain cardiac output by reducing afterload with minimal myocardial depression Proven safety record and low cost While Sevoflurane and Desflurane are also used, Isoflurane continues to be the global standard choice for maintenance anesthesia in cardiac surgery due to its balance of efficacy, myocardial protection, and cost-effectiveness . Halothane (Option A): Obsolete due to significant myocardial depression and arrhythmogenic potential . Sevoflurane (Option C): Provides smooth induction and good stability, but used less frequently than isoflurane for maintenance during cardiac surgery (second most common). Desflurane (Option D): Causes sympathetic stimulation (tachycardia, hypertension), making it less suitable for cardiac patients.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC9771889/#:~:text=The%20most%20frequently%20chosen%20drug,maintenance%20anesthetic%20for%20cardiac%20surgery.%E2%80%9D

↑ *Back to this question in Part A*

@Neet_pg_bot

• [16_Airway Management] 026 Difficult Airway Management And Ventilators

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[16_Airway Management] 026 Difficult Airway Management And Ventilators — Quick Jump

Q1 (p. 639) *Q2 (p. 640)* *Q3 (p. 641)* *Q4 (p. 643)* *Q5 (p. 644)* *Q6 (p. 645)*
Q7 (p. 646) *Q8 (p. 647)* *Q9 (p. 648)* *Q10 (p. 649)* *Q11 (p. 650)* *Q12 (p. 650)*
Q13 (p. 651)

Q1: A male patient presents for an elective total knee replacement. During the preoperative assessment, the anesthesiologist performs a thorough evaluation and finds: Mallampati Score: Class III Thyromental Distance: 6 cm Sterno-mental distance 13 cm with head in maximum extension Neck circumference of 16 inch Which of the following features in a patient would prompt you to anticipate a difficult intubation? (Q846771)

A. Mallampati Score: Class III

B. Thyromental Distance: 6cm

C. Sterno-mental distance 13cm with head in maximum extension

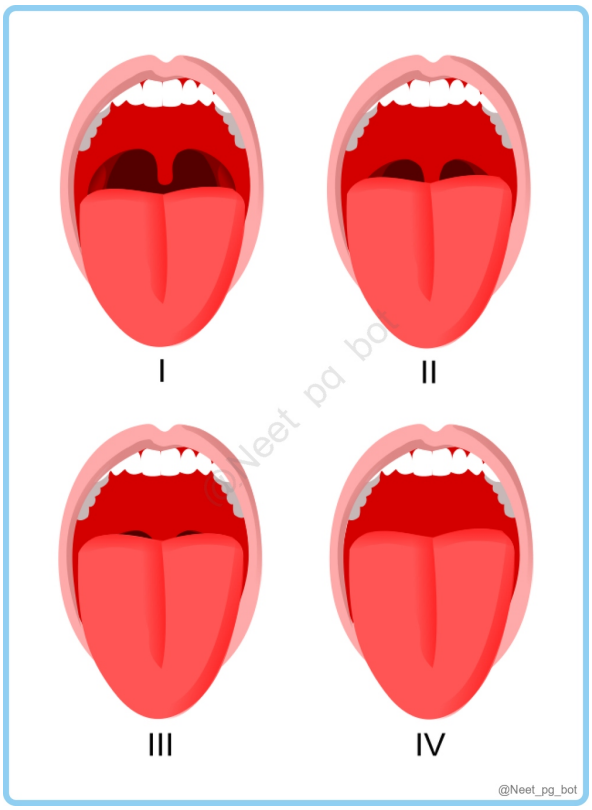
D. Neck circumference of 16 inch

Correct Answer: A. Mallampati Score: Class III

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The Mallampati score III suggests a potentially challenging airway, as visibility is reduced. Mallampati Airway Classification Predictors of difficult airway: Specific tests for assessment Mallampati score (III and IV) Thyromental distance less than 6 cm (Option B) Sterno-mental distance less than 12.5 cm with head in maximum extension (Option C) Increased neck circumference of more than 17 inches in men or more than 16 inches in women (Option D) Cormack and Lehane (laryngoscopic view)- Grade III and IV Upper lip bite test: Inability to protrude the mandible or lower teeth in front of the upper teeth Finger breadth for TMJ mobility- <3 fingers.



References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg no: 628-629

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: A 54-year-old woman is scheduled for an elective hysterectomy. During the preoperative assessment, the anesthesiologist evaluates her airway using Lemons' Law, which suggests that certain anatomical features are key predictors of difficult intubation. Which of the following features in a patient would prompt you to anticipate a difficult intubation? (Q846772)

A. Mallampati Classification: Class II

B. Thyroid to mouth distance - 2 finger breadth

C. BMI of 20

D. Range of neck movement is good

Correct Answer: B. Thyroid to mouth distance - 2 finger breadth

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Lemon’s law helps to assess the risk of a difficult airway Total score: 10 points The higher the lemon score, the higher the risk for airway management The Lemon's Law Evaluation Criteria Points L = Look externally Facial trauma 1 Large incisors 1 Beard or moustache 1 Large tongue 1 E = Evaluate the 3-3-2 rule Incisor distance - -3 finger breadths 1 Hyoid mental distance - 3 finger breadths 1 Thyroid-to-mouth distance - 2 finger breadths 1 M = Mallampati (Mallampati score >3) 1 O = Obstruction (presence of any condition such as epiglottitis, peritonsillar abscess, trauma) 1 N = Neck mobility (limited neck mobility) 1 Total 10 Mallampati Classification: Class II (Option A): A Mallampati score of more than III is a predictor of a difficult airway. BMI of 20 (Option C): A BMI of 20 means the person is not obese, so it's not a risk factor. Range of neck movement is good (Option D): Range of neck movement suggests the absence of limited neck mobility.

References:

https://www.jwatch.org/em200502160000001/2005/02/16/airway-assessment-using-lemon-score-predicts

↑ *Back to this question in Part A*

@Neet_pg_bot

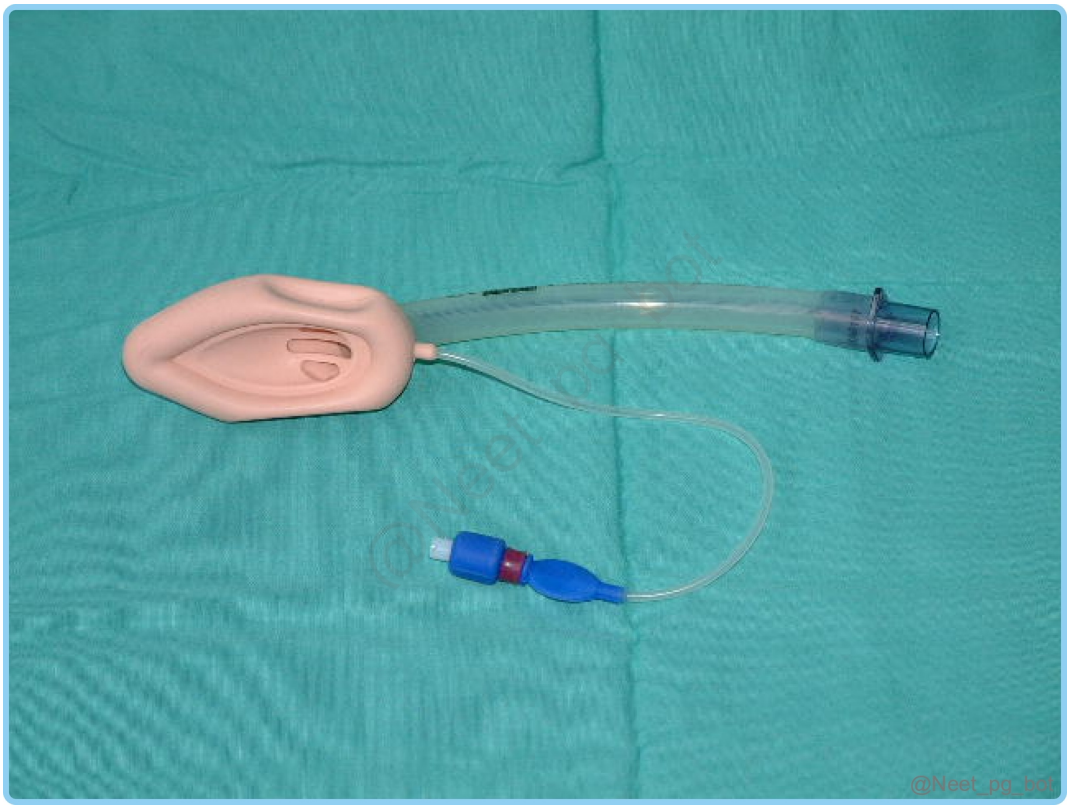
Q3: According to DAS guidelines, how will you manage a patient who is undergoing an elective cholecystectomy, if the below shown device fails to ventilate the patient? (Q846773)

A. Bag and mask ventilation with 2-person technique

B. Continue the surgery with LMA

C. Invasive airway management

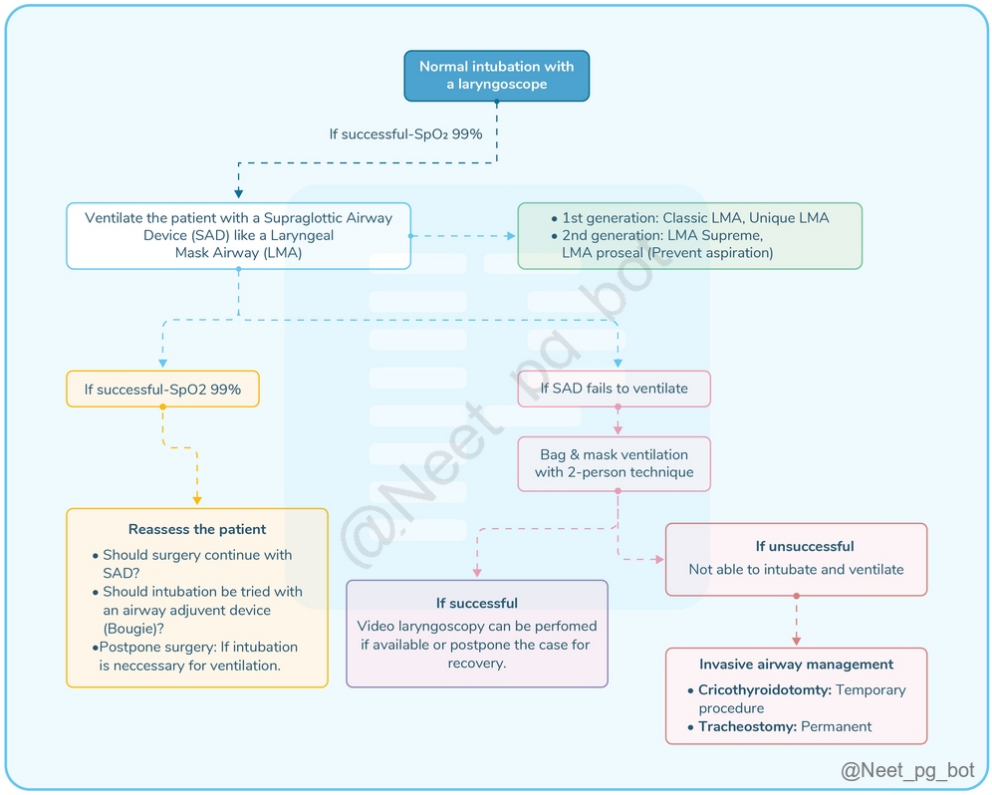
D. None of the above



Correct Answer: A. Bag and mask ventilation with 2-person technique

- *Listen (English)*
- *Listen (Hindi)*

Explanation: The image is a Laryngeal Mask Airway (LMA) - a supraglottic airway device (SAD). Bag and mask ventilation with a 2-person technique is performed if SAD fails to ventilate Continue the surgery with LMA practiced when normal intubation failed with a laryngoscope (Option B) Invasive airway management is performed when the Bag and mask ventilation is unsuccessful (Option C)



References:

Morgan's and Mikhail's Anaesthesiology, 7th Edition, Pg.no: 610-611

↑ *Back to this question in Part A*

@Neet_pg_bot

Q4: Which of the following is NOT an indication for invasive mechanical ventilation? (Q846774)

A. Respiratory arrest

B. Severe hypoxemia unresponsive to oxygen therapy

C. Inability to protect the airway

D. Cardiogenic pulmonary oedema

Correct Answer: D. Cardiogenic pulmonary oedema

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Cardiogenic pulmonary oedema is not typically an indication for invasive mechanical ventilation. Indications of invasive and non-invasive ventilators Invasive Ventilation Non-Invasive Ventilation - Respiratory arrest (Option A) - Severe hypoxemia unresponsive to oxygen therapy (Option B) - Inability to protect the airway (Option C) - Severe acidosis with hypercapnia - Decreased level of consciousness - Hemodynamic instability with respiratory compromise - Failure of non-invasive ventilation - Copious secretions - Mild to moderate COPD exacerbations - Cardiogenic pulmonary edema - Immunocompromised patients with acute respiratory failure - Postoperative respiratory failure - Weaning from invasive ventilation - Mild to moderate hypoxemic respiratory failure - Palliative care in DNI patients

References:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7108446/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q5: A 65-year-old male patient is undergoing general anesthesia for an open cholecystectomy. The anesthesiologist decides to use Continuous Mandatory Ventilation (CMV). Which of the following is NOT a characteristic of CMV? (Q846775)

A. It typically requires deeper sedation than spontaneous breathing modes

B. It's useful for patients with severe respiratory failure

C. It allows for patient-triggered breaths between mandatory breaths

D. It may lead to respiratory muscle atrophy with prolonged use

Correct Answer: C. It allows for patient-triggered breaths between mandatory breaths

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Continuous Mandatory Ventilation (CMV) is a mode of mechanical ventilation where the ventilator delivers a set number of breaths per minute, regardless of the patient's own respiratory efforts, and also controls both rate and tidal volume It does not allow for patient-triggered breaths between the mandatory breaths, which is a key feature that distinguishes it from other modes, such as Assist-Control ventilation.

References:

Principles And Practice of Mechanical Ventilation, Martin Tobin, 3rd Edition, Pg. 51

↑ *Back to this question in Part A*

@Neet_pg_bot

Q6: A 60-year-old patient with acute respiratory distress syndrome (ARDS) is being mechanically ventilated. The physician is considering switching from volume-controlled assist control ventilation (VC-ACV) to pressure-controlled assist control ventilation (PC-ACV). Which of the following statements is true regarding these two modes? (Q846776)

A. PC-ACV always delivers a higher tidal volume than VC-ACV

B. VC-ACV ensures lower peak inspiratory pressure than PC-ACV

C. PC-ACV provides a decelerating flow pattern which may improve gas distribution

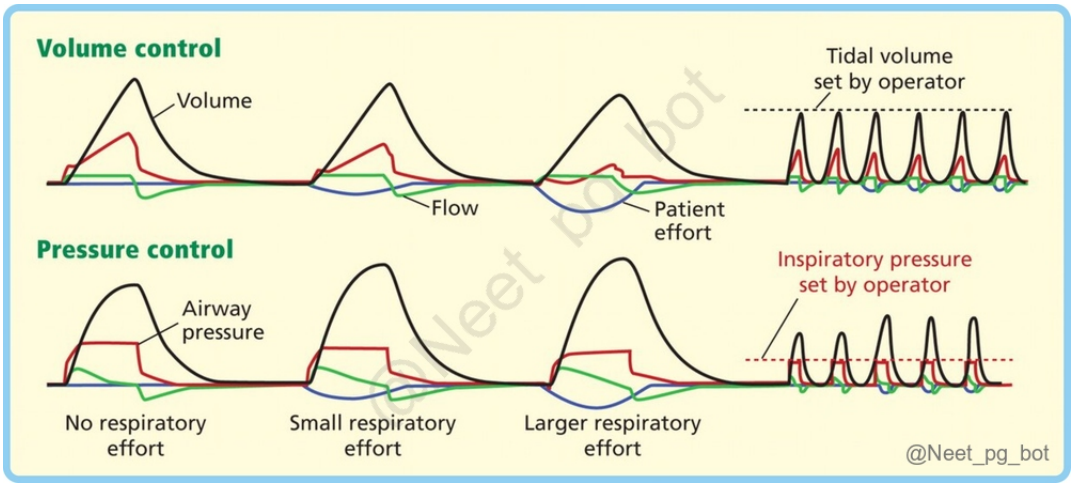
D. VC-ACV is more likely to cause barotrauma than PC-ACV

Correct Answer: C. PC-ACV provides a decelerating flow pattern which may improve gas distribution

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Pressure-controlled assist control ventilation (PC-ACV) typically delivers a decelerating flow pattern , which may improve gas distribution in the lungs , especially in patients with heterogeneous lung disease like ARDS. PC-ACV does not always deliver a higher tidal volume than VC-ACV. The delivered volume in PC-ACV depends on lung mechanics and can vary (Option A) VC-ACV can lead to higher peak inspiratory pressures, especially when lung compliance decreases, whereas PC-ACV limits peak pressure (Option B) The risk of barotrauma is not necessarily higher with VC-ACV. Both modes can cause barotrauma if not properly managed (Option D)



References:

Principles And Practice of Mechanical Ventilation- Martin Tobin 3rd Edition Pg. 159-174

↑ *Back to this question in Part A*

@Neet_pg_bot

Q7: A 55-year-old patient with acute respiratory failure is being weaned from mechanical ventilation using Synchronized Intermittent Mandatory Ventilation (SIMV). Which of the following statements about SIMV is correct? (Q846777)

A. SIMV always delivers a fixed number of breaths per minute

B. SIMV prevents spontaneous breathing between mandatory breaths

C. SIMV is considered the most efficient technique for ventilator weaning

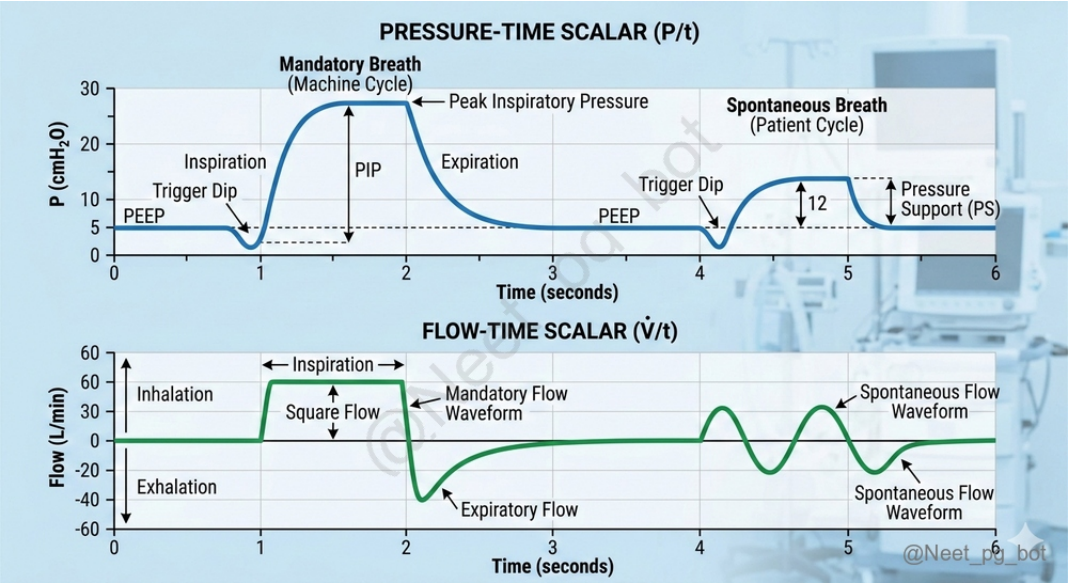
D. SIMV allows for both mandatory and spontaneous breaths

Correct Answer: D. SIMV allows for both mandatory and spontaneous breaths

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Synchronized Intermittent Mandatory Ventilation (SIMV) is a mode of mechanical ventilation that allows for both mandatory (set by the ventilator) and spontaneous (initiated by the patient) breaths . In SIMV, the ventilator cycle is divided into mandatory breath intervals. Mandatory Breaths: The machine delivers a set number of breaths (the rate). It tries to synchronize these with the patient's inspiratory effort. The "Window": If the patient triggers a breath during a specific time window, the machine delivers a synchronized mandatory breath. Spontaneous Breaths: If the patient breathes between those mandatory windows, the machine allows it, but it does not provide the full set tidal volume or pressure. These breaths are usually supported by Pressure Support (PS) to overcome the resistance of the tubing. Pressure Waveforms in SIMV: The pressure-time graph is the best way to visualize how SIMV differentiates between breath types. Mandatory Breaths (Machine-Driven): Shape: You'll see a steep rise in pressure up to the set limit (in Pressure Control) or whatever pressure is required to hit the volume (in Volume Control). Trigger: If the patient triggers it, there will be a small negative "dip" (deflection) at the start of the waveform. Spontaneous Breaths (Patient-Driven): Shape: These look like smaller "humps" on the pressure graph. Pressure Support: If Pressure Support is active, the pressure will rise to the PS level but will be lower and usually shorter in duration than the mandatory breaths. The Baseline (PEEP): The entire graph sits above the Positive End-Expiratory Pressure (PEEP) level, which prevents the lungs from collapsing during exhalation. SIMV is often used as a weaning mode . By gradually decreasing the mandatory rate, the clinician forces the patient to take more spontaneous breaths, effectively "exercising" the diaphragm. However, if the mandatory rate is too low and the patient isn't strong enough, they can become exhausted (the "tachypnea-tiring" cycle). SIMV does not always deliver a fixed number of breaths per minute. While it has set mandatory breaths, patients can take additional spontaneous breaths (Option A) SIMV does not prevent spontaneous breathing between mandatory breaths. In fact, it allows for spontaneous breaths (Option B) SIMV is not considered the most efficient technique for ventilator weaning. Studies have shown it to be less efficient than pressure support ventilation or T-piece trials (Option C)



References:

https://www.ncbi.nlm.nih.gov/books/NBK549846/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q8: A 68-year-old patient with ARDS is being mechanically ventilated. The medical team is considering the application of PEEP to improve the patient's oxygenation. Which of the following statements about PEEP is true regarding its use in this patient? (Q846778)

A. PEEP is contraindicated in patients with tension pneumothorax.

B. PEEP decreases FRC and lung compliance.

C. PEEP is indicated in Hypovolemic shock and asthma patients.

D. Auto-PEEP is the pressure set on the ventilator to maintain airway patency.

Correct Answer: A. PEEP is contraindicated in patients with tension pneumothorax.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Applying PEEP in patients with tension pneumothorax can exacerbate the condition by increasing intrathoracic pressure and not allowing adequate ventilation. Positive End-Expiratory Pressure (PEEP) : PEEP is the positive pressure that remains in the alveoli at the end of exhalation, exceeding atmospheric pressure in

mechanically ventilated patients. It can be set on the ventilator (extrinsic PEEP) or may occur as a complication (auto-PEEP). (Option D) Benefits of PEEP: Reduces alveolar trauma. Enhances oxygenation by recruiting closed alveoli, increasing gas exchange surface area. Increases functional residual capacity, improving oxygenation between breaths. (Option B) Improves ventilation/perfusion (V/Q) matching. Increases lung compliance. (Option B) Indications Contraindications Acute Respiratory Distress Syndrome (ARDS): Increases FRC and improves oxygenation. Chronic Obstructive Pulmonary Disease (COPD): Reduces work of breathing by splinting airways open. Pulmonary Edema: Improves lung compliance and oxygenation, especially in cardiogenic pulmonary edema. Auto-PEEP: Mitigates effects of intrinsic PEEP in patients with expiratory airflow limitation. Tension Pneumothorax: Can exacerbate intrathoracic pressure. Hypovolemic Shock: May decrease venous return and worsen hypotension. (Option C ruled out) High Intracranial Pressure: Increased intrathoracic pressure can impair cerebral perfusion. Bronchopleural Fistula: May hinder healing due to increased airway pressures. Acute Bronchospasm (Asthma): Can lead to hyperinflation and increased gas trapping. (Option C ruled out)

References:

www.ncbi.nlm.nih.gov/books/NBK441904/

medilib.ir/uptodate/show/1642

derangedphysiology.com/files/PEEP%20indications%20precautions%20and%20contraindications.pdf

↑ *Back to this question in Part A*

@Neet_pg_bot

Q9: A 50-year-old patient with a history of emphysema presents with a large pneumothorax and is unable to maintain adequate oxygenation on conventional mechanical ventilation. The medical team decides to initiate high-frequency oscillation ventilation (HFOV) as part of the management strategy. What is the typical respiratory rate range for HFOV? (Q846779)

A. 60 to 100 breaths/min

B. 100 to 150 breaths/min

C. 300 to 900 breaths/min

D. 180 to 300 breaths/min

Correct Answer: C. 300 to 900 breaths/min

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The typical respiratory rate for high-frequency oscillation ventilation (HFOV) in adults is between 300 to 900 breaths per minute, which allows for effective gas exchange and oxygenation. Indications of HFV in

adults: It is mainly used in severe ARDS to prevent ventilator-induced lung injury. Large air leak syndromes with the inability to keep lungs open, like bronchopleural fistula, pneumothorax, and pulmonary interstitial emphysema. Failure of conventional mechanical ventilation. Refractory hypoxemia as a rescue therapy. 60 to 100 breaths/min (Option A) and 180 to 300 breaths/min (Option D) are incorrect as they are too low for HFOV and do not meet the requirements for effective HFOV. Rate is 100 to 150/min (Option B): High-frequency jet ventilation (HFJV)

References:

www.ncbi.nlm.nih.gov/books/NBK563151/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q10: A 62-year-old patient with severe COVID-19 pneumonia presents with acute respiratory distress syndrome (ARDS). After a few days of mechanical ventilation, the patient’s arterial blood gas shows a PaO■ of 58 mmHg and a P/F ratio of 120. Given the patient's condition, which of the following interventions should the team prioritize to improve oxygenation? (Q846780)

A. Increase tidal volume to 8 mL/kg of ideal body weight

B. Implement prone positioning

C. Apply higher levels of PEEP to recruit collapsed alveoli

D. Start aggressive fluid resuscitation

Correct Answer: B. Implement prone positioning

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Prone positioning is beneficial for patients with severe ARDS (P/F ratio ≤150) as it has been shown to improve oxygenation and survival outcomes. This intervention aligns with current management strategies for ARDS. Increase tidal volume to 8 mL/kg of ideal body weight (Option A): Increasing tidal volume above the recommended ≤6 mL/kg can lead to alveolar overdistention and further lung injury, which is contrary to lung protective ventilation strategies. Apply higher levels of PEEP to recruit collapsed alveoli (Option C): Excessive PEEP can lead to hemodynamic instability or worsen ventilation-perfusion mismatch. Prone positioning is generally prioritized for improving oxygenation in severe cases. Start aggressive fluid resuscitation (Option D): In ARDS management, conservative fluid management is preferred to avoid fluid overload, which can exacerbate pulmonary edema and impair oxygenation.

References:

Barash Clinical Anesthesiology, 9th Edition, Page 4841-4846

↑ *Back to this question in Part A*

@Neet_pg_bot

Q11: A 68-year-old patient is recovering from pneumonia and has been on mechanical ventilation for the past week. The medical team is preparing to assess the patient for readiness to wean off the ventilator. Which of the following criteria should the medical team confirm before initiating the weaning process? (Q846781)

A. Vital capacity < 10 mL/kg

B. Minute ventilation > 10 L/min

C. Tidal volume (VT) > 5 mL/kg

D. Rapid shallow breathing index (RSBI) > 100

Correct Answer: C. Tidal volume (VT) > 5 mL/kg

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: A tidal volume greater than 5 mL/kg supports the decision to initiate weaning, indicating adequate respiratory function. Key measurements for weaning criteria: Inspiratory pressure : < –25 cm H■O Tidal volume (VT) : > 5 mL/kg Vital capacity : > 10 mL/kg (Option A) Minute ventilation : < 10 L/min (Option B) Rapid shallow breathing index (RSBI) : < 100 (with < 105 indicating potential for extubation). (Option D)

References:

Morgan's and Mikhail's Anaesthesiology - 7th Edition. Pg. 2539-2543

↑ *Back to this question in Part A*

@Neet_pg_bot

Q12: A 60-year-old patient on a ventilator for respiratory distress develops pneumonia 48 hours after starting mechanical ventilation. The physician notes fever, leukocytosis, and patchy infiltrates on the chest X-ray. Which statement is true regarding the patient's condition? (Q846782)

A. The patient likely has VAP and should be treated with ceftriaxone and azithromycin.

B. The patient likely has HAP and is appropriately treated with ceftriaxone and azithromycin.

C. Procalcitonin is not relevant in this case.

D. Early-onset VAP should be treated with piperacillin and carbapenem.

Correct Answer: A. The patient likely has VAP and should be treated with ceftriaxone and azithromycin.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The patient developed pneumonia 48 hours after starting mechanical ventilation, fitting the criteria for VAP. Symptoms such as fever, leukocytosis, and patchy X-ray infiltrates support this diagnosis. Criteria Ventilator-Associated Pneumonia (VAP) Timing Occurs after 48 hours of intubation Early: First 48 to 72 hours Late: Occurs after 72 hours Pneumonia Features Fever Leukocytosis Patchy infiltration on X-ray Treatment Early-Onset: Ceftriaxone plus azithromycin for 8 days (Option D)- Piperacillin/Tazobactam or Carbapenems are usually not required for early-onset {VAP}$unless the patient has specific risk factors. Vancomycin is also not required unless there is a high suspicion of {MRSA} Late-Onset: Vancomycin or linezolid plus cefepime for 8 days Common Organisms Haemophilus influenzae, Streptococcus pneumoniae, MRSA, and other antibiotic-sensitive oral flora and viruses and fungi Infection Marker Procalcitonin (Option C)

References:

Barash Clinical Anesthesiology. 9th edition. Pg. 4861-4866 (PDF)

Hospital-acquired and ventilator-associated pneumonia

Hospital-Acquired Pneumonia and Ventilator-Associated Pneumonia

Clinical practice guidelines for hospital-acquired pneumonia and ventilator-associated pneumonia in adults

↑ *Back to this question in Part A*

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Q13: A 45-year-old patient is scheduled for surgery under general anesthesia. During the airway assessment using Modified Mallampati scoring, the following image shows the patient's oropharyngeal structures during assessment. Which class does this patient fall into? (Q846783)

A. Class IV

B. Class I

C. Class II

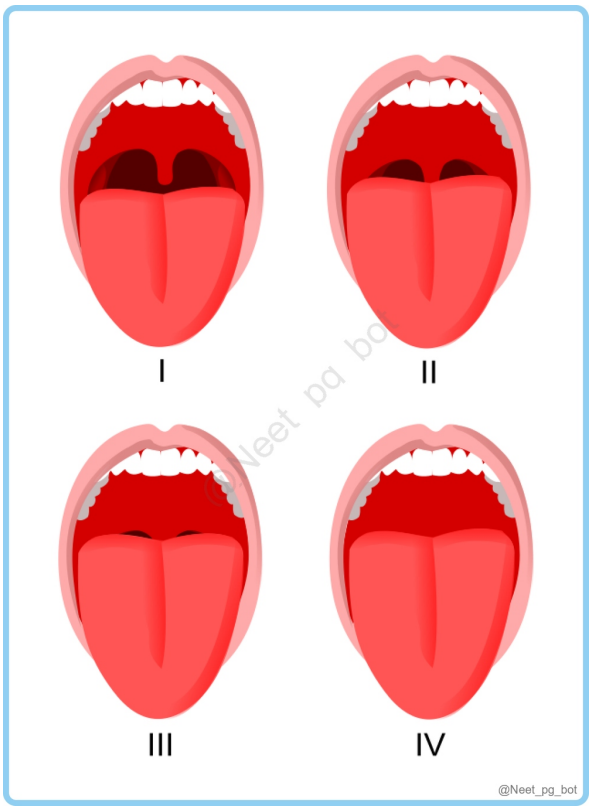
D. Class III



Correct Answer: D. Class III

- *Listen (English)*
- *Listen (Hindi)*

Explanation: Class III means that only the soft palate and the base of the uvula are visible. This classification is significant as it predicts a moderate risk of difficult intubation. Modified Mallampati scoring Class 0 Any part of the epiglottis is visible Class I Faucial pillars, uvula, and soft palate are visualized. (Option B) Class II Uvula and soft palate are visualized. Tip of uvula is not visualized. (Option C) Class III Only Soft palate and base of the uvula are visible. Predict difficult intubation Class IV Only hard palate is visible. (Option A)



References:

Miller Anaesthesia. 9th edition. Pg. 1379

Mallampati Score - StatPearls - NCBI Bookshelf

↑ *Back to this question in Part A*

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• [16_Airway Management] 027 Previous Year Questions

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[16_Airway Management] 027 Previous Year Questions — Quick Jump

Q1 (p. 654)	*Q2 (p. 654)*	*Q3 (p. 655)*	*Q4 (p. 656)*	*Q5 (p. 659)*	*Q6 (p. 662)*
Q7 (p. 663)	*Q8 (p. 664)*	*Q9 (p. 665)*	*Q10 (p. 669)*	*Q11 (p. 671)*	*Q12 (p. 673)*
Q13 (p. 674)	*Q14 (p. 679)*	*Q15 (p. 680)*	*Q16 (p. 681)*	*Q17 (p. 682)*	*Q18 (p. 683)*
Q19 (p. 684)	*Q20 (p. 685)*	*Q21 (p. 686)*	*Q22 (p. 687)*	*Q23 (p. 688)*	*Q24 (p. 689)*
Q25 (p. 691)	*Q26 (p. 692)*	*Q27 (p. 693)*	*Q28 (p. 694)*		

Q1: What is the primary purpose of PEEP (Positive End-Expiratory Pressure) in mechanical ventilation? (Q844116)

A. To increase respiratory rate

B. To reduce carbon dioxide levels

C. To increase the VR

D. To open alveoli and prevent atelectasis

Correct Answer: D. To open alveoli and prevent atelectasis

Explanation: Correct Option D – To open alveoli and prevent atelectasis PEEP is used in mechanical ventilation to keep alveoli open at the end of exhalation, preventing them from collapsing (atelectasis). This helps improve oxygenation and maintain lung function, especially in patients with acute respiratory distress syndrome (ARDS) or other conditions leading to alveolar collapse. Incorrect Options: Options A, B, and C are not the purpose of PEEP.

↑ *Back to this question in Part A*

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Q2: Steps of intubation sequence are: a. Flexion of lower cervical spine and extension of Atlanto-occipital joint b. Inflate cuff of endotracheal tube c. Introduce a laryngoscope from the right side of mouth d. Confirm the position of tube (Q854614)

A. a, b, c, d

B. a, b, d, c

C. b, a, c, d

D. a, c, b, d

Correct Answer: D. a, c, b, d

Explanation: Steps of intubation: Flexion of the lower cervical spine and extension of the atlanto-occipital joint. It is an optimal and ideal position for intubation (also called the Morning sniffing position). If you are a right-handed person then you will hold the laryngoscope in your left hand and start entering from the right side of patient's mouth till you see the epiglottis, once the epiglottis is visible, push the epiglottis anteriorly in adults then vocal cords will be visible After this place the endotracheal tube, then inflate it. Cuff pressure should not exceed 25

References:

Morgan & Mikhail's Clinical Anesthesiology 7th Edition, Pdf Page 603-07

↑ *Back to this question in Part A*

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Q3: Identify the mask in the image used for patients with COVID-19 infection. (Q855539)

A. Venturi mask

B. Hudson mask

C. Nebuliser

D. Non-rebreathing mask



Correct Answer: D. Non-rebreathing mask

Explanation: The Non-rebreathing mask (NRBM) is preferred for oxygen delivery in patients with COVID-19 infection requiring high concentrations of oxygen without risking aerosol generation. This mask delivers a high concentration of oxygen (60–90%) by using a one-way valve and a reservoir bag. It minimizes the rebreathing of exhaled air and limits aerosol dispersion, making it suitable for respiratory infections like COVID-19. Venturi mask (Option A): Delivers precise oxygen concentrations (24–50%) and is commonly used for COPD patients. However, it is not suitable for high oxygen demands in severe COVID-19 cases. Hudson mask (Option B): Delivers 40–60% oxygen but lacks a reservoir bag for higher concentrations and does not effectively prevent aerosol generation. Nebuliser (Option C): Used to administer aerosolized medications, but it can increase the risk of aerosol generation, making it less suitable for infectious respiratory conditions. The Non-rebreathing mask is the most appropriate for patients with severe COVID-19 requiring high-flow oxygen.

References:

Morgan and Mikhail's Clinical Anesthesiology, Edition 6, Pg 1333, 1334

↑ *Back to this question in Part A*

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Q4: Identify the given instrument? (Q859731)

A. Guedel airway

B. Laryngeal mask airway

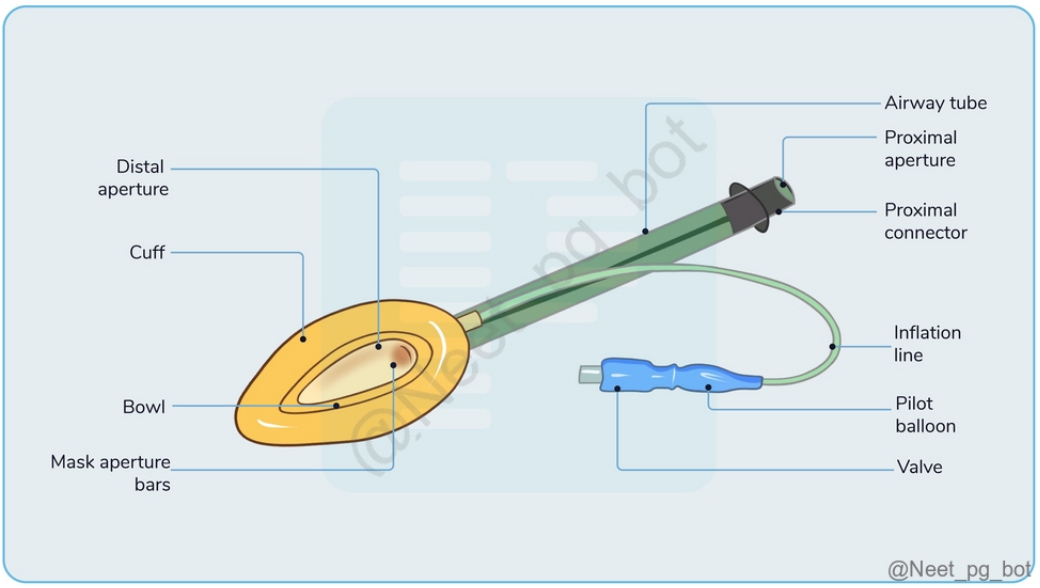
C. Endotracheal tube

D. Nasogastric tube

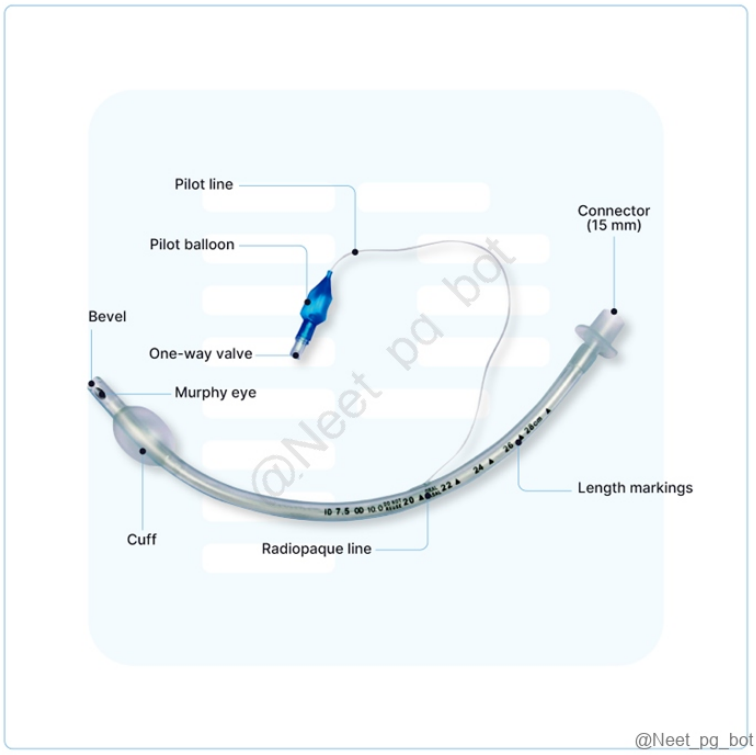


Correct Answer: B. Laryngeal mask airway

Explanation: A laryngeal mask airway (LMA) is a supraglottic airway device used to secure the airway in situations requiring anaesthesia or emergency management. It consists of: A tube connected to an inflatable mask that is placed over the laryngeal inlet. A cuff that is inflated to create a seal around the larynx. It is commonly used in: Daycare surgeries. Scenarios requiring less invasive airway management than an endotracheal tube. Patients where bag-mask ventilation is challenging. Guedel airway (option A): This is an oropharyngeal airway device used to keep the tongue from obstructing the airway. It looks like a rigid, curved plastic or rubber tube. {{caption_text}} Endotracheal tube (option C): This is a flexible tube inserted into the trachea through the mouth or nose to provide ventilation. It does not have an inflatable cuff like the LMA shown in the image. {{caption_text}} Nasogastric tube (option D): This is a thin, flexible tube used for feeding or suctioning gastric contents, inserted through the nose and extending into the stomach.


Airway tube
Proximal aperture
Proximal connector
Distal aperture
Cuff
Inflation line
Bowl
Pilot balloon
Mask aperture bars
Valve
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References:

Morgan and Mikhail's Clinical Anaesthesia, 5th Edition, Page 319

↑ *Back to this question in Part A*

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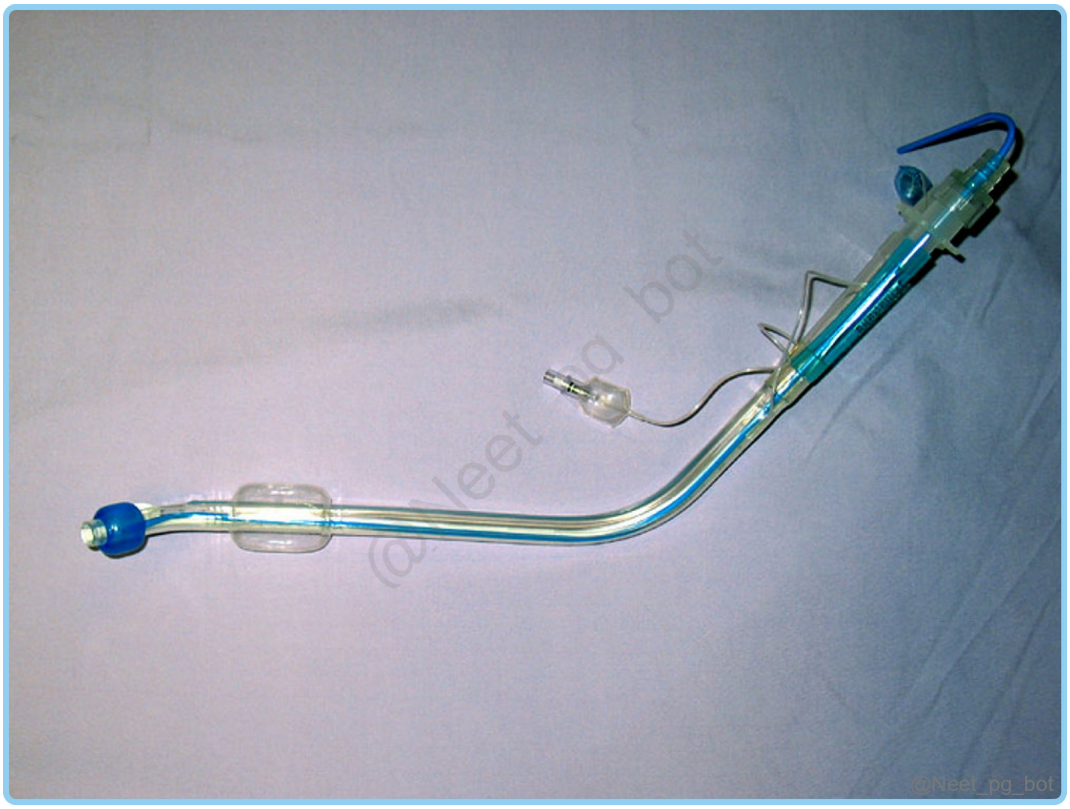
Q5: What is this device called? (Q859725)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

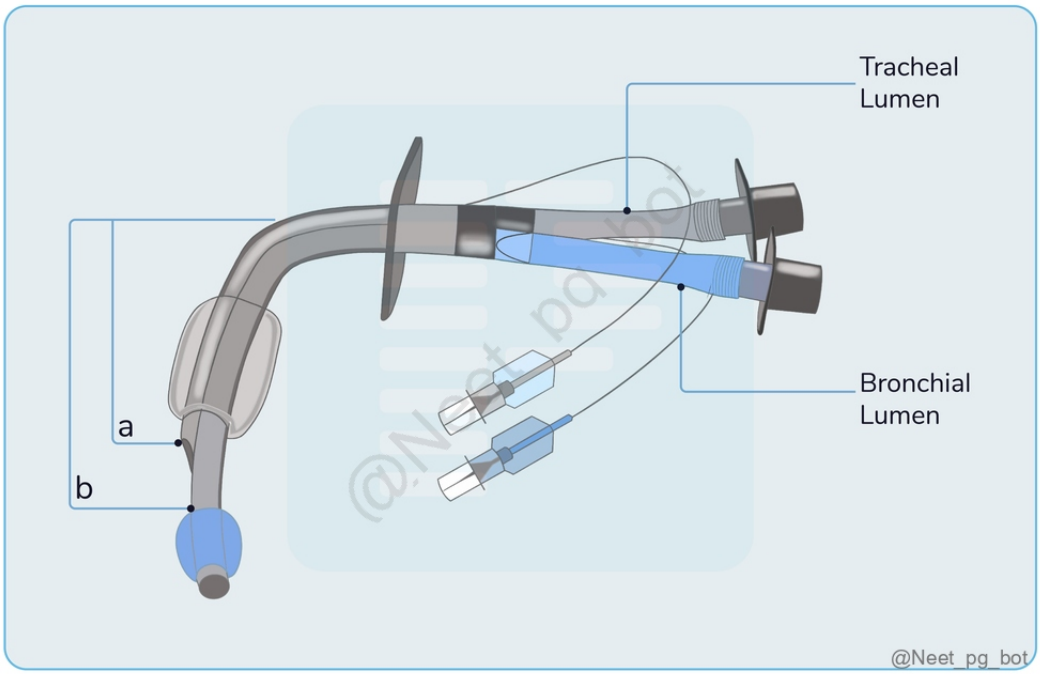
C. Ring-adair-elwin type

D. Endotracheal tubes equipped with bronchial blockers

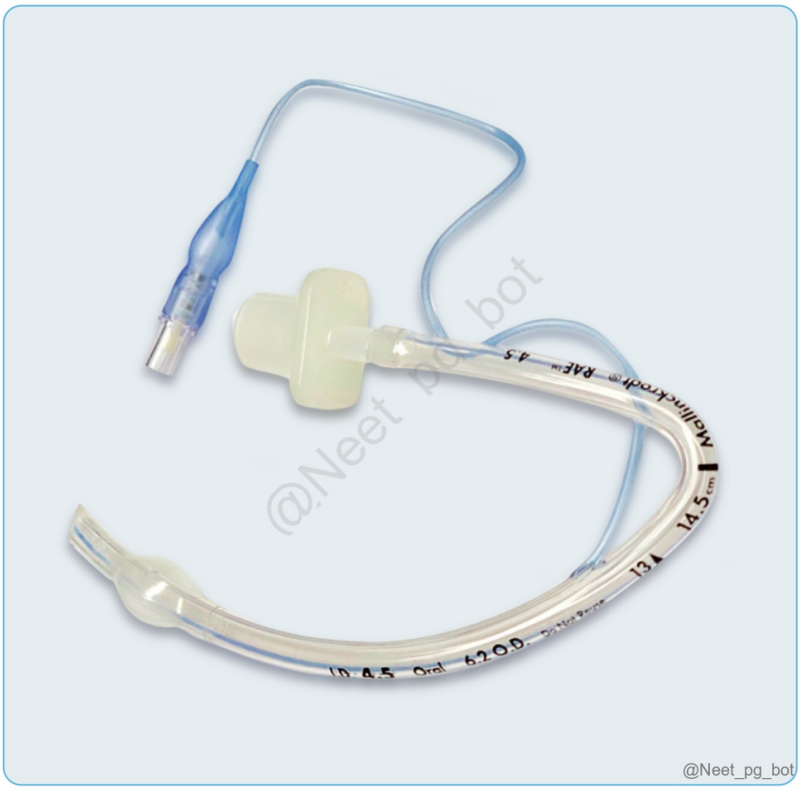


Correct Answer: B. Double-lumen endotracheal tube

Explanation: A double-lumen endotracheal tube is designed with two separate lumens or channels. It allows independent ventilation of each lung during thoracic surgeries or procedures requiring lung isolation. The tube has one lumen that enters the trachea and provides ventilation to one lung, while the other lumen enters the bronchus of the opposite lung, allowing selective lung collapse and ventilation control. Armored endotracheal tube (Option A): An armored endotracheal tube is a specialized type of endotracheal tube that has an internal wire coil or reinforcement. This provides rigidity and prevents kinking or collapse of the tube, ensuring a patent airway. Armored tubes are typically used in situations where there is a risk of tube compression or obstruction, such as during head and neck surgery. {{caption_text}} Ring-Adair-Elwin (RAE) tube (Option C): The Ring-Adair-Elwin tube is a type of cuffed endotracheal tube that has a preformed curvature near the distal end. This curved design helps to facilitate placement and positioning of the tube within the trachea. RAE tubes are commonly used in anesthesia and critical care settings. {{caption_text}} Endotracheal tubes equipped with bronchial blockers (Option D): These are endotracheal tubes that have an additional component called a bronchial blocker. A bronchial blocker is a small balloon-tipped catheter that can be inserted through the endotracheal tube and into one of the main bronchi. It is used to selectively block the airflow to one lung while allowing ventilation of the other lung. This technique is employed for lung isolation during thoracic surgeries or procedures.


Tracheal
Lumen
Bronchial
Lumen
a
b
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References:

Morgan and Mikhail's Clinical Anaesthesia, 5th Edition, Page 321, 322, 764

↑ *Back to this question in Part A*

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Q6: Which of the following is not a clear benefit of using high-pressure oxygen via nasal cannula (Q857027)

A. Decreases the need for intubation

B. Reduces nasopharyngeal dead space

C. Heating and humidification

D. PEEP

Correct Answer: A. Decreases the need for intubation

Explanation: High-flow oxygen therapy delivered via nasal cannula, also known as high-flow nasal cannula (HFNC) therapy, has several benefits, but it does not necessarily decrease the need for intubation in all cases.

Compared to the other options, Option A is the least clear benefit of using HFNC. High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): It works by delivering warmed & humidified gas , preventing nasal mucosa drying and overcoming the limitations of traditional cannulas. (Option C) HFNC therapy delivers a high flow of oxygen that washes out the nasopharyngeal dead space, allowing for more efficient ventilation and oxygenation. (Option A) Provide flows up to 60 L/min , allowing for accurate delivery of high FiO2 levels Generates positive airway pressures of over 5 cm H2O, making it a potential substitute for low-level CPAP (Conitinous Positive Airway Pressure). Can provide a degree of positive end-expiratory pressure. (Option D) Can deliver 100% Fio2. Advantages: Better tolerance compared to traditional face masks, allowing for greater comfort during oxygen therapy. Accurate delivery of high FiO2 in various clinical situations. Improved mortality rates in patients experiencing acute hypoxemic respiratory failure due to Sepsis and SARS-CoV-2 infection. Disadvantages: Higher cost compared to standard oxygen delivery devices. Limited availability outside of critical care settings

References:

Morgan & Mikhail's Clinical Anesthesiology

↑ *Back to this question in Part A*

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Q7: A 32-year-old man with blunt chest trauma following a high-speed motor vehicle collision is intubated in the emergency department for worsening respiratory distress. Mechanical ventilation is initiated. Which of the following initial ventilator settings is INCORRECT for this patient? (Q856769)

A. Respiratory rateof 12 breaths/min

B. PEEP of 5 cm H■O

C. FIO of 100%

D. Tidal volume of 12ml/kg of actual BW

Correct Answer: D. Tidal volume of 12ml/kg of actual BW

Explanation: In patients with blunt chest trauma, lung-protective ventilation strategies are crucial to minimize ventilator-induced lung injury (VILI). One of the key components of lung-protective ventilation is limiting tidal volume. The generally recommended tidal volume for patients with acute respiratory distress syndrome (ARDS), which includes many cases of severe blunt chest trauma, is 6 ml/kg of predicted body weight (not actual body weight) to reduce the risk of barotrauma.Using 12 ml/kg will cause over-distension of fragile alveoli and sharply increases mortality in lung injury. Lung Protective Ventilation is the current standard in mechanical ventilation which includes the following: Low TV to prevent barotrauma Increase RR-RR can be increased up to 30-35/min to maintain minute ventilation Increase PEEP-Can increase PEEP from 4-12 even up to 16 cm H 2 O if needed to prevent collapse of alveoli especially in ARDS FiO 2 < 0.6 or 60% - If FiO 2 > 60%, oxygen radical formation can occur causing worsening of symptoms Respiratory rate - 12 breaths/min (Option A): It is within the normal range

for an adult and can be an appropriate initial setting, although the specific rate may need adjustment based on the patient's condition and blood gas values. PEEP-5 cm H 2 O (Option B): Positive end-expiratory pressure (PEEP) is used to prevent alveolar collapse and improve oxygenation. A setting of 5 cm H 2 O is a common starting point and can be adjusted based on the patient's oxygenation status. FiO 2 -100% (Option C): In the initial stages, a high fraction of inspired oxygen (FiO 2) might be necessary to ensure adequate oxygenation, but it should be titrated down as soon as possible to the lowest level necessary to maintain adequate oxygen saturation, in order to minimize the risk of oxygen toxicity.

References:

Barash Clinical Anesthesiology. 9th edition. Pdf Page 4841-4846

↑ *Back to this question in Part A*

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Q8: What is the most effective way to verify the placement of the endotracheal tube in a 30-year-old male patient who has been intubated for surgery by a final-year resident? (Q856169)

A. X-ray chest

B. Auscultation

C. End-tidal CO■ concentration

D. Chest rise

Correct Answer: C. End-tidal CO■ concentration

Explanation: End-tidal CO■ concentration (capnography) : This is the most reliable and effective method to confirm endotracheal tube placement. A sustained detection of CO■ in exhaled air indicates proper placement in the trachea and confirms ventilation. It provides immediate, continuous, and quantitative confirmation. Capnography is the gold standard for confirming endotracheal tube placement during intubation due to its accuracy and real-time feedback. Incorrect Options: X-ray chest (Option A) : Useful for confirming tube depth or ruling out complications like pneumothorax, but it is not practical for immediate verification of tube placement. Auscultation (Option B) : Helps assess ventilation by listening for bilateral breath sounds, but it is less reliable as it can miss esophageal intubation or identify asymmetrical placement. Chest rise (Option D) : A visible chest rise may indicate ventilation but does not confirm tracheal placement, as it can occur with esophageal intubation or bag-mask ventilation.

References:

Morgan and Mikhail’s Clinical Anesthesiology, Edition 5, Pg 127, 328, 1187

↑ *Back to this question in Part A*

Q9: In conventional oxygen therapy, which device will deliver the highest FiO 2 ? (Q856584)

A. Venturi mask

B. Hudson mask

C. Non-rebreathing mask

D. High Flow Nasal Cannula

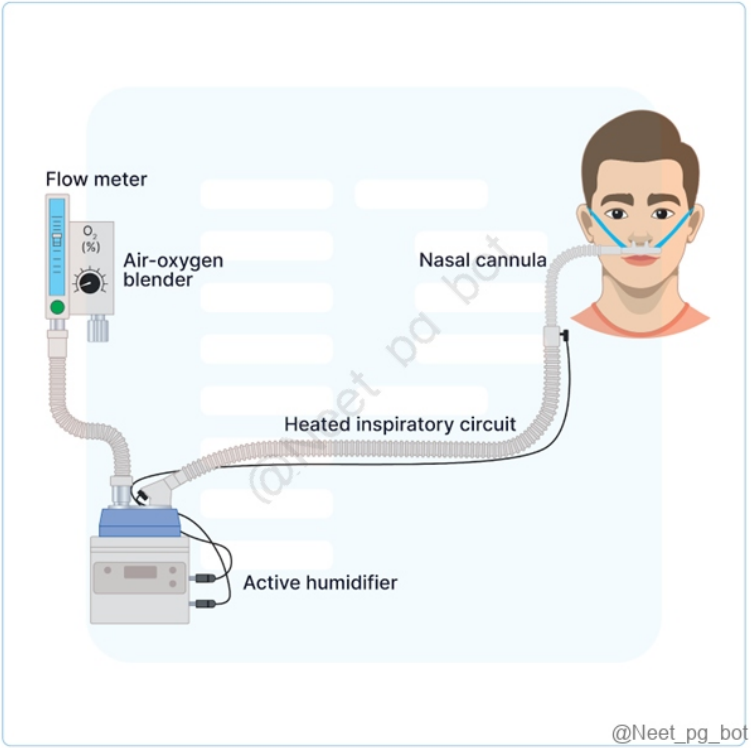
Correct Answer: C. Non-rebreathing mask

Explanation: Non-rebreathing mask (NRBM) delivers the highest FiO■ (up to 90–100%) among conventional oxygen devices because: It has a reservoir bag . One-way valves prevent room-air entrainment. High-Flow Nasal Cannula (HFNC): Can deliver very high FiO■ but is NOT classified as conventional oxygen therapy , hence not the answer. 1. High-Flow Devices: High-Flow Nasal Cannula (HFNC), Venturi mask 2. Low-Flow Devices: Nasal Prongs, Simple Face Mask, Non-Rebreather Mask (NRBM) Low-Flow Devices: Type of mask Nasal Prong Face Mask (Hudson mask) (Option B) NRBM (Option C) Flow rate 1 to 6 L 6 to 10 L 10 to 15 L FiO 2 25 to 45% 35 to 60% 65 to 95 % {{caption_text}} {{caption_text}} {{caption_text}} High-Flow Devices: High-Flow Nasal Cannula (HFNC), Venturi mask High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): Can deliver very high FiO■ but is NOT classified as conventional oxygen therapy , hence not the answer. Delivers warm, humidified oxygen up to 60 L/min Provides accurate high FiO■ (up to 100%) Generates >5 cm H■O positive airway pressure , similar to low-level CPAP Venturi Mask: (Option A) Fixed FiO■ but lower, 24–60% , high precision

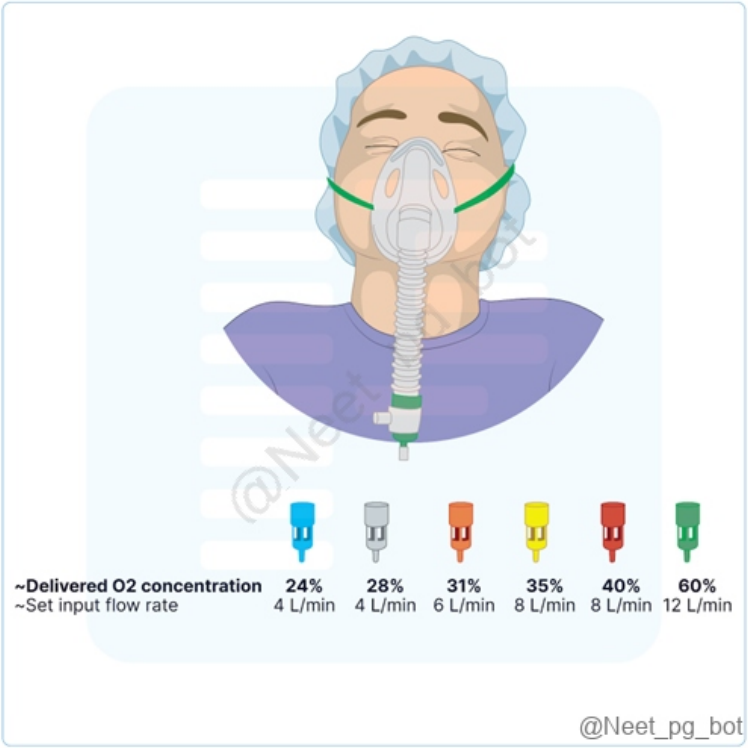

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Flow meter
O_2 (%)
Air-oxygen blender
Nasal cannula
Heated inspiratory circuit
Active humidifier
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References:

Miller’s Anesthesia, 9th edition, Page 2595

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 2507 to 2515

Barash Clinical Anesthesiology, 9th Edition, Page - 4841

Equipment in Anaesthesia and Critical Care, Page - 36

Davidson’s Principles and Practice of Medicine, 24th edition, page 202

https://www.ncbi.nlm.nih.gov/books/NBK526071/

↑ *Back to this question in Part A*

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Q10: What is the maximum rate of oxygen flow that can be maintained using a traditional oxygen mask? (Q856582)

A. 5 L/min

B. 15 L/min

C. 10 L/min

D. 20 L/min

Correct Answer: C. 10 L/min

Explanation: A conventional oxygen mask , also known as a simple face mask, is a device used for oxygen delivery to patients who require supplemental oxygen. The mask covers the nose and mouth, allowing the patient to breathe in a mixture of oxygen and room air. The maximum oxygen flow rate that can be delivered with a conventional oxygen mask is typically around 10 L/min . This flow rate ensures that a sufficient amount of oxygen is delivered to the patient, maintaining an adequate oxygen concentration or fraction of inspired oxygen (FiO 2). Higher flow rates may not significantly increase the delivered oxygen concentration and may lead to discomfort for the patient. Type of mask Nasal Prong Face Mask (Simple face mask) NRBM Flow rate 1 to 6 L(Low flow) 6 to 10 L(Low flow) 10 to 15 L(High flow) FiO 2 25 to 45% 35 to 60% 65 to 95 % {{caption_text}} {{caption_text}} {{caption_text}}


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References:

Miller’s Anesthesia, 9th edition, Page 2595

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 2507 to 2515

↑ *Back to this question in Part A*

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Q11: A 42-year-old man who was under home isolation after testing positive for COVID-19 develops breathing difficulty and is brought to the ER. The patient is alert and responsive but is breathing rapidly. SpO 2 is measured to be 86%. He is administered oxygen via a face mask with a reservoir bag with a flow rate of 10 L/min. After a trial of one hour, his SpO 2 is 88%. What is the next step in management? (Q856569)

A. Increase flow rate to 15 L/min

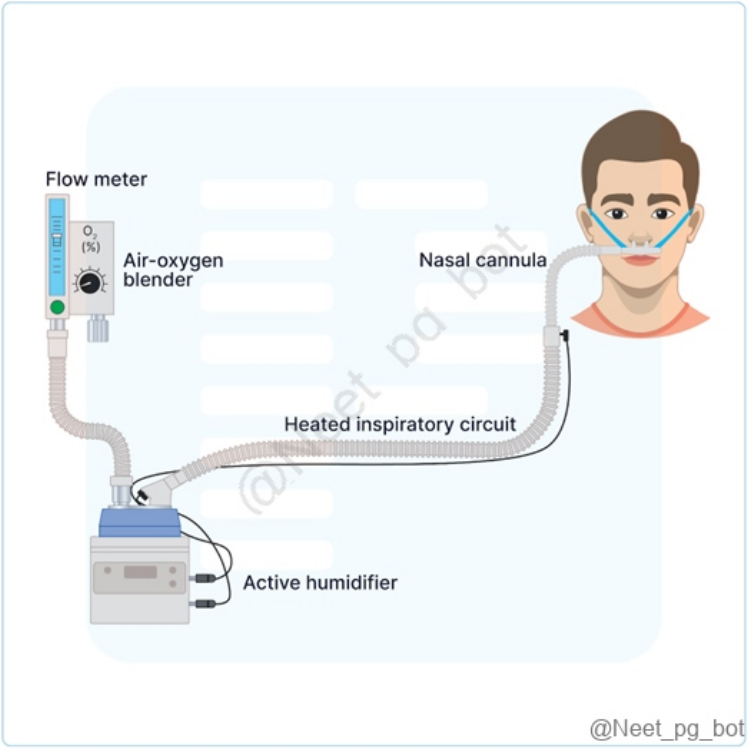
B. High-flow nasal cannula oxygen therapy

C. Endotracheal intubation

D. No specific intervention is necessary

Correct Answer: B. High-flow nasal cannula oxygen therapy

Explanation: In this scenario, the patient is experiencing hypoxemia with a SpO■ of 86% despite receiving oxygen via a non-rebreather mask at 10 L/min for one hour, resulting in only a slight improvement to 88%. This indicates inadequate oxygenation and suggests the need for more effective respiratory support. The most appropriate next step is to initiate high-flow nasal cannula oxygen therapy to improve oxygenation and reduce the work of breathing. High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): It works by delivering warmed & humidified gas , preventing nasal mucosa drying, and overcoming the limitations of traditional cannulas. Provide flows up to 60 L/min , allowing for accurate delivery of high FiO 2 levels Generates positive airway pressures of over 5 cm H 2 O, making it a potential substitute for low-level CPAP (Conitinous Positive Airway Pressure). Can deliver 100% FiO 2 Advantages: Better tolerance compared to traditional face masks, allowing for greater comfort during oxygen therapy. Accurate delivery of high FiO 2 in various clinical situations. Improved mortality rates in patients experiencing acute hypoxemic respiratory failure due to Sepsis and SARS-CoV-2 infection. Disadvantages: Higher cost compared to standard oxygen delivery devices. Limited availability outside of critical care settings Incorrect Options: Increase flow rate to 15 L/min (Option A): May provide a small improvement in oxygenation. However, given that the patient's SpO 2 only improved from 86% to 88% after one hour of oxygen therapy at 10 L/min, a further increase in flow rate alone is unlikely to be sufficient. Endotracheal intubation (Option C) is a more invasive procedure typically reserved for patients with severe respiratory distress who cannot maintain adequate oxygenation or ventilation despite non-invasive interventions. No specific intervention is necessary (Option D): After an hour of oxygen therapy, the patient's SpO 2 is still below the target range, indicating that a specific intervention is required to improve oxygenation.





References:

Miller’s Anesthesia, 9th Edition, Pages - 2543,2554

Barash Clinical Anesthesiology, 9th Edition, Page - 4841

Equipment in Anaesthesia and Critical Care, Page - 36

Davidson’s Principles and Practice of Medicine, 24th edition, page 202

https://www.ncbi.nlm.nih.gov/books/NBK526071/

↑ *Back to this question in Part A*

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Q12: Which of the following post-bronchodilator pulmonary function test (PFT) results would indicate airflow obstruction requiring further evaluation in a 50-year-old male with ASA Grade III status? (Q858067)

A. FEV1<0.85 and FEV1/FVC<0.8

B. FEV1<0.85 and FEV1/FVC<0.75

C. FEV1<0.85 and FEV1/FVC<0.7

D. FEV1<0.8 and FEV1/FVC<0.75

Correct Answer: C. FEV1<0.85 and FEV1/FVC<0.7

Explanation: FEV1 below 0.85 liters and FEV1/FVC ratio less than 0.7 indicate significant airflow limitation, suggesting conditions like COPD. In patients with grade 3 ASA, further evaluation, including lung volume measurements or gas diffusion capacity assessment, is needed to determine the severity and type of lung disease. FEV1 < 0.85 and FEV1/FVC < 0.8(Option A): An FEV1/FVC ratio of 0.8 is normal, usually not needing more assessment. FEV1 < 0.85 and FEV1/FVC < 0.75 (Option B): An FEV1/FVC ratio of 0.75 suggests airflow limitation, while an FEV1 below 0.85 liters indicates reduced air volume expelled in the first second. Despite the exact FEV1/FVC ratio, a low FEV1 necessitates further evaluation. FEV1 < 0.8 and FEV1/FVC < 0.75 (Option D): An FEV1 below 0.8 liters suggests significant airflow limitation, warranting further evaluation. However, with an FEV1/FVC ratio of 0.75 within the normal range, immediate additional assessment may not be necessary

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC7898324/

↑ *Back to this question in Part A*

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Q13: A COVID patient required oxygen therapy. Which of the following cylinders should be used to provide oxygen for this patient? [(Q857562)

A. 1

B. 2

C. 3

D. 4

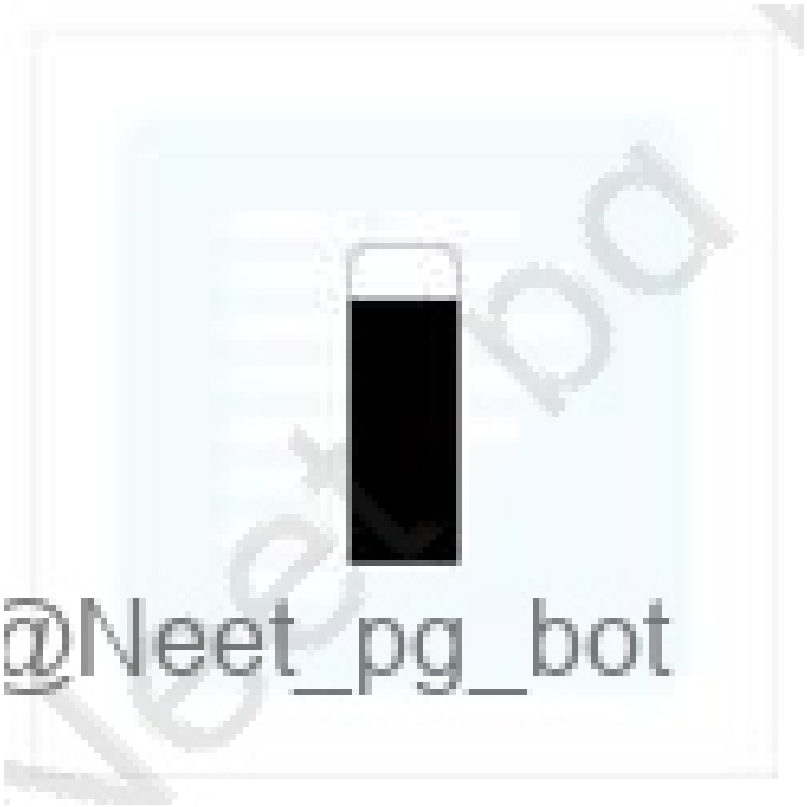


Correct Answer: A. 1

Explanation: The first cylinder (black body with a white shoulder) is the one to be used for oxygen therapy for the COVID-19 patient, as it contains medical oxygen. Gasses and their PIN Indices: Gas Cylinder color Image PIN Index system Air Black body with black & white shoulder {{caption_text}} 1,5 Oxygen Black body with white shoulder {{caption_text}} 2,5 N2O Blue {{caption_text}} 3,5 Carbon dioxide Grey {{caption_text}} 1,6 (> 7.5%) ; 2,6 (< 7.5%) Entonox Blue body with white shoulders {{caption_text}} 7 Cyclopropane Orange {{caption_text}} 3,6

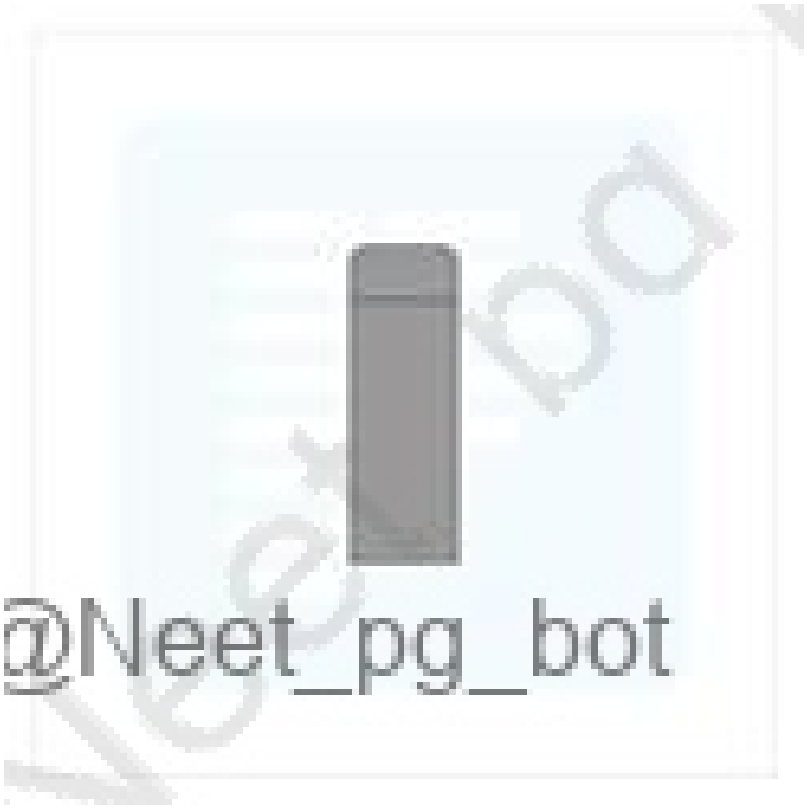


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References:

Dorsch & Dorsch Anaesthesia Equipment 5th Edition page - 7

Equipment in Anaesthesia and critical care by Daniel Aston pages - 6,10,137

↑ *Back to this question in Part A*

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Q14: The mask given below works on which of the following principles? (Q857036)

A. Bohr effect

B. Boyle's principle

C. Bernoulli principle

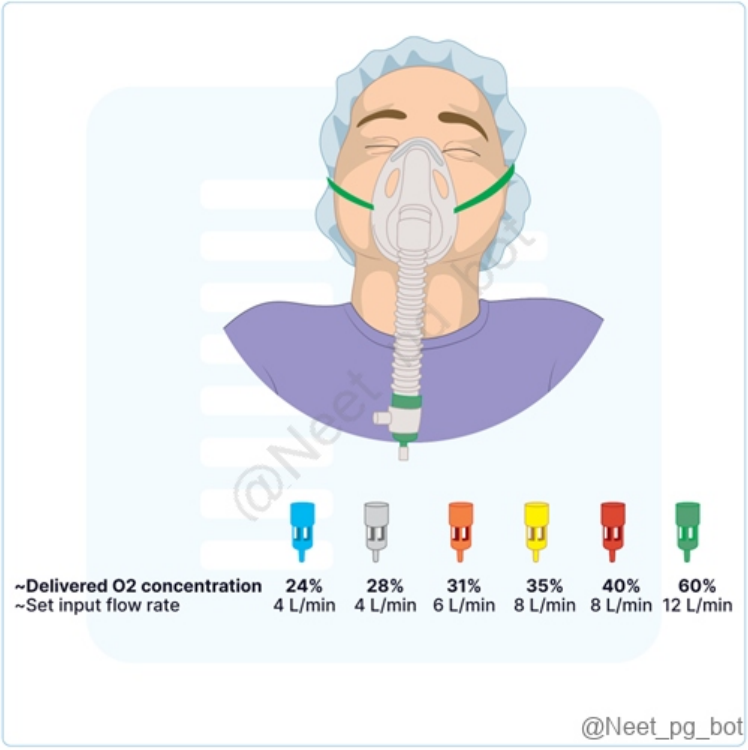
D. Mapleson's circuit



Correct Answer: C. Bernoulli principle

Explanation: The picture depicts a High Flow Venturi mask that uses Bernoulli’s principle to deliver a predetermined and fixed oxygen concentration to the patient. This principle states that as the velocity of a fluid (in this case, oxygen) increases, the pressure within the fluid decreases. The mask uses this principle to entrain room air when pure oxygen is delivered through a small orifice, resulting in a high-velocity jet. This creates a predictable and controlled oxygen concentration that is delivered to the patient■ Venturi Mask: Is a high-flow device with fixed performance that delivers a precise concentration of oxygen (FiO■) by mixing oxygen with

ambient air at specific flow rates, typically ranging from 2 to 15 L/min. It is often used in patients requiring controlled oxygen therapy, such as those with COPD. Color coding of Venturi mask Color FiO2 Require Flow rate (L/min) Blue 24% 4 White 28% 4 Orange 31% 6 Yellow 35% 8 Red 40% 8 Green 60% 12 Bohr effect (Option A): describes how hemoglobin's oxygen-binding affinity decreases in response to increased levels of carbon dioxide and decreased pH, facilitating oxygen release to tissues. This physiological phenomenon pertains to blood gas exchange Boyle's principle (Option B): states that the pressure of a gas is inversely proportional to its volume at a constant temperature. Mapleson’s circuits (Option D): are Semi-closed types of Breathing circuits used during anesthesia to deliver oxygen and anesthetic agents and effectively washout CO2.



References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC10661642/

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 2507 to 2515

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A patient in the ICU with an endotracheal tube now needs a tracheostomy tube. Which type of tube will you use? (Q857815)

A. Uncuffed tracheostomy tube

B. Cuffed tracheostomy tube

C. Metallic tracheostomy tube

D. Endotracheal tube

Correct Answer: B. Cuffed tracheostomy tube

Explanation: Cuffed tracheostomy tubes are commonly used for patients who require mechanical ventilation or have an increased risk of aspiration. The cuff creates a seal around the trachea, preventing air leaks and minimizing the risk of aspiration of secretions, food, or other materials into the lungs. Uncuffed tracheostomy tube (Option A): An uncuffed tracheostomy tube has no inflatable cup. These are most commonly used in the neonatal population or for patients who can manage their own secretions. These allow airway clearance but don't protect from aspiration. Metallic tracheostomy tube (Option C): A 2-3 inch long curved metal or plastic tube placed in a surgically created opening in the trachea to keep it open. It is indicated in case of obstruction in the upper airway Establishes and maintains a secure airway when it is unsafe to do so via the mouth or nose, in cases of severe facial, head, or neck injuries, for bronchial hygiene and secretion removal, and to provide airway protection in patients with neuromuscular disorders. Endotracheal tube (Option D): It is made of polyvinyl chloride. The main indication is to secure a definitive airway when there is the inability to maintain airway patency, inability to protect the air against aspiration, failure to ventilate, failure to oxygenate, and anticipation of a deteriorating course leading to respiratory failure.

References:

https://journals.sagepub.com/doi/pdf/10.1177/0310057X0002800609?utm

↑ *Back to this question in Part A*

@Neet_pg_bot

Q16: What should be the next course of action in managing a patient with pneumonia who is on a ventilator, weighs 50 kg, has a respiratory rate of 14 breaths per minute, a bicarbonate level of 18, a pH of 7.33, a paCO2 level of 48 mmHg, a Pao2 level of 110 mmHg, a PEEP of 12 cm H■O, a tidal volume of 420 mL, and a SpO2 level of 100% with an FiO2 of 90%? (Q854618)

A. Increase PEEP

B. Decrease FiO■

C. Decrease RR

D. Increase tidal volume

Correct Answer: B. Decrease FiO■

Explanation: Lung Protective Ventilation is the current standard in mechanical ventilation. If Fio2 > 60%, oxygen radical formation can occur causing worsening of symptoms. FIO2 has to be decreased in this patient to prevent free radical formation and since PaO2 is higher than normal. Clinical Modes of Management in ARDS Lung Protective Ventilation (LPV): Tidal volumes : ≤6 mL/kg of ideal body weight to prevent alveolar overdistension. (Option D ruled out) PEEP : Use moderate levels to avoid alveolar collapse. (Option A ruled out) Plateau pressure : Limit to ≤30 cm H■O to minimize barotrauma and pneumothorax. Permissive hypercapnia : Allow mild-to-moderate respiratory acidosis to avoid lung injury. (Option C ruled out) FiO■ : Minimize while targeting PaO■ >55 mmHg or SpO■ >88%. (Option B) Recruitment Strategies: Use of PEEP to recruit collapsed alveoli and improve oxygenation. Prone positioning : Shown to improve survival in severe ARDS (P/F ratio ≤150). Advanced Techniques: Neuromuscular blockade : Early use may benefit patients with severe ARDS (P/F ratio <150). ECMO : Considered for severe, refractory ARDS in specialized centers. Rescue Therapies (Limited evidence for survival benefit): High-frequency oscillatory ventilation : No significant outcome improvements. Inhaled vasodilators (iNO, prostaglandins): Transient oxygenation improvement but no long-term benefit. Fluid Management: Conservative fluid management : Improves oxygenation and ventilator-free days. Corticosteroids : Mixed results; may benefit ARDS from bacterial sepsis but not viral pneumonia (except SARS-CoV2).

References:

Barash Clinical Anesthesiology. 9th edition. Pdf Page 4841-4846

↑ *Back to this question in Part A*

@Neet_pg_bot

Q17: A neonate is brought to the pediatric ER in acute respiratory distress. On examination, the abdomen is scaphoid. Which of the following should not be performed in this patient? (Q854615)

A. PPV

B. Bag and mask ventilation

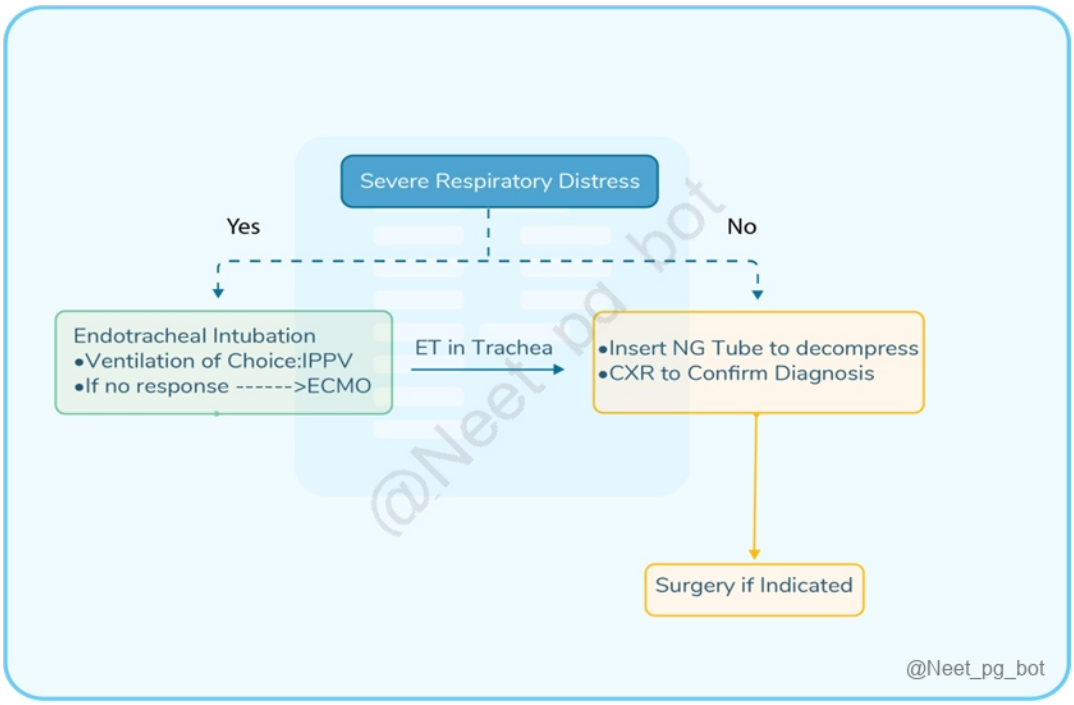
C. Oxygen therapy

D. Intubation

Correct Answer: B. Bag and mask ventilation

Explanation: The clinical triad of respiratory distress, scaphoid abdomen, and shifted heart sounds in a neonate indicates Congenital Diaphragmatic Hernia (CDH) . Bag and Mask Ventilation is contraindicated in congenital diaphragmatic hernia (CDH) patients due to the risk of worsening respiratory distress and increasing intrathoracic pressure, which can further impede lung expansion and exacerbate the hernia. Management of Congenital Diaphragmatic Hernia: Initial Stabilization: Airway Management: Immediate endotracheal intubation (ET) is critical. (Option D ruled out) ECMO: If there is no response to ET Avoid excessive, mean airway pressure to prevent barotrauma Gastric Decompression: An orogastric tube is inserted to prevent gastric distention that worsens lung compression. Bag and Mask Ventilation is Contraindicated in CDH Surgical Repair is done only

after pulmonary stabilisation in CDH (Immediate surgery done in case of Traumatic Hernia) PPV (Positive Pressure Ventilation) (Option A): This can be performed but should be done carefully to avoid overinflating the stomach, which can worsen respiratory distress. Intubation with PPV is preferred. Oxygen therapy (Option C): This is safe and can help improve oxygenation but is usually insufficient alone for severe respiratory distress in CDH.



References:

Nelson Textbook of Paediatrics 21st Edition, Pg - 945

Bailey & Love's Short Practice of Surgery, 28th edition, Pg - 271

↑ *Back to this question in Part A*

@Neet_pg_bot

Q18: A child was being delivered oxygen by nasal cannula at 3L/min. What is the FiO2 being delivered? (Q854611)

A. 24%

B. 30%

C. 44%

D. 40%

Correct Answer: B. 30%

Explanation: For each liter per minute (L/min) of oxygen flow, you can estimate an increase in FiO2 of about 4%. 1L/min of O2 corresponds to an FIO2 of 24% In this case, with an oxygen flow rate of 3 L/min, the FiO2 delivered is approximately 32% Nasal cannula: Used in low to medium concentrations of O2 (22-44%) When these are attached to the flow meter which is connected to the central pipeline supply of an ICU or cylinders and is turned on at 1L per minute, these deliver oxygen of about 24%. Atmospheric oxygen is from 20 to 21% When the concentration of oxygen is increased, it leads to an increase in the concentration of FIO2 This device can only deliver up to 6L per minute Every liter corresponds to its subsequent FiO2: 1 L/min-24% 2 L/min-28% 3 L/min-32% 4 L/min-36% 5 L/min-40% 6 L/min-44% This device is not beneficial for a capacity of > 6 liters Advantages: Patients can talk and eat with 02 support when using a nasal cannula and a nasal cannula can be used in home settings. Disadvantages: It may irritate nasal and pharyngeal mucosa. If the flow is given for more than 6L, the FiO2 may vary. 24% (Option A): An FiO2 of 24% corresponds to 1L/min of oxygen. 44% (Option C): An FiO2 of 44% corresponds to 6L/min of oxygen. 40% (Option D): An FiO2 of 40% corresponds to 5L/min of oxygen.

References:

Oxygen devices and delivery systems - PMC

↑ *Back to this question in Part A*

@Neet_pg_bot

Q19: Which of these is a second-generation Laryngeal Mask Airway (LMA)? (Q839902)

A. LMA Proseal

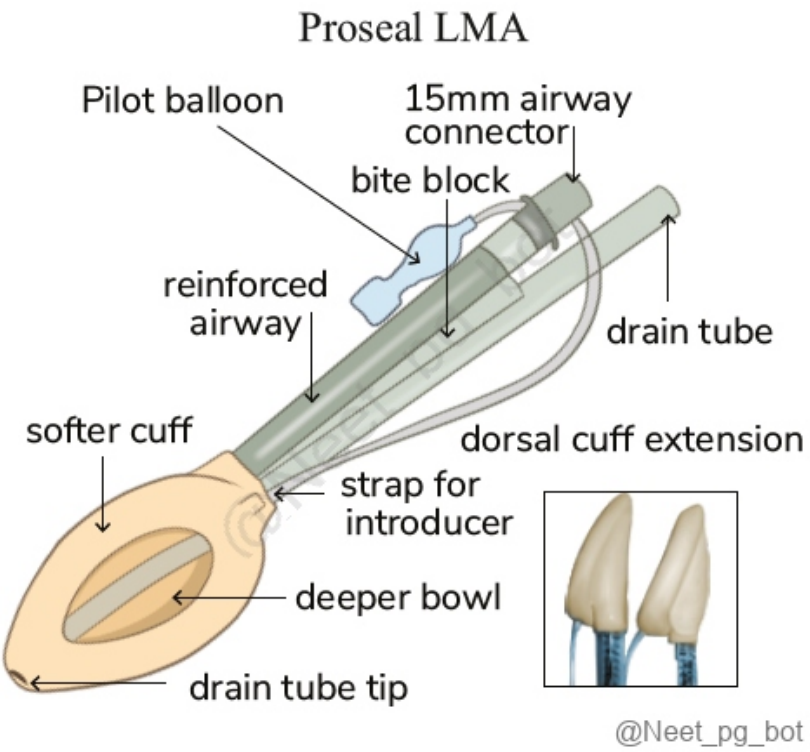
B. Ambu

C. Intubating LMA

D. Classic LMA

Correct Answer: A. LMA Proseal

Explanation: Correct Option A - LMA Proseal: LMA Proseal is a second-generation LMA designed with two ports: Tracheal port Esophageal port Second-generation Laryngeal Mask Airways (LMAs) have modifications to improve airway seal and reduce aspiration risk. ProSeal Supreme i-gel AuraGain Baska Mask LMA Protector Ambu LMA(Option B) refers to a brand and may include first- or second-generation devices depending on the model. Classic LMA(Option D) is first-generation (no drain tube). Intubating LMA (Fastrach) (Option C) is primarily designed to facilitate endotracheal intubation.



References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q20: Which of the following conditions is a contraindication for the use of bi-level positive airway pressure? (Q860376)

A. Obstructive sleep apnea

B. Unconscious/ sedation

C. High oxygen levels

D. Low partial pressure of oxygen

Correct Answer: B. Unconscious/ sedation

Explanation: BiPAP (bilevel positive airway pressure) therapy is best for short-term use and in patients who can cough and protect their airway. Indications for using BiPAP machine COPD Obstructive sleep apnea (Option A)

Patients with conditions causing low partial pressure of oxygen (Option D) Contraindications: Absolute contraindication Relative contraindication Facial trauma/ burn Altered mental staus/ unconscious (Option B) Fixed upper airway obstruction Inability to protect the airway Active vomiting Life threatening hypoxemia Respiratory or cardiac arrest

References:

https://www.ncbi.nlm.nih.gov/books/NBK578188/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q21: In which of the following is the given position used? (Q844284)

A. Neurosurgery

B. Intubation

C. NG tube insertion

D. Bougie insertion



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Correct Answer: B. Intubation

Explanation: Correct Option B – Intubation: The given image shows the sniffing position. It is used during intubation to align the oral, pharyngeal, and laryngeal axes, making it easier to visualize the vocal cords and insert the endotracheal tube. Incorrect Options: Options A, C, and D: The sniffing position is not typically used for these.

↑ *Back to this question in Part A*

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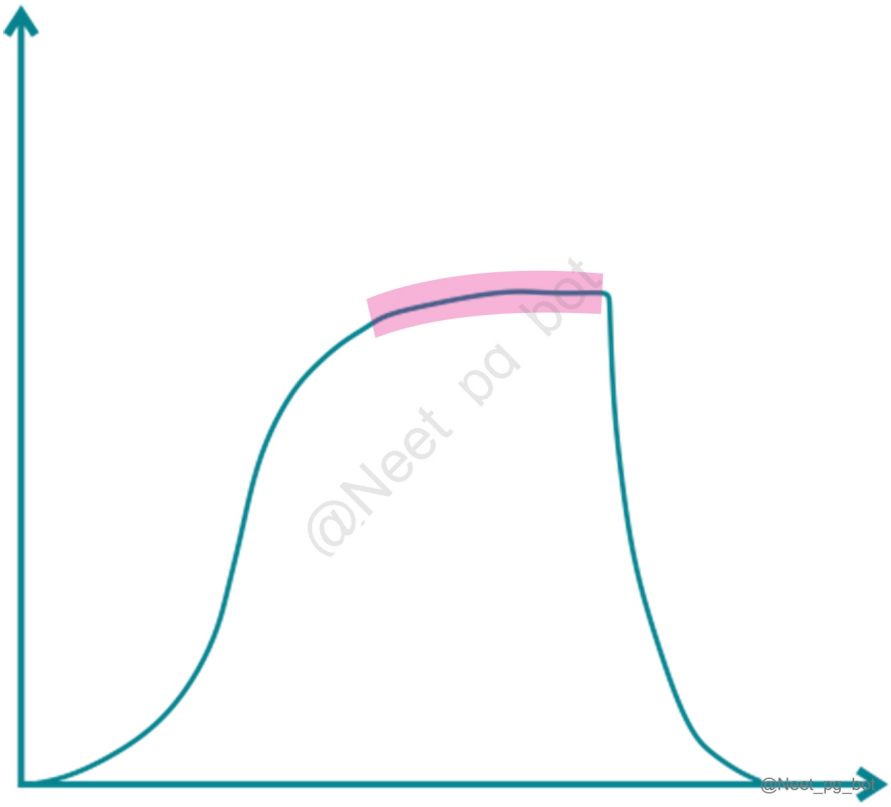
Q22: In the given capnograph, what does the marked area denote? (Q844285)

A. Expiratory upstroke

B. Alveolar Plateau

C. Inspiratory downstroke

D. Inspiratory baseline



Correct Answer: B. Alveolar Plateau

Explanation: Correct Option B – Alveolar Plateau: In a normal capnograph, the marked area represents the alveolar plateau phase. This is the flat part of the capnograph, indicating constant exhalation of CO2. Incorrect Options: Options A, C, and D are not marked in the given capnograph.

References:

↑ *Back to this question in Part A*

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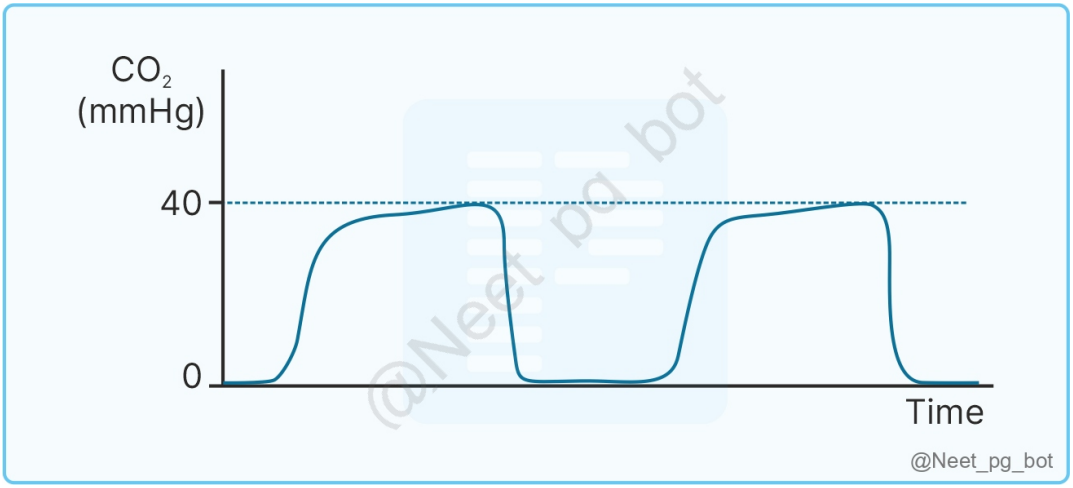
Q23: The waveform shown in the image represents which of the following physiological parameters? (Q866897)

A. Arterial oxygen saturation

B. End-tidal carbon dioxide

C. Functional residual capacity

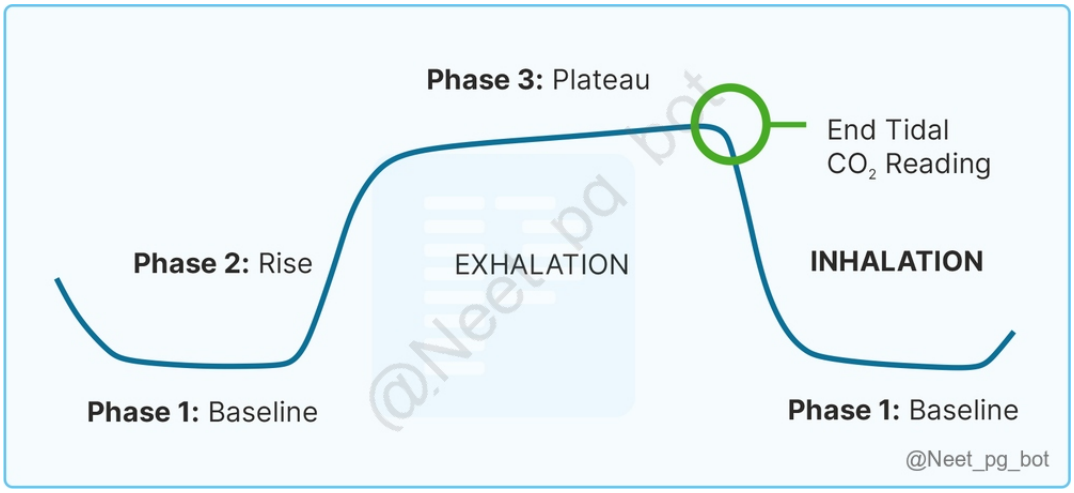
D. Tidal volume



Correct Answer: B. End-tidal carbon dioxide

Explanation: Correct Option B - End tidal carbon dioxide The image is of a waveform which represents end-tidal carbon dioxide (EtCO2). This is a capnography waveform, a non-invasive monitoring technique used in anesthesia to measure the concentration or partial pressure of carbon dioxide (CO2) at the end of each breath. A typical capnography waveform consists of four distinct phases: Phase I (Inspiration): The baseline represents a zero CO2 level, as the patient is inhaling fresh gas without any CO2. Phase II (Early Expiration): This phase shows a rapid increase in CO2 as the anatomical dead space is exhaled, mixing with alveolar gas. Phase III (Alveolar Plateau): The CO2 concentration reaches a plateau as gas from the alveoli is exhaled. The end of this phase, point E, is the end-tidal CO2 value. Phase IV (Inspiration): A sharp downstroke to the baseline as inspiration begins and fresh gas dilutes the CO2 in the airway. Incorrect Options: Arterial oxygen saturation (SpO2) (Option A) : This is measured by a pulse oximeter and is displayed as a plethysmographic waveform, not a capnogram. The SpO2 waveform is a pulsatile wave that reflects blood flow and oxygenation, not the gas exchange pattern of respiration. Functional residual capacity (FRC) (Option C): FRC is a lung volume, the amount of air remaining in the lungs after a normal expiration. It is not measured with a waveform but through specific pulmonary function tests. Tidal volume (VT)

(Option D): Tidal volume is the amount of air inhaled or exhaled in a single breath. While the capnogram provides information about the breath cycle, the waveform itself does not directly measure the volume of air. Instead, it measures the concentration of CO2 over time, from which tidal volume can be inferred through other calculations.



References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q24: In the image shown, identify the function of the marked structure on the endotracheal tube. (Q866891)

A. Facilitation of vocal cord visualization

B. Monitoring airway pressure

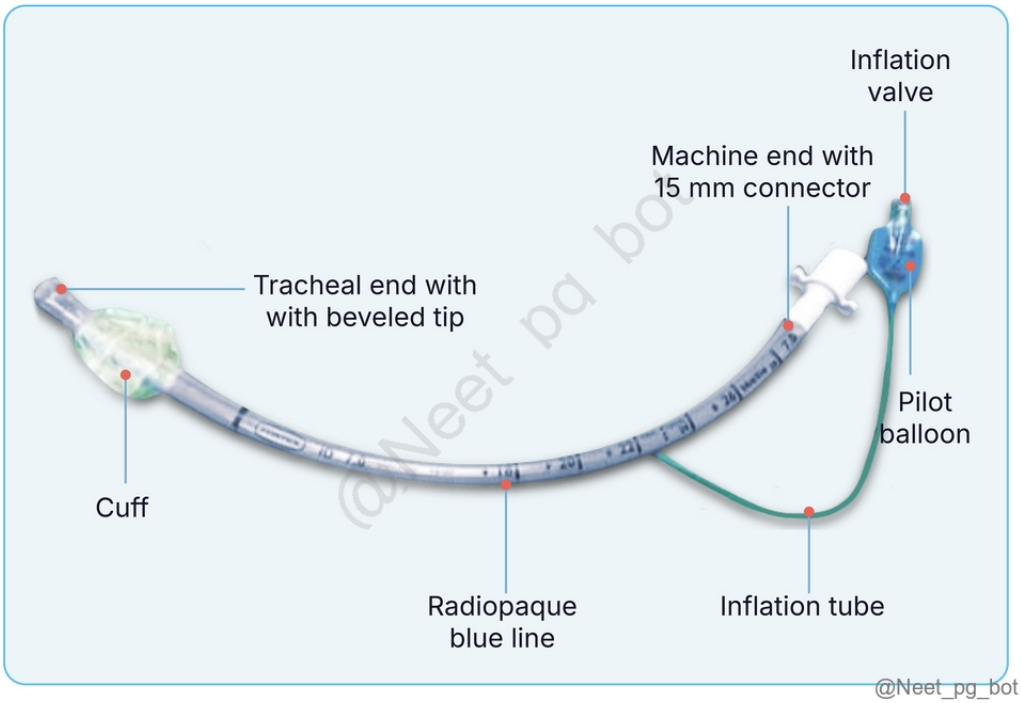
C. Prevention of air leakage and aspiration

D. Suctioning of lower respiratory tract secretions



Correct Answer: C. Prevention of air leakage and aspiration

Explanation: The marked structure is the inflatable cuff of the endotracheal tube. When inflated, it creates a seal between the tube and the tracheal wall. This seal prevents air leakage during positive pressure ventilation, ensuring efficient delivery of tidal volume. It also reduces the risk of aspiration by blocking secretions from the upper airway from entering the lungs. Overinflation can cause tracheal mucosal injury; thus, cuff pressure should be maintained between 20–30 cm H■O. Incorrect Options: Facilitation of vocal cord visualization (Option A) : Visualization is achieved during intubation using laryngoscopy, not by the cuff. Monitoring airway pressure (Option B): This is done via ventilator circuits, not by the cuff. Suctioning of lower respiratory tract secretions (Option D): Requires a suction catheter, not the cuff.



References:

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↑ *Back to this question in Part A*

@Neet_pg_bot

Q25: You are a junior resident in the ICU. A senior doctor asks you to manage a mechanically ventilated patient whose arterial blood gasses showed features of hypoventilation with respiratory acidosis. Which of the following parameters can you modulate to improve the condition of the patient? (Q857773)

A. Decrease FiO2

B. Increase respiratory rate

C. Increased PEEP

D. Increase plateau pressure

Correct Answer: B. Increase respiratory rate

Explanation: In the above case, the patient has features of hypoventilation along with respiratory acidosis. This indicates that it is a type 2 respiratory failure. It is corrected by increasing the respiratory rate which increases ventilation and decreases CO2 concentration and provides improvement. Therefore in order to correct hypoxia and hypercapnia, respiratory rate needs to be increased. Four key Ventilator parameters: Respiratory Rate (RR): Breaths per minute. Primarily affects CO2 removal (ventilation). Tidal Volume (TV): Volume of air per breath. Also affects CO2 removal (ventilation). PEEP (Positive End-Expiratory Pressure): Pressure in the lungs at the end of expiration. Primarily affects oxygenation. FiO2 (Fraction of Inspired Oxygen): Percentage of oxygen in the inspired air. Directly affects oxygen delivery. Note: PEEP and FiO2 are for oxygenation , while RR and Tidal Volume are for ventilation (CO2 removal). ABG Abnormality Ventilator Adjustment ↓ PaO2 ↑ PEEP or ↑ FiO2 (Option C ruled out) ↓ PaCO2 ↓ respiratory rate or ↓ tidal volume ↑ PaCO2 ↑ respiratory rate or ↑ tidal volume (Option B) Preferable to adjust RR (Respiratory Rate) over tidal volume in situations where low tidal volume ventilation is beneficial (i.e., ARDS). Decrease FiO2 (Option A): reduces the fraction of inspired oxygen. While important in some situations, it doesn't directly address the CO2 buildup causing respiratory acidosis. Increased PEEP (Option C): (Positive End-Expiratory Pressure) can improve oxygenation but doesn't directly help with CO2 removal. Increase plateau pressure (Option D): reflects the pressure in the lungs during a breath hold. While important to monitor to prevent lung injury, simply increasing it doesn't directly improve CO2 removal and can also be harmful.

References:

https://www.ncbi.nlm.nih.gov/books/NBK441904/

https://www.ncbi.nlm.nih.gov/books/NBK448186/

↑ *Back to this question in Part A*

@Neet_pg_bot

Q26: Which of the following is the use of the Mallampatti classification? (Q860080)

A. Endotracheal intubation

B. To evaluate the risk of surgery

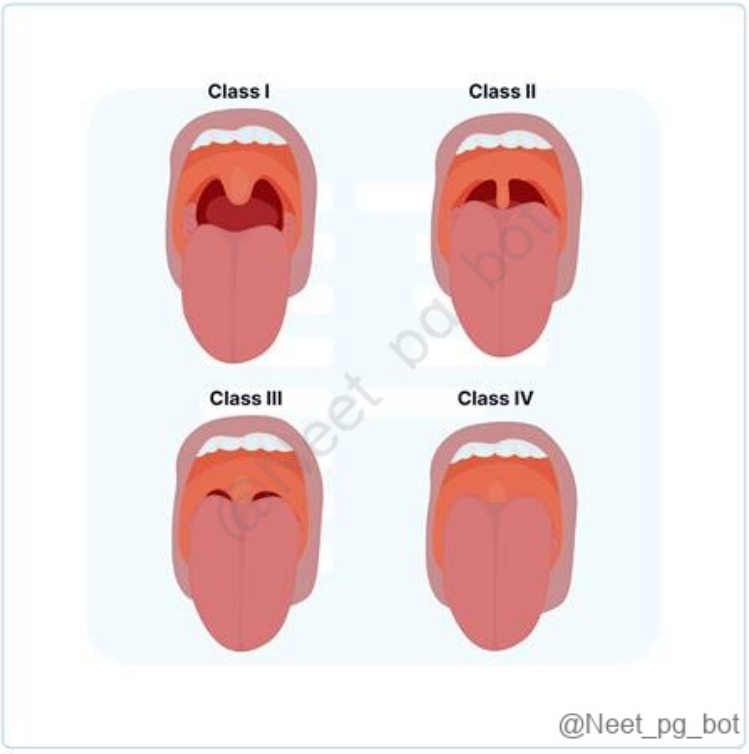
C. To evaluate the pros and cons of surgery

D. To evaluate the fitness of the patient

Correct Answer: A. Endotracheal intubation

Explanation: Correct Option: A) Endotracheal Intubation The Mallampati classification is primarily used to assess the difficulty of endotracheal intubation. It evaluates the visibility of anatomical structures in the oral cavity to predict the ease or difficulty of securing the airway. Mallampati Airway Classification Mallampati Classification: (Mnemonic - PUSH - Pillars, Uvula, Soft palate, Hard palate) Class I: Faucial pillars, uvula, soft palate, and hard palate are visualized. Class II: The base of the uvula, soft palate, and hard palate are visualized. Class III: Soft palate and hard palate are visualized. Class IV: Hard palate only is visualized. Class 0: Any part of the epiglottis is visible (easy laryngoscopy with difficult airway management) Incorrect Options : Options B, C, and D: The

Mallampati classification is not used to evaluate the overall risk associated with surgery and does not provide insights into the pros and cons of surgical procedures. It does not assess a patient's general fitness for surgery.



References:

Miller's Anesthesia, 9th edition, Page 925.

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 571.

↑ *Back to this question in Part A*

@Neet_pg_bot

Q27: A patient undergoing general anesthesia develops left lung collapse following intubation. On auscultation, breath sounds are heard only on the right side. What is the most likely cause of this condition? (Q852485)

A. Right endobronchial intubation

B. Mucus secretions obstructing the endotracheal tube

C. Pneumothorax on the left side due to positive pressure ventilation

D. Bronchospasm

Correct Answer: A. Right endobronchial intubation

Explanation: The physical finding of breath sounds heard only on the right side with absence on the left strongly supports this diagnosis of right endobronchial intubation (right mainstem intubation) . When an endotracheal tube is advanced too far, it typically enters the right mainstem bronchus due to its more vertical orientation compared to the left bronchus. This results in ventilation of only the right lung while the left lung collapses due to lack of ventilation. Mucus secretions obstructing the endotracheal tube (Option B) would typically cause bilateral decreased air entry or generalized poor air movement rather than unilateral findings. If the tube were completely obstructed, there would be no or diminished breath sounds on both sides. Pneumothorax on the left side due to positive pressure ventilation (Option C) could present with diminished breath sounds on the left but would typically have additional signs such as hypoxemia, hypotension, tracheal deviation toward the right, and hyperresonance to percussion on the left side. Bronchospasm (Option D) typically presents with bilateral wheezing, prolonged expiration, and increased airway pressures. It would not cause a complete absence of breath sounds on one side with normal findings on the other.

References:

Morgan & Mikhail's Clinical Anesthesiology, 6th Edition, Page 317-319

↑ *Back to this question in Part A*

@Neet_pg_bot

Q28: A known case of asthmatic bronchitis was reported to the hospital with breathlessness, palpitations, and oxygen saturation of 88%. The hospital does not have a ventilator. All the following can be given to the patient, except? (Q793453)

A. Hydrocortisone

B. Theophylline

C. Oxygen with oxygen mask, and reservoir

D. Leukotriene antagonist

Correct Answer: C. Oxygen with oxygen mask, and reservoir

Explanation: Correct Option C - Oxygen with oxygen mask, and reservoir: Bronchial asthma is an inflammatory chronic disease condition of airways that is characterized by paroxysmal wheezing, cough, and chest tightness. Asthma causes tightening of muscles around the airways and causes airways to narrow. Hence, when both acute bronchitis and asthma occur together, this situation is called asthmatic bronchitis. Currently, nasal cannula, non-breathing bag face mask reservoir, venturi masks, are used in the clinical settings as conventional oxygen therapies. However, non-invasive ventilation (NIV) in airways causes trauma, need for sedation, infections. Conventional oxygen therapy (COT) involves a simple face mask that delivers oxygen. COT is not able to provide

sufficient respiratory support to the patients that are suffering from bronchial asthma. As it needs an extra attempt to breath and work for the breathing process to maintain oxygenation. Incorrect Options: Option A - Hydrocortisone: In case of bronchial asthma and hay fever, oral hydrocortisone is an effective therapy for symptomatic relief. Option B - Theophylline: Theophylline is applied for the treatment of shortness of breath, wheezing, chest tightness caused by asthma, emphysema, chronic bronchitis and other lung diseases. Lungs passages are opened and relaxed to make breathing easier. Option D - Leukotriene antagonist: Chronic asthma/bronchial asthma is treated with Leukotriene-receptor antagonists such as Montelukast and Zafirlukast.

References:

Morgan & Mikhail's Clinical Anesthesiology

↑ *Back to this question in Part A*

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• [17_Miscellaneous] 028 Nerve Blocks

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[17_Miscellaneous] 028 Nerve Blocks — Quick Jump

Q1 (p. 696)	*Q2 (p. 698)*	*Q3 (p. 699)*	*Q4 (p. 701)*	*Q5 (p. 703)*	*Q6 (p. 705)*
Q7 (p. 706)	*Q8 (p. 708)*	*Q9 (p. 710)*	*Q10 (p. 711)*	*Q11 (p. 713)*	*Q12 (p. 715)*
Q13 (p. 716)	*Q14 (p. 718)*	*Q15 (p. 719)*	*Q16 (p. 721)*		

Q1: A 30-year-old male presents to the clinic with trauma to his lower jaw. He needs stitches on his lower lip near the incisors. Which nerve block will provide adequate anesthesia for suturing the lower lip and nearby gingiva? (Q846707)

A. Infraorbital nerve block

B. Mental nerve block

C. Inferior alveolar nerve block

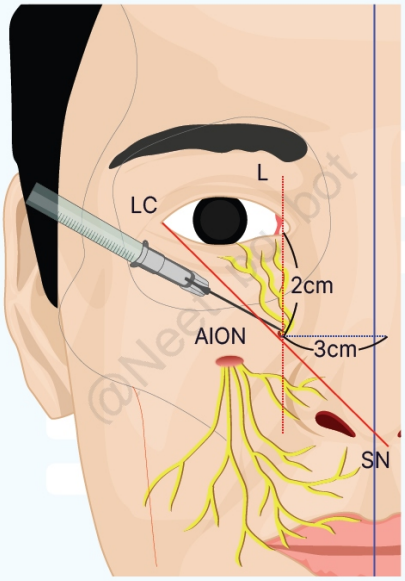
D. Supraorbital nerve block

Correct Answer: B. Mental nerve block

■ *Listen (English)*

■ *Listen (Hindi)*

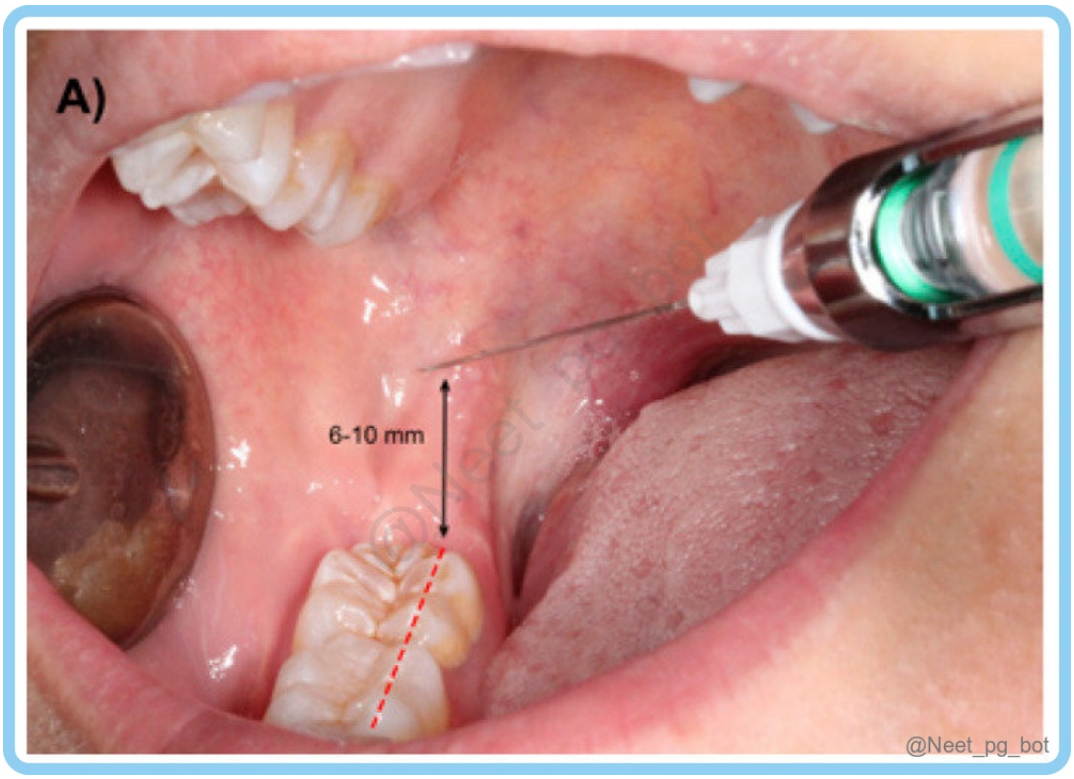
Explanation: The mental nerve provides sensation to the lower lip, labial mucosa, and gingiva near the incisors and canines , making it the correct choice for anesthesia in this case. Nerve Block Anesthesia Distribution Supraorbital & Supratrochlear (Ophthalmic Nerve) (Option D) Anesthetizes the entire forehead up to the scalp's vertex. Infraorbital (Maxillary Nerve) (Option A) Provides sensation loss to lower eyelid, medial cheek, side of nose, upper lip. Mental (Mandibular Nerve) (Option B) Anesthetizes lower lip, labial mucosa, and gingiva near incisors and canines. Inferior Alveola r (Mandibular Nerve) (Option C) Anesthetizes all lower teeth, gums, anterior labial and lingual areas.



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References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg no. 2047
https://www.downeastem.org/nerve-blocks-of-the-face-and-mouth

↑ *Back to this question in Part A*

@Neet_pg_bot

Q2: In preparing for a superficial cervical plexus block, where should the anesthesiologist insert the needle? (Q846710)

A. Along the anterior border of the sternocleidomastoid

B. Along the posterior border of the sternocleidomastoid, halfway between the mastoid and clavicle

C. At the midpoint of the clavicle

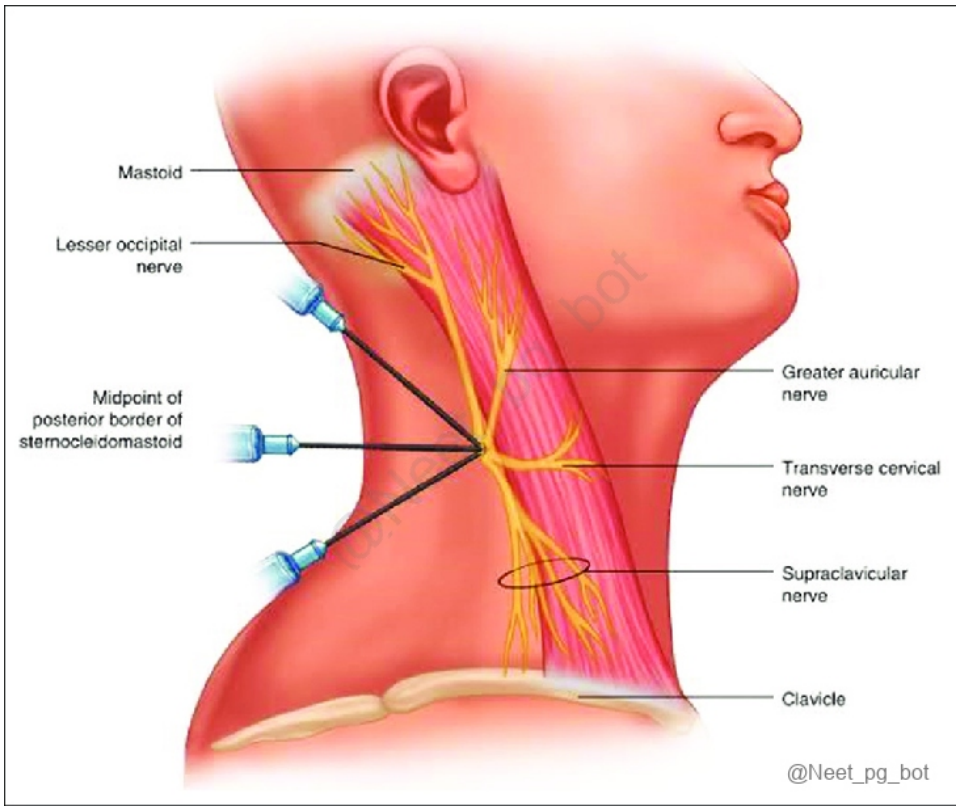
D. Lateral to the trapezius muscle

Correct Answer: B. Along the posterior border of the sternocleidomastoid, halfway between the mastoid and clavicle

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The correct insertion point for a superficial cervical plexus block is along the posterior border of the sternocleidomastoid muscle, halfway between the mastoid process and the clavicle . This approach ensures effective sensory nerve blockade while minimizing complications. Indications of Cervical plexus block: Used for U/L neck surgeries (e.g., carotid endarterectomy) Supplement for clavicle/shoulder anesthesia. Along the Anterior Border of the Sternocleidomastoid (Option A) : This location is inappropriate as it does not effectively target the cervical plexus branches and may increase the risk of vascular injury. At the Midpoint of the Clavicle (Option C) : This area is too inferior and does not align with the cervical plexus branches, making it ineffective for the intended anesthesia. Lateral to the Trapezius Muscle (Option D) : This location is irrelevant for the cervical plexus block and may lead to inadequate anesthesia.



References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pg no. 1054, 1055

↑ *Back to this question in Part A*

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Q3: During the procedure as given in the image, the anesthesiologist uses a 25-gauge needle to inject the local anesthetic. If the needle inadvertently penetrates too deeply and damages nearby structures, which of the following complications might arise? (Q846720)

A. Carotid artery puncture

B. Hemorrhage from the internal jugular vein

C. Mandibular nerve blockade leading to loss of mastication

D. Damage to the facial nerve causing unilateral weakness



Correct Answer: D. Damage to the facial nerve causing unilateral weakness

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The procedure shown in the image is an auriculotemporal nerve block . The facial nerve runs superficially in the parotid gland and innervates the muscles of facial expression. If the needle penetrates too deeply, it may damage the facial nerve, which leads to U/L LMN facial paralysis/weakness. Auriculotemporal Nerve Block Given at 1 to 1.5 cm anterior to the ear at the tragus, above the temporomandibular joint. Palpate the superficial temporal artery to avoid intra-arterial injection. Keep the injection superficial to prevent facial nerve block. Carotid Artery Puncture (Option A) : Less likely, as the procedure is performed anterior to the ear, away from the carotid artery. Hemorrhage from the internal Jugular Vein (Option B) : Less likely as the procedure is performed anterior to the ear, away from the internal jugular vein. Mandibular Nerve Blockade Leading to Loss of Mastication (Option C) : This is not a direct result of an auriculotemporal nerve block, as it primarily provides sensation rather than motor function to the muscles of mastication.



References:

https://resources.wfsahq.org/atotw/scalp-block-technique-and-applications/

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, pg no. 2050, 2051

↑ *Back to this question in Part A*

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Q4: A 35-year-old male presents with a laceration to his pinna after a sports injury. He expresses significant pain and anxiety about the repair procedure. The physician decides to perform a nerve block to ensure adequate analgesia during the repair. Which of the following is the preferred nerve block for pinna repair? (Q846723)

A. Auriculotemporal nerve block

B. Greater auricular nerve block

C. Trigeminal nerve block

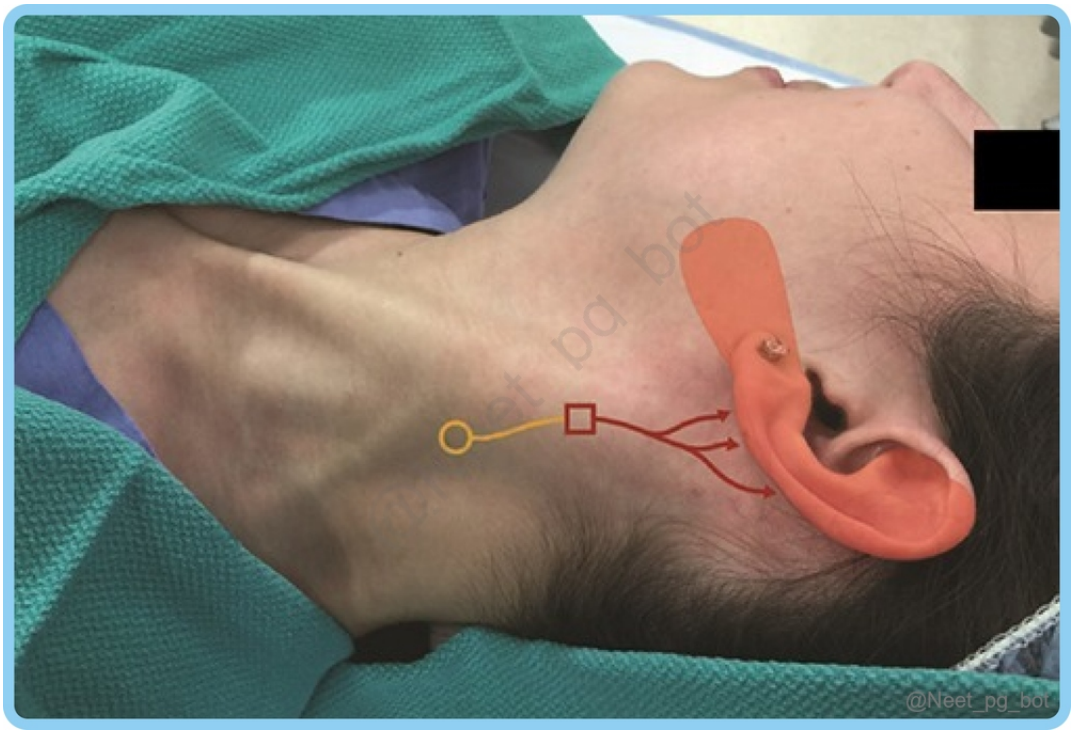
D. Facial nerve block

Correct Answer: B. Greater auricular nerve block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Greater auricular nerve block is preferred for pinna repair because it provides effective analgesia to the ear and surrounding areas, reducing the need for perioperative opioids. Greater Auricular Nerve Block: Supplies sensory innervation to: Inferior part of the ear. Skin over the mastoid process. Angle of the mandible. Segments of the external ear: Tail of the helix, antitragus, lobule of the auricle, with variable supply to the spine of the helix, tragus, and concha. Technique: Location for Block: At the level of the cricoid cartilage (C6). Local anesthetic: Injected superficially along the belly of the muscle, approximately 5-6 cm below the ear. Auriculotemporal nerve block (Option A) i s not preferred for pinna repair because it primarily targets the temporomandibular joint (TMJ) and surrounding structures. Trigeminal nerve block (Option C) is not indicated for pinna repair because it specifically targets the treatment of trigeminal neuralgia rather than providing analgesia for ear injuries. Facial nerve block (Option D) is not preferred for pinna repair because it primarily targets analgesia for facial procedures.



References:

https://www.sciencedirect.com/topics/neuroscience/great-auricular-nerve

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4943106/#:

https://head-face-med.biomedcentral.com/articles/10.1186/s13005-021-00261-7

https://www.researchgate.net/publication/322260342_Trigeminal_Nerve_Blocks_and_Neurolysis

https://www.researchgate.net/publication/376469522_Nerve_Blocks_Utilized_in_The_Face_A_Comprehensive_Review

↑ *Back to this question in Part A*

Q5: A 40-year-old female is scheduled for endoscopic surgery involving the middle turbinate and frontal recess due to chronic sinusitis. Which of the following nerve blocks is preferred for providing analgesia during this surgery? (Q846726)

A. Maxillary nerve block

B. Anterior ethmoidal block

C. Infraorbital nerve block

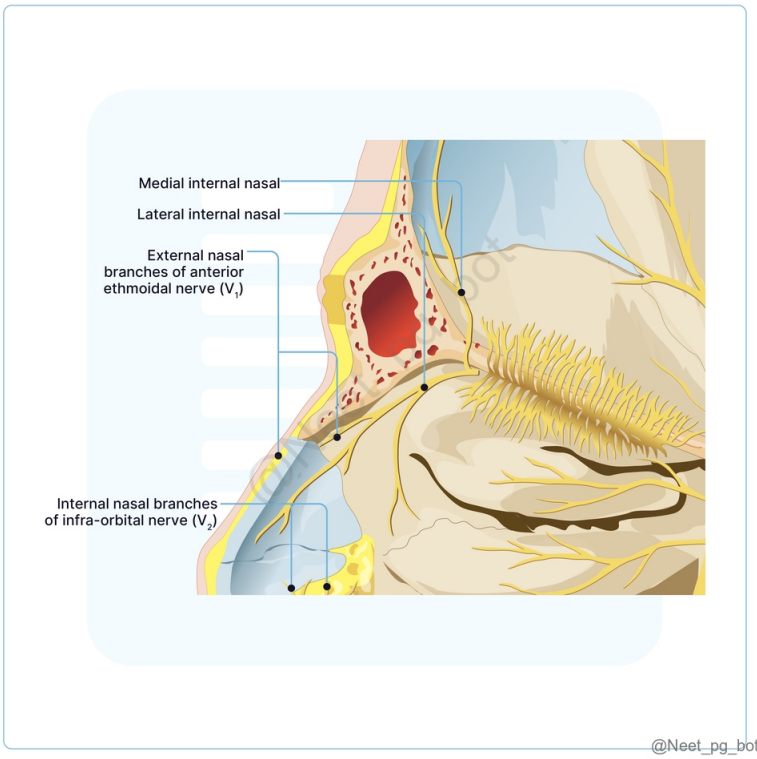
D. Sphenopalatine ganglion block

Correct Answer: B. Anterior ethmoidal block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Anterior ethmoidal block is specifically indicated for providing analgesia during surgeries involving the middle turbinate and frontal recess. Anterior Ethmoidal Nerve Block: The anterior ethmoidal nerve is a branch of the ophthalmic nerve. It has internal and external nasal branches that innervate: Anterior part of the septum. Lateral wall of the nasal cavity. Nasal bone. Skin to the tip of the nose. It is located medially from the halfway point between the posterior palpebral fold and the eyebrow, at a depth of 1.5 cm. Technique Injection Site: Lateral nasal wall, anterior to the root of the middle turbinate. Needle insertion 9 mm superior to the superior border of the medial canthal tendon to prevent injury to the lacrimal sac. Maxillary nerve block (Option A) provides anesthesia primarily to the hemi-maxilla and is suited for dental procedures, not nasal cavity interventions. Infraorbital nerve block (Option C) primarily anesthetizes the anterior part of the maxilla, making it suitable for dental and cosmetic procedures but not effectively targeting the nasal cavity or surrounding structures. Sphenopalatine ganglion block (Option D) is used in the treatment of acute migraine headaches, acute cluster headaches, and facial neuralgias, rather than providing analgesia for nasal structures.



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References:

https://www.ncbi.nlm.nih.gov/books/NBK574554/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9741691/

https://nepjol.info/index.php/JUCMS/article/view/34091/27033

https://www.sciencedirect.com/topics/veterinary-science-and-veterinary-medicine/anterior-ethmoidal-nerve

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4606598/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7829263/

https://www.ncbi.nlm.nih.gov/books/NBK499881/

https://www.sciencedirect.com/topics/medicine-and-dentistry/sphenopalatine-ganglion-block

↑ *Back to this question in Part A*

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Q6: Match the following: 1. Supraclavicular block A. Blocks the superior and middle trunk of the brachial plexus. 2. Interscalene block B. Block terminal nerves. 3. Infraclavicular block C. Blocks distal trunk-proximal division of the brachial plexus. 4. Axillary block D. Blocks at the level of cords of the brachial plexus. (Q846728)

A. 1A, 2D, 3C, 4B

B. 1C, 2A, 3D, 4B

C. 1C, 2A, 3B, 4D

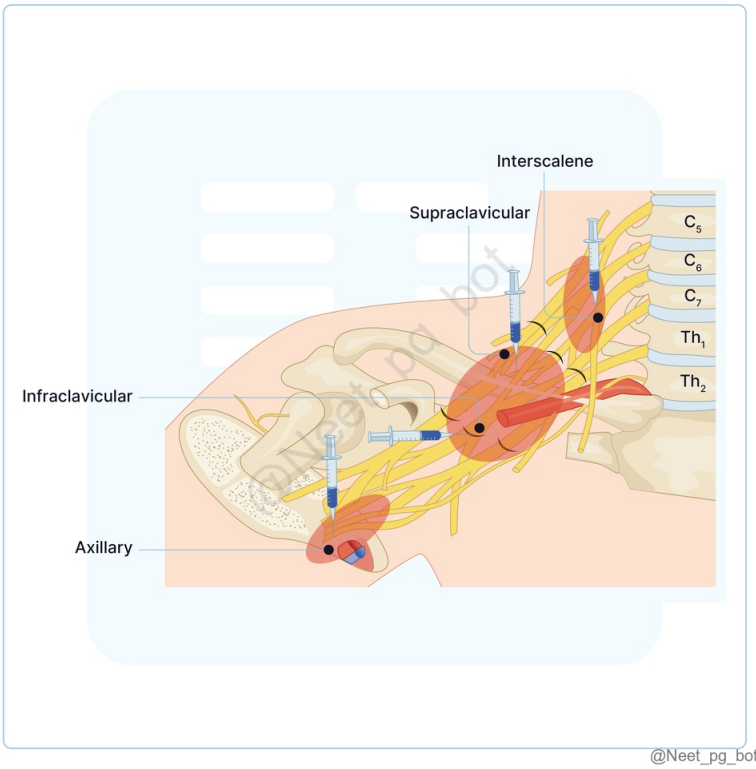
D. 1B, 2C, 3A, 4D

Correct Answer: B. 1C, 2A, 3D, 4B

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Brachial Blocks Supraclavicular block Blocks the distal trunk-proximal division of the brachial plexus. For surgeries distal to the mid-humerus. Interscalene block Blocks the superior and middle trunk of the brachial plexus. For shoulder and proximal humerus surgeries. Most of the brachial plexus, sparing the Ulnar (C8-T1) nerve. Infraclavicular block Blocks at the level of cords of the brachial plexus. For surgeries distal to the mid-humerus. Axillary block Block terminal nerves. For surgeries distal to the mid-humerus.



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References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 1018,1019

Miller's Anesthesia, 9th Edition, Pg: 1458,1459,1461

https://www.ncbi.nlm.nih.gov/books/NBK519491/#

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3119420/

↑ *Back to this question in Part A*

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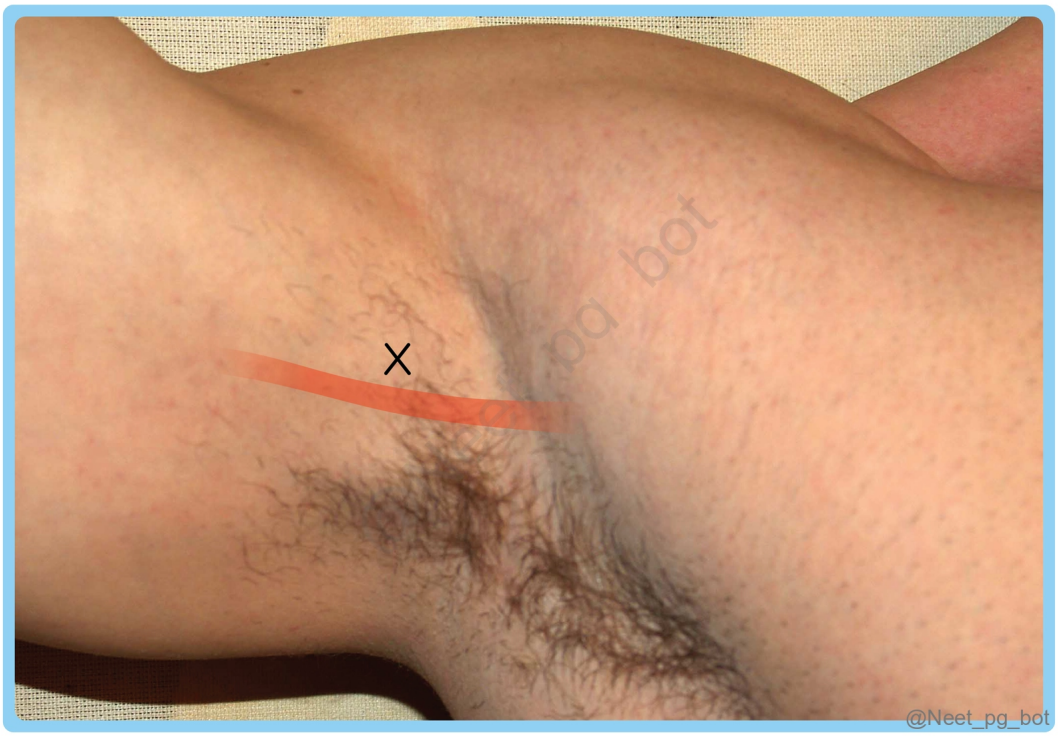
Q7: A 60-year-old patient is scheduled for forearm surgery. The anesthesiologist seeks to provide an effective brachial plexus block approach with the least risk of pneumothorax and uses the block as shown below. Identify the type of brachial plexus block approach depicted in the image? (Q846729)

A. Interscalene block

B. Infraclavicular block

C. Supraclavicular block

D. Axillary block

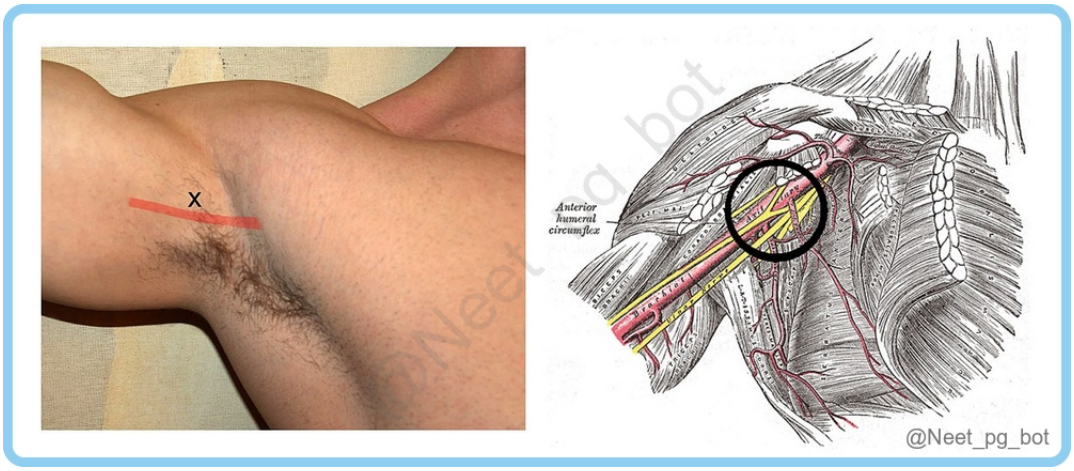


Correct Answer: D. Axillary block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The anesthesiologist chooses the axillary block as it primarily targets the terminal nerves and has a lower risk of serious complications compared to other approaches. This method provides greater safety, especially when using ultrasound techniques to guide the placement. Axillary Block Anatomical Target: Block terminal nerves. Indications: Upper extremity procedures. Complication: Local infection Neuropathy Bleeding risk Least risk of causing a pneumothorax.



References:

Morgan & Mikhail’s Clinical Anesthesiology, 7th Edition, Pg: 1018,1019

Miller’s Anesthesia, 9th Edition, Pg: 1459,1461,1462,1463

Barash, Cullen, And Stoelting’s Clinical Anesthesia, 9th Edition, Chapter: Peripheral Nerve Blockade

https://www.ncbi.nlm.nih.gov/books/NBK470213/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6813469/#

↑ *Back to this question in Part A*

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Q8: A 45-year-old woman suffers from severe chronic pain in the upper extremities that has not been relieved with pain medications. She doesn't want to keep taking medications and wants a permanent solution. A stellate ganglion block is advised as the treatment modality. Which of the following is false about this method? (Q846730)

A. The procedure carries a risk of pneumothorax

B. Used for the treatment of PTSD and severe menopausal vasomotor symptoms

C. A successful procedure is noted by the onset of Horner’s syndrome

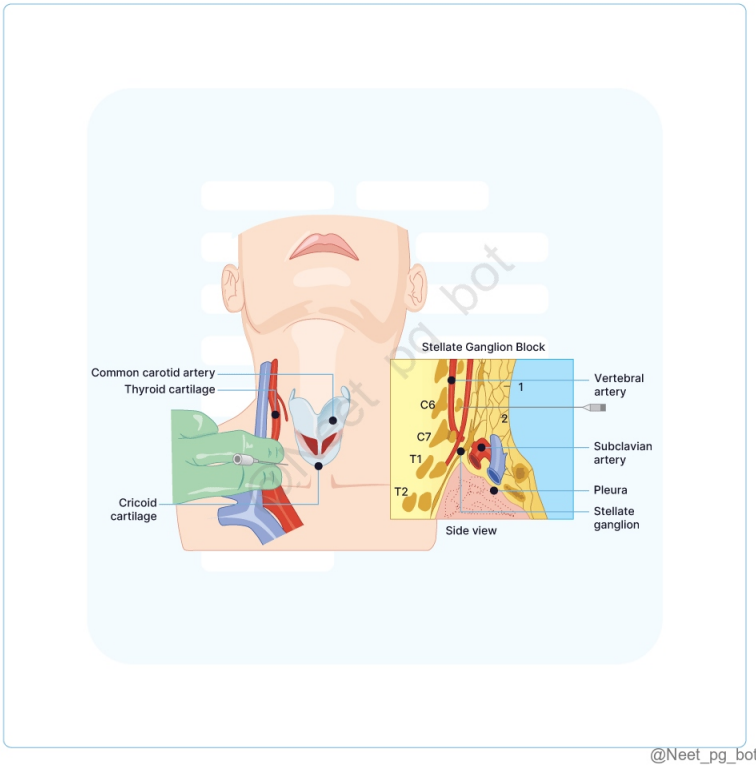
D. C7 vertebra is preferred over C6 vertebra as the injection site

Correct Answer: D. C7 vertebra is preferred over C6 vertebra as the injection site

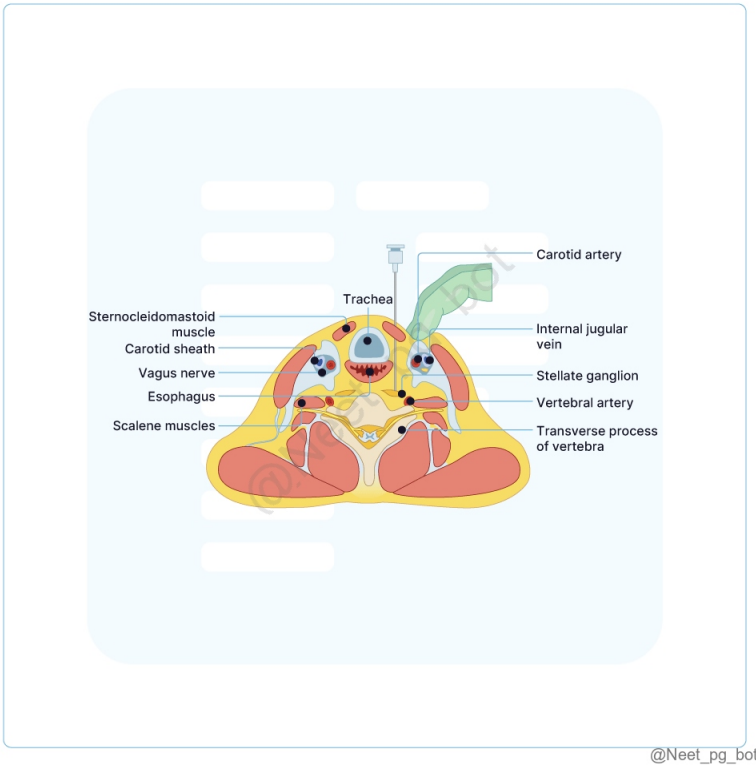
■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: In a stellate ganglion block, the C6 vertebra is the more preferred location than the C7 because, at the former location, there is a reduced possibility of injuring the vertebral artery than at the latter. Location: Stellate ganglion is located at the level of C6 transverse proces s (Chassaignac tubercle) or C7 (3-5 cm above the clavicle)



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References:

Morgan & Mikhail’s Clinical Anesthesiology, 7th Edition, Pg:2063, 2064, 2065.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5018589/

↑ *Back to this question in Part A*

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Q9: Which of the following statements is true regarding nerve blocks done at the elbow and wrist? (Q846735)

A. The median nerve is accessed lateral to the brachial artery

B. The ulnar artery is seen at the medial side of the ulnar nerve in the wrist

C. Radial nerve is approached from a posterior aspect of the elbow

D. Ulnar nerve can be blocked at the antecubital fossa

Correct Answer: C. Radial nerve is approached from a posterior aspect of the elbow

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The radial nerve is approached from the posterior aspect of the elbow to achieve a nerve block. Nerve Location Median Nerve Antecubital fossa: medial to the brachial artery (Option A) Mid-forearm: medial to radial artery Ulnar Nerve Above elbow: several cm proximal At wrist: near medial side of ulnar artery (Option B) Avoid cubital tunnel (Option D) Radial Nerve Posterior to the humerus, the lateral side of the elbow Can block at the posterior aspect of the elbow

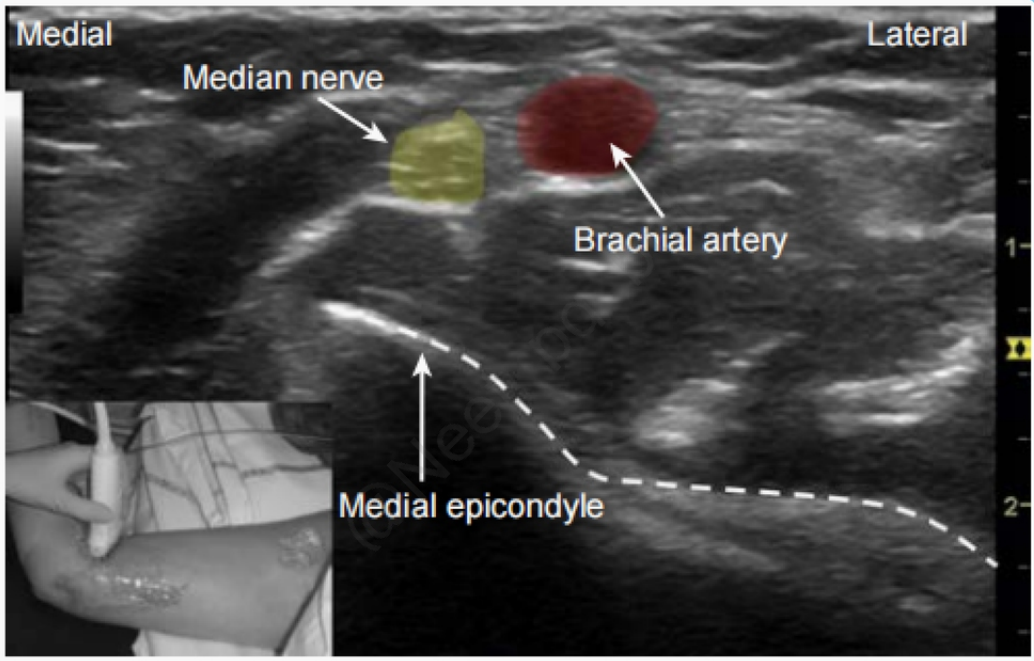


Fig. 76.25 Ultrasound view of median nerve at the elbow level.

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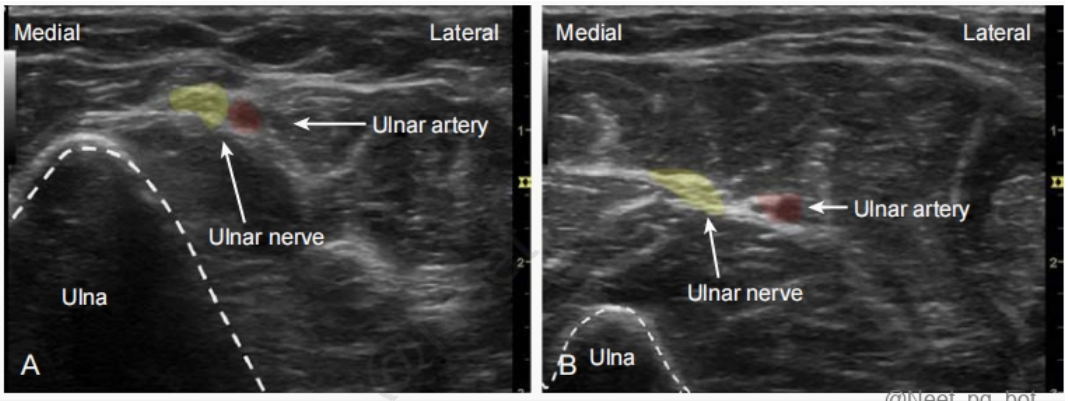


Fig. 76.28 Ultrasound view of ulnar nerve at the wrist (A) and at midforearm level (B).

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References:

Miller's Anesthesia, 9th Edition, Pg: 2396, 2397

↑ *Back to this question in Part A*

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Q10: A patient is being evaluated and prepared to undergo a mastectomy. Which regional nerve block would be the best choice? (Q846736)

A. Rectus sheath block

B. Paravertebral block

C. Transversus abdominis plane block

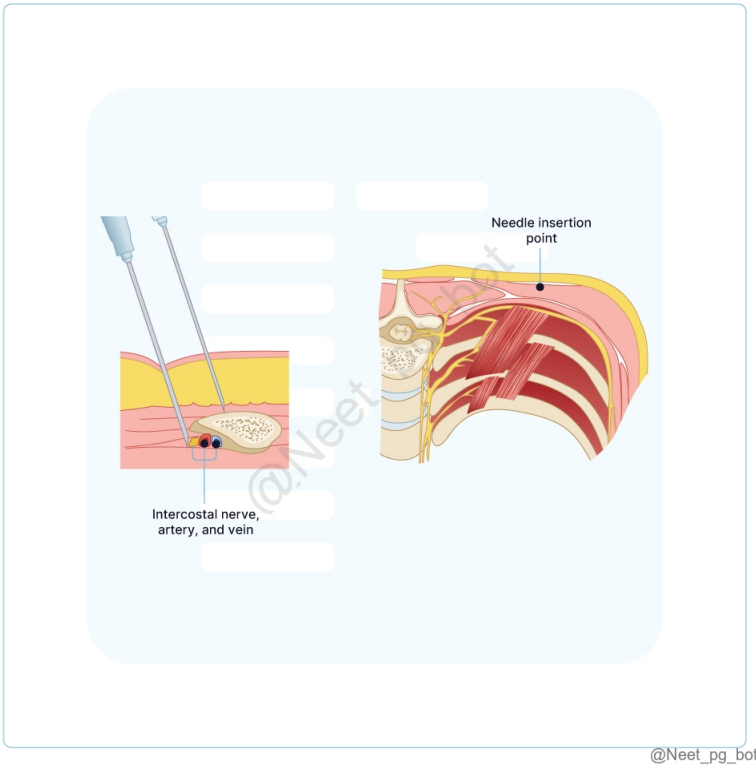
D. Intercostal block

Correct Answer: B. Paravertebral block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The paravertebral block is preferred in surgeries like mastectomy and nephrectomy that need a great amount of analgesia. Block Type Indications Intercostal Block (Option D) Thoracic/upper abdominal surgery, rib fractures Transversus Abdominis Plane Block (Option C) Lower abdominal wall surgery Rectus Sheath Block (Option A) Superficial abdominal procedures



References:

Miller's Anesthesia, 9th edition, pg: 1463-1467, 2397, 2405

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg:1946-1963

↑ *Back to this question in Part A*

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Q11: A 34-year-old male patient presents with dyspnea and pleuritic chest pain. A chest X-ray confirms bilateral pleural effusion. The physician decides to perform a thoracentesis to drain the fluid. Which of the following nerve blocks is preferred to provide analgesia during the thoracentesis procedure? (Q846737)

A. Suprascapular nerve block

B. Intercostal nerve block

C. Interscalene block

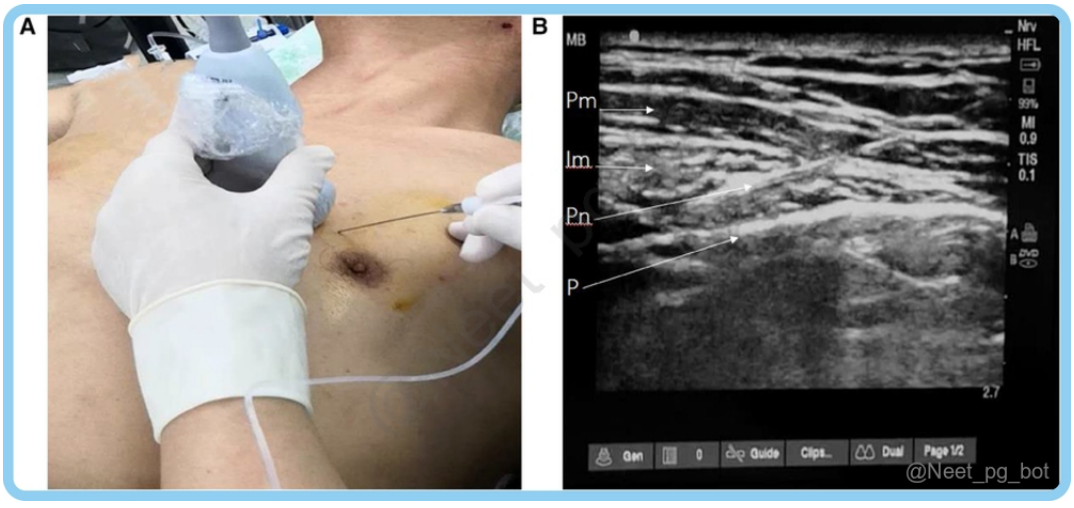
D. Thoracic sympathetic block

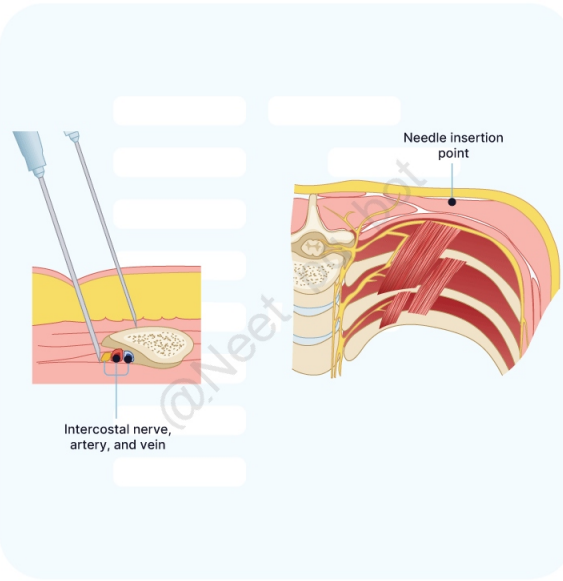
Correct Answer: B. Intercostal nerve block

■ *Listen (English)*

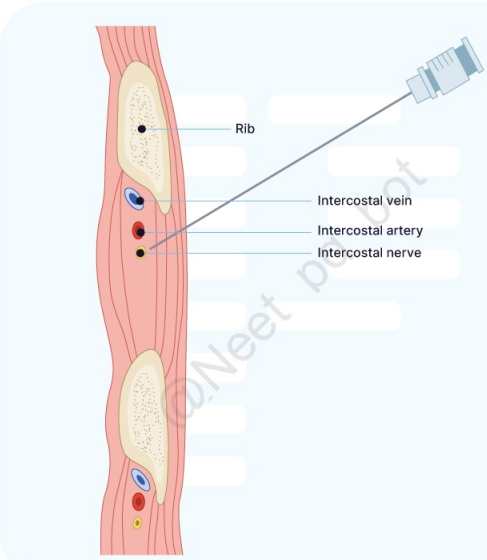
■ *Listen (Hindi)*

Explanation: Intercostal nerve block targets the intercostal nerves, which supply sensation to the chest wall, making it ideal for procedures involving the pleura or thoracic cavity. Indications of Intercostal Nerve Block: Provides analgesia following thoracic and upper abdominal surgery. Relieves pain associated with: Rib fractures, Herpes zoster, Cancer Procedure: Suprascapular nerve block (Option A) primarily targets shoulder-related pain rather than providing the necessary analgesia for procedures involving the thoracic wall and pleura, which the intercostal nerve block addresses more directly. Interscalene block (Option C) is not suitable for thoracentesis because it primarily targets the upper extremity, providing analgesia for shoulder and arm surgeries rather than addressing the chest wall and pleura directly. Thoracic sympathetic block (Option D) is not ideal for thoracentesis as it typically offers only temporary relief and is more suited for neuropathic pain management rather than procedural analgesia.





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References:

Miller’s Anesthesia, 9th Edition, Pg: 1033

https://www.ncbi.nlm.nih.gov/books/NBK482273/#

https://www.ncbi.nlm.nih.gov/books/NBK580556/

https://www.ncbi.nlm.nih.gov/books/NBK519491/

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4904596/#

↑ *Back to this question in Part A*

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Q12: A 45-year-old male is scheduled for an elective inguinal hernia repair. The anesthesiologist decides to perform a Transversus Abdominis Plane (TAP) block to provide effective analgesia during and after the procedure. Which of the following nerves is not blocked by the TAP block? (Q846738)

A. Subcostal nerve

B. Ilioinguinal nerve

C. Genitofemoral nerve

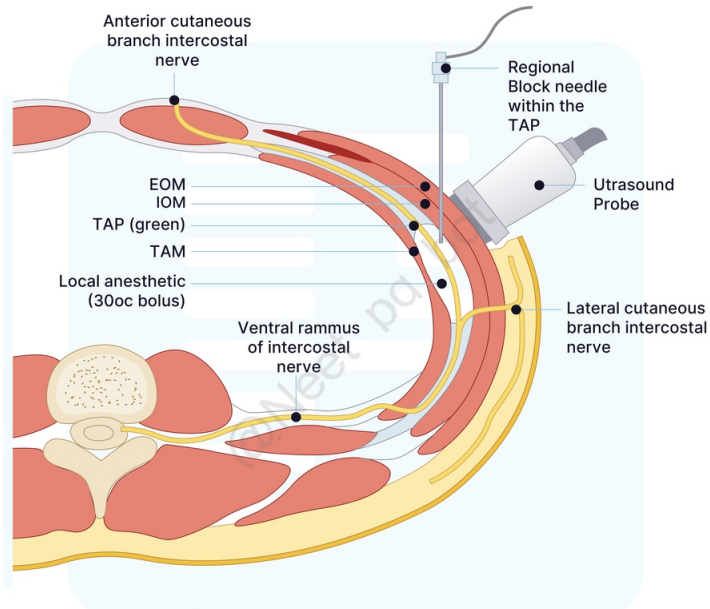
D. Iliohypogastric nerve

Correct Answer: C. Genitofemoral nerve

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Transversus abdominis plane block (TAP) does not target the genitofemoral nerve , which supplies the genital area and upper thigh. Nerves Targeted by Transversus Abdominis Plane Block (TAP): Subcostal nerve (T12) (Option A) Ilioinguinal nerve (L1) (Option B) Iliohypogastric nerve (L1) (Option D) Indication: Used for surgical anesthesia during minor, superficial procedures on the lower abdominal wall. Provides postoperative analgesia for procedures below the umbilicus. For inguinal hernia surgeries, intravenous or local supplementation may be needed for anesthesia during peritoneal traction.



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References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 1465

Miller's Anesthesia, 9th Edition, Pg: 1063,1064

https://www.ncbi.nlm.nih.gov/books/NBK430733/#

↑ *Back to this question in Part A*

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Q13: A 60-year-old patient with pancreatic cancer is in severe pain and hence is advised for celiac plexus block. Which of the following complications be rarely seen in this procedure? (Q846739)

A. Postural hypotension

B. Back pain

C. Systemic local toxicity

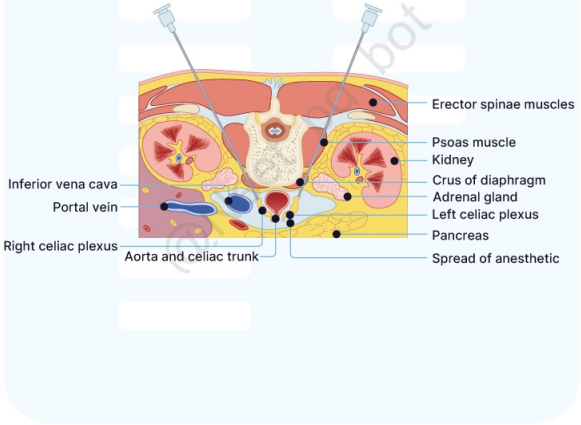
D. Sexual dysfunction

Correct Answer: C. Systemic local toxicity

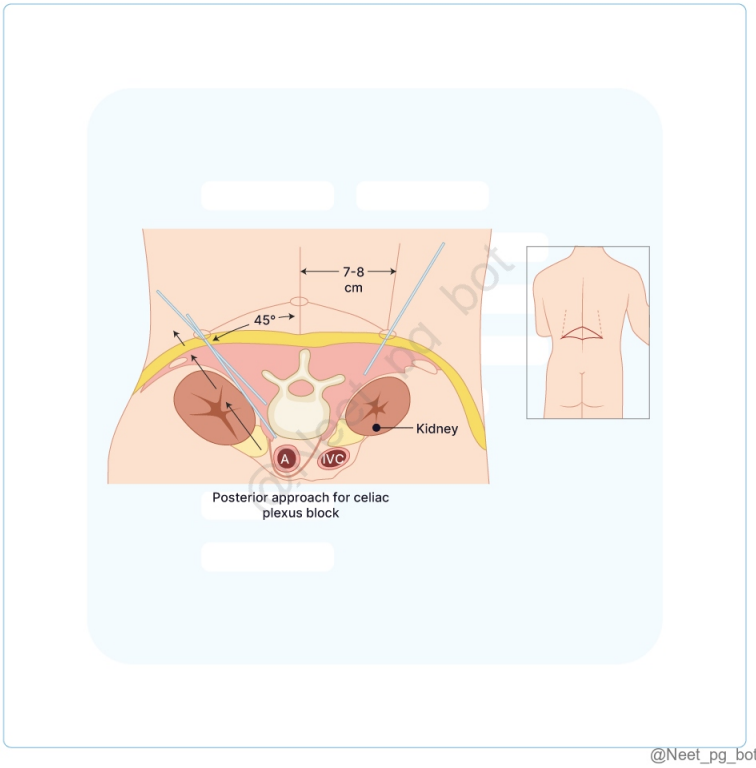
■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Systemic local toxicity is not seen as a complication of celiac plexus block as it is seen as a complication in intercostal nerve block that is done for postoperative analgesia and as an alternative to epidural and paravertebral blocks . Complications of Celiac plexus block Postural hypotension (Option A) Accidental intravascular injection (risk of severe systemic reaction) Pneumothorax Retroperitoneal hemorrhage Injury to kidneys or pancreas Sexual dysfunction (Option D) Rarely, paraplegia (due to lumbar artery of Adamkiewicz injury) Increased gastrointestinal motility and diarrhea (due to unopposed parasympathetic activity) Back pain (Option B)



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References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 2066, 2067

Miller's Anesthesia, 9th edition, pg: 414

↑ *Back to this question in Part A*

@Neet_pg_bot

Q14: A 65-year-old patient is scheduled for a knee arthroscopy. The anesthesiologist plans to use regional anesthesia for postoperative analgesia. Which block should the anesthesiologist consider for effective postoperative pain relief in this procedure? (Q846740)

A. Popliteal nerve block

B. Femoral nerve block

C. Obturator nerve block

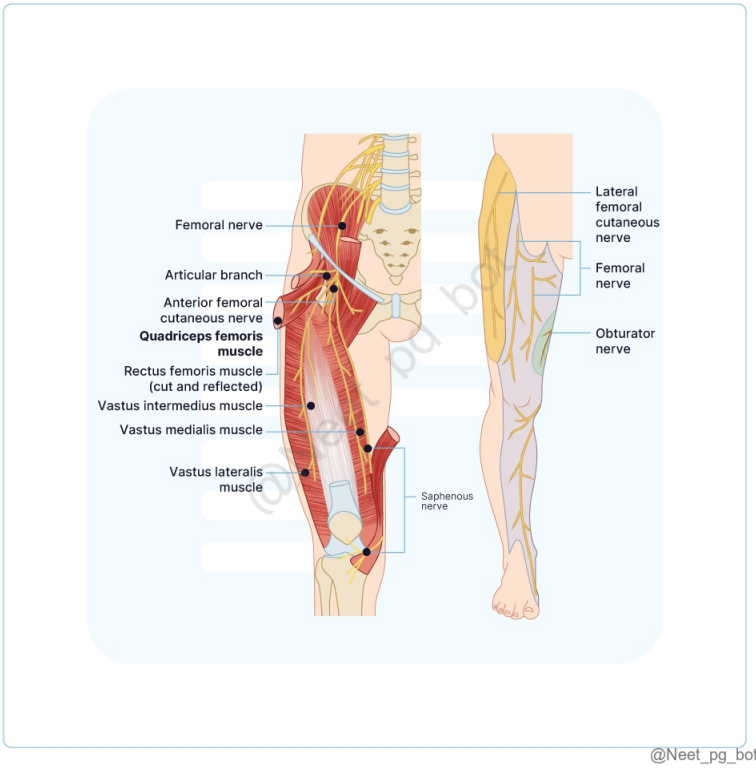
D. Lateral femoral cutaneous nerve block

Correct Answer: B. Femoral nerve block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Femoral nerve block is highly effective for postoperative analgesia in knee arthroscopy, as it provides pain relief for procedures involving the hip, thigh, knee, and ankle, even though it is insufficient for surgical anesthesia on its own. Uses of Femoral Nerve Block Femoral nerve block alone is insufficient for surgical anesthesia but highly effective for postoperative analgesia. (Option B) Commonly used for procedures involving the hip, thigh, knee, and ankle (via saphenous nerve). Lateral Femoral Cutaneous Nerve Block (Option D): Can be used as a supplement to a femoral nerve block or as an isolated block for anesthesia of the lateral thigh. Obturator Nerve Block (Option C) : The Obturator nerve provides sensory branches to the hip and knee joints, variable sensation to the medial thigh, and motor innervation to the adductors of the hip. Popliteal nerve block (Option A) : Popliteal nerve blocks provide excellent coverage for foot and ankle surgery.



References:

Morgan & Mikhail’s Clinical Anesthesiology, 7th Edition, Pg: 1034-1040

Barash, Cullen, And Stoelting’s Clinical Anesthesia, 9th Edition, Chapter: Peripheral Nerve Blockade

↑ *Back to this question in Part A*

@Neet_pg_bot

Q15: A 70-year-old patient is scheduled for hip replacement surgery. Which nerve block should the anesthesiologist select to provide effective anesthesia for this procedure? (Q846742)

A. Lumbar plexus block

B. Sacral plexus block

C. Sciatic nerve block

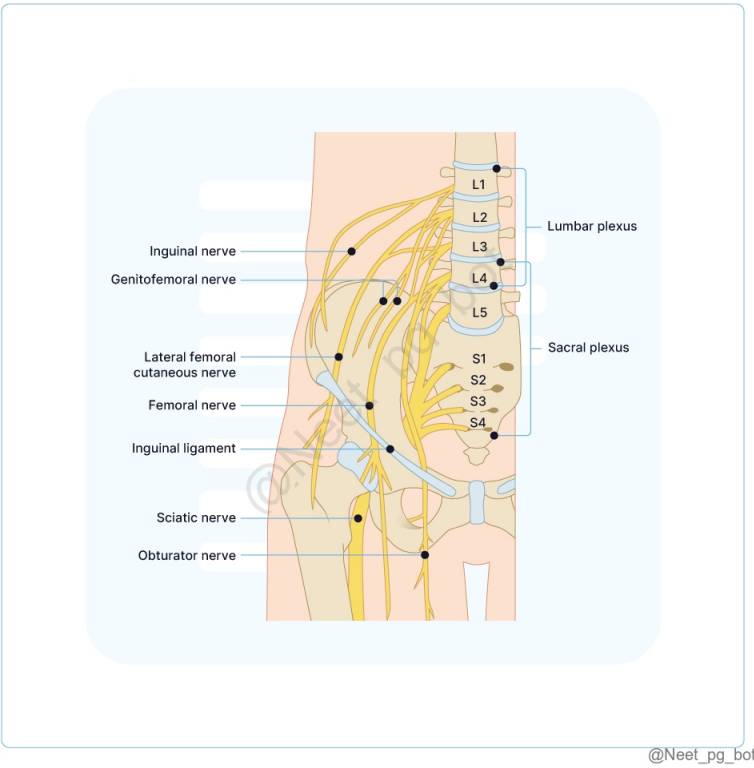
D. Ilioinguinal nerve block

Correct Answer: A. Lumbar plexus block

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Lumbar plexus block is effective for providing analgesia in procedures involving the hip. Posterior Lumbar Plexus (Psoas Compartment) Block: Useful for surgeries involving areas innervated by the femoral, lateral femoral cutaneous, and obturator nerves. Includes procedures on the hip, knee, and anterior thigh. Complete anesthesia of the knee can be achieved when combined with a proximal sciatic nerve block. Has one of the highest complication rates among peripheral nerve blocks. Sacral Plexus Block and Sciatic nerve block (Option B & C): Supplies motor and sensory innervation to the posterior thigh, and most of the leg and foot. Ilioinguinal nerve block (Option D): The Ilioinguinal nerve primarily provides sensory innervation to the proximal, medial thigh and is used for analgesia following inguinal hernia repair and for lower abdominal procedures.



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References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 1043

Miller's Anesthesia, 9th Edition, Pg: 1466,2397,2402

https://www.ncbi.nlm.nih.gov/books/NBK545137/

↑ *Back to this question in Part A*

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Q16: A 50-year-old woman is scheduled for foot surgery to remove a neuroma. The anesthesiologist performs an ankle block and aims to provide sensation to the dorsum of the foot, excluding the first interdigital cleft. Which nerve should be blocked? (Q846744)

A. Sural nerve

B. Tibial nerve

C. Deep peroneal nerve

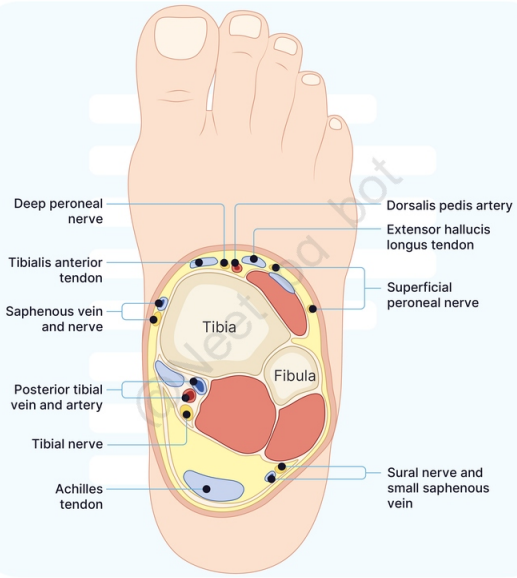
D. Superficial peroneal nerve

Correct Answer: D. Superficial peroneal nerve

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Superficial peroneal nerve innervates the dorsum of the foot, excluding the first interdigital cleft. This makes it ideal for covering the desired sensory area during the procedure. Procedure: A complete ankle block requires five injections to target all the nerves involved. Nerve Blocked Effect Tibial nerve (Option B) Anesthetizes the heel, the plantar portion of the toes, and the sole. Sural nerve (Option A) Anesthetizes the lateral foot and lateral aspect of the proximal sole. Deep peroneal nerve (Option C) Anesthetizes the skin between the first and second toes and the short toe extensors. Superficial peroneal nerve (Option D) Anesthetizes dorsum of the foot (excluding the first interdigital cleft). Saphenous nerve Anesthetizes the medial foot.

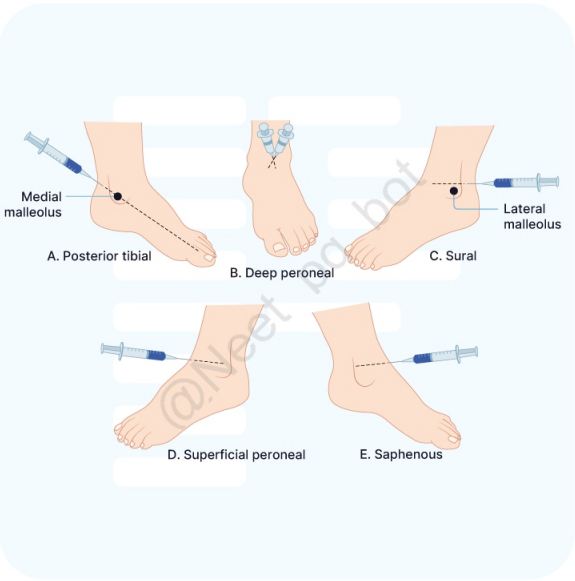


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Cutaneous distribution of anesthesia produced by an ankle block.

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References:

Morgan & Mikhail's Clinical Anesthesiology, 7th Edition, Pg: 1049-1053

Miller's Anesthesia, 9th Edition, Pg: 1472

↑ *Back to this question in Part A*

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• [17_Miscellaneous] 029 Oxygen Delivering Systems - I

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[17_Miscellaneous] 029 Oxygen Delivering Systems - I — Quick Jump

Q1 (p. 724)	*Q2 (p. 725)*	*Q3 (p. 727)*	*Q4 (p. 729)*	*Q5 (p. 732)*	*Q6 (p. 733)*
Q7 (p. 734)	*Q8 (p. 736)*	*Q9 (p. 739)*	*Q10 (p. 740)*	*Q11 (p. 742)*	*Q12 (p. 749)*
Q13 (p. 751)	*Q14 (p. 754)*	*Q15 (p. 755)*	*Q16 (p. 757)*	*Q17 (p. 759)*	*Q18 (p. 762)*
Q19 (p. 765)					

Q1: A 60-year-old male patient undergoes general anaesthesia for abdominal surgery. After intubation, the anesthesiologist needs to confirm that the endotracheal tube (ETT) is correctly placed in the trachea. Which of the following is considered the most reliable method for confirming correct ETT placement? (Q846761)

A. Auscultation of bilateral breath sounds

B. Visual condensation in the endotracheal tube

C. Waveform capnography

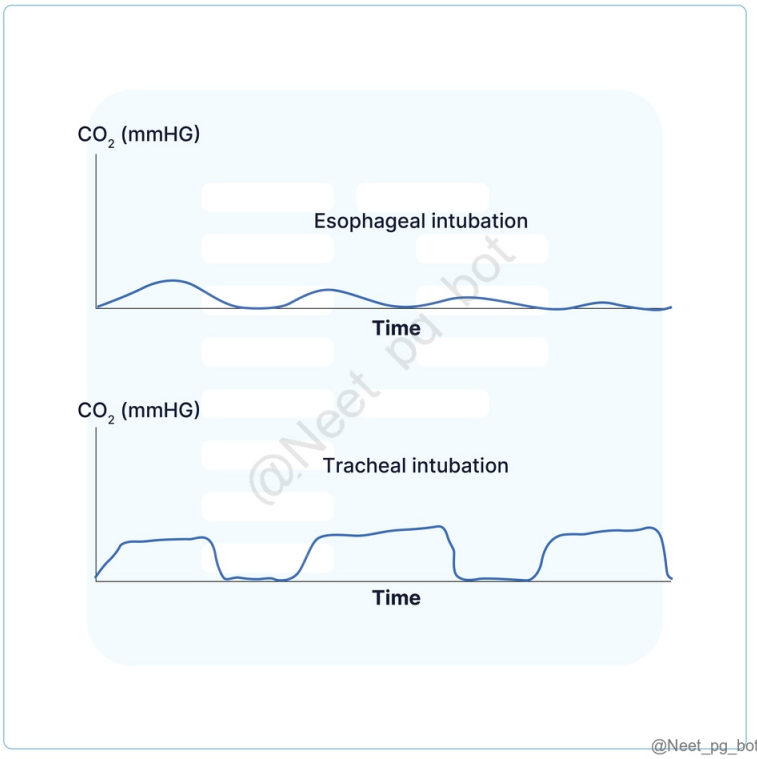
D. Symmetrical chest rise

Correct Answer: C. Waveform capnography

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: Waveform capnography is the most reliable method for confirming endotracheal tube placement. It provides continuous real-time monitoring of end-tidal CO 2 , and the presence of a characteristic waveform over multiple breaths confirms tracheal intubation. Signs of correct endotracheal tube placement Detection of end-tidal CO 2 by waveform capnography (most reliable sign) Symmetrical chest rise (Option D) Auscultation of bilateral breath sounds (Option A) Absence of breath sounds in the epigastrium Visible condensation in the endotracheal tube (Option B) Large exhales of tidal volume



References:

Miller’s Anesthesia, 9th edition, Pages 1397,1398

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 604

↑ *Back to this question in Part A*

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Q2: A 70-year-old COPD patient with a history of COPD presents with type 2 respiratory failure and a SpO 2 of 86%. ABG results are normal. Which oxygen delivery device will be most appropriate for this patient? (Q846770)

A. Nasal Prongs

B. Venturi Mask

C. Intubation

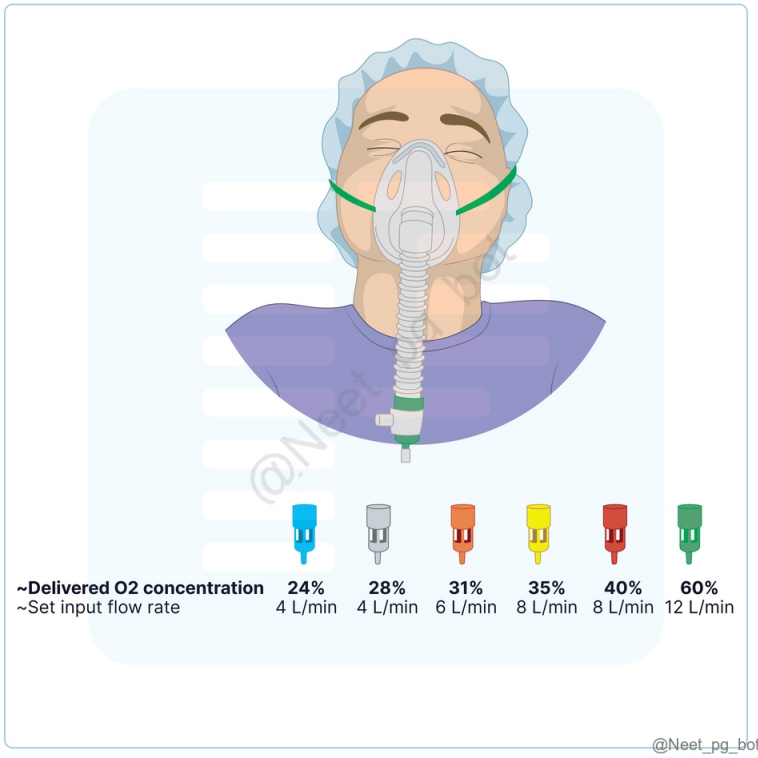
D. Non-Rebreathing Mask (NRBM)

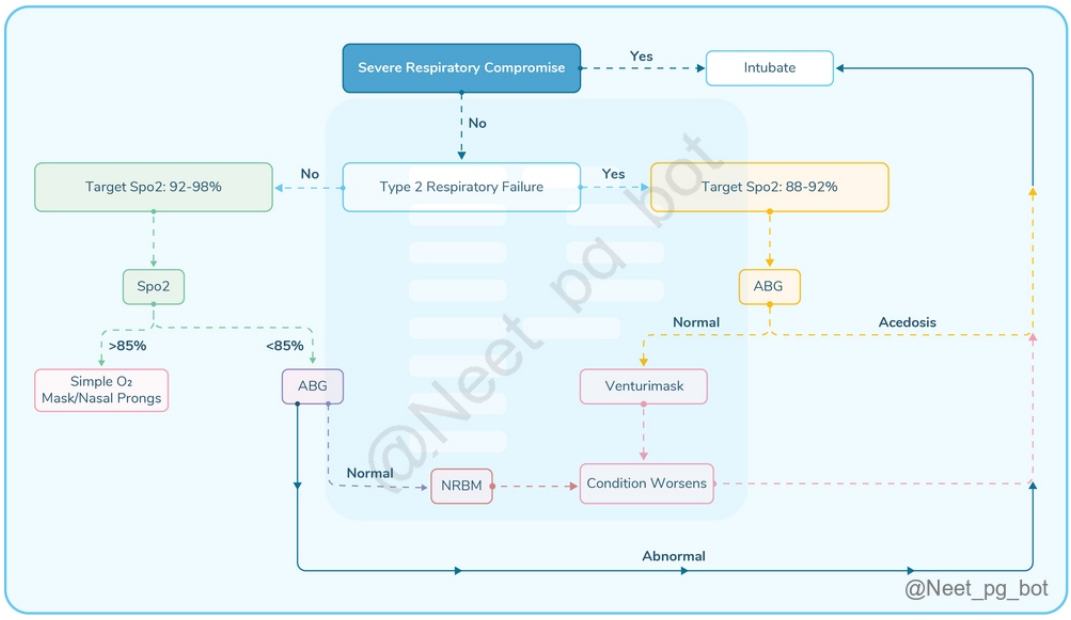
Correct Answer: B. Venturi Mask

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The Venturi mask is the most appropriate oxygen delivery device for COPD patients with type 2 respiratory failure, as it is a fixed-performance high-flow device. It provides a precise concentration of oxygen (FiO2), preventing over-oxygenation and minimising the risk of hypercapnia by allowing titration to maintain target SpO2 levels (usually 88-92%). If the ABG results were abnormal or if the patient's respiratory status was severely compromised, intubation (Option C) would be indicated. Nasal prongs (Option A) and Non-rebreathing masks (Option D) are low-flow devices and are not suitable for managing type 2 respiratory failure. Criteria for selection of Oxygen Delivery System:





References:

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 2507 to 2515

https://www.ncbi.nlm.nih.gov/books/NBK551617/

Davidson's Principles and Practice of Medicine, 24th edition, page 565, 566.

↑ *Back to this question in Part A*

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Q3: A 4-year-old patient with respiratory distress is initiated on High-flow Nasal Cannula (HFNC). Which of the following statements is incorrect regarding HFNC? (Q846769)

A. Provides warmed and humidified gas to the airway.

B. It can generate low levels of positive airway pressure.

C. Limits the maximum FiO 2 to 60%.

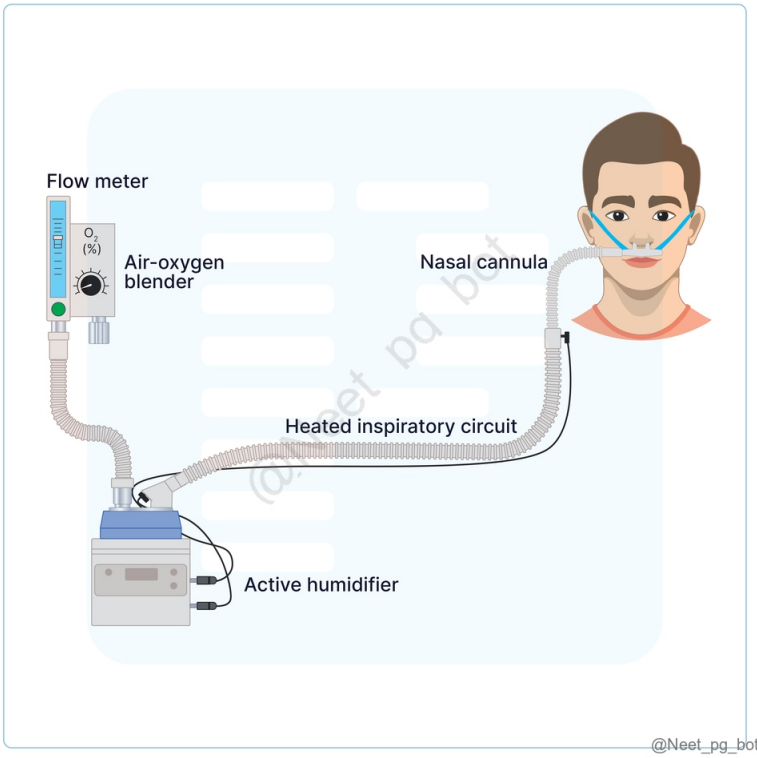
D. Improved mortality rate in COVID patients

Correct Answer: C. Limits the maximum FiO 2 to 60%.

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: A High-Flow Nasal Cannula (HFNC) can deliver FiO 2 levels of up to 100%, not limited to 60%. High-Flow Nasal Cannula (HFNC) / High-Flow Humidified Nasal Cannula (HFHNC): It works by delivering warmed & humidified gas (Option A) , preventing nasal mucosa drying and overcoming the limitations of traditional cannulas. Generates positive airway pressures of over 5 cm H2O, making it a potential substitute for low-level CPAP (Continuous Positive Airway Pressure). (Option B). Can deliver 100% FiO 2 (Option C) Improved mortality rates in patients experiencing acute hypoxemic respiratory failure due to Sepsis and SARS-CoV-2 infection. (Option D)





References:

Miller’s Anesthesia, 9th Edition, Pages - 2543,2554

Barash Clinical Anesthesiology, 9th Edition, Page - 4841

Equipment in Anaesthesia and Critical Care, Page - 36

Davidson’s Principles and Practice of Medicine, 24th edition, page 202

https://www.ncbi.nlm.nih.gov/books/NBK526071/

↑ *Back to this question in Part A*

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Q4: A 72-year-old female presents to the emergency department in severe respiratory distress, with an oxygen saturation of 78% on room air, tachypnea, and altered consciousness. She has a 3-day history of fever and cough, suggesting community-acquired pneumonia. What is the most appropriate intervention for ensuring adequate oxygenation? (Q846768)

Correct Answer: Unknown

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The above image depicts a high-flow nasal cannula (HFNC) , which delivers inspired gas with a set concentration of oxygen (FiO■) at flow rates of 40 to 60 L/min . This high-flow device is effective for ensuring adequate oxygenation and is commonly used in conditions such as pneumonia, COPD, respiratory failure, post-operative care, and COVID-19. Type of mask Nasal Prong Face Mask NRBM Flow rate 1 to 6 L 6 to 10 L 10 to 15 L FiO2 25 to 45% 35 to 60% 65 to 95 %







References:

Miller’s Anesthesia, 9th edition, Page 2595

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 2507 to 2515

↑ *Back to this question in Part A*

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Q5: A 52-year-old male patient is brought to the emergency department after a motor vehicle accident. He is unconscious with an inadequate airway and requires immediate management. Which of the following is the most appropriate method for determining the correct size of the airway as shown in the image below? (Q846767)

A. Angle of the mouth to the tragus

B. Angle of the mouth to the suprasternal notch

C. Tip of the nose to the suprasternal notch

D. Tip of the nose to the tragus



Correct Answer: D. Tip of the nose to the tragus

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image depicts a Nasopharyngeal airway , used to prevent back-falling of the tongue, especially in unconscious patients. Size is calculated by the distance between the tip of the nose and the tragus



References:

Miller’s Anesthesia, 9th edition, Pages 1645

↑ *Back to this question in Part A*

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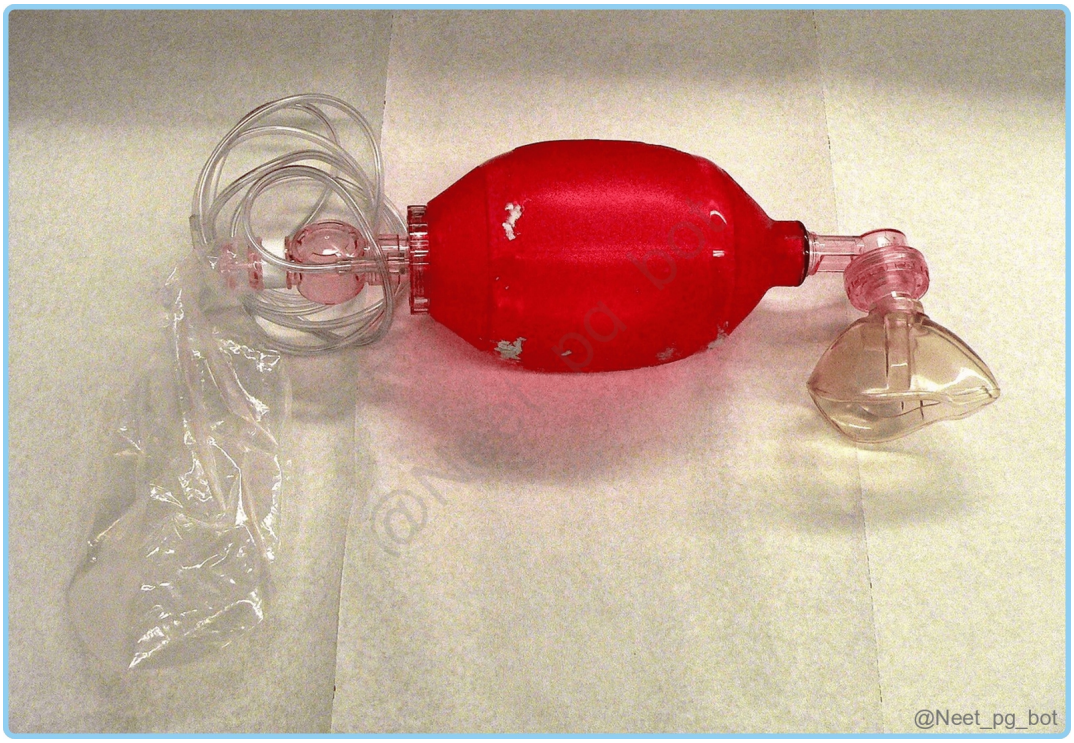
Q6: An intern in the ICU witnesses a patient suddenly become breathless and collapse, prompting a code blue. After resuscitation, the senior doctor asks the intern about the significance of the equipment shown in the image. Which of the following is NOT a significance of this equipment? (Q846766)

A. Convenient for patient transport

B. Suitable for CPR

C. Can be used during ventilator failure.

D. Can deliver high-flow supplemental oxygen



Correct Answer: D. Can deliver high-flow supplemental oxygen

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image depicts an Ambu bag or Bag mask ventilation , which is used during CPR, patient transport, and also as an emergency backup during ventilatory failure. It is designed to provide assisted ventilation, not to deliver high-flow oxygen directly like a non-rebreather mask or high-flow nasal cannula. Advantages of Bag mask ventilation: Compressible reservoir automatically expands upon release. Ubiquitous for patient transport (Option A) . Suitable for CPR (cardiopulmonary resuscitation) (Option B) Can be utilized as emergency back-up (anesthesia machine, ventilator or oxygen supply failure). (Option C)

References:

Miller's Anesthesia, 9th edition, Pages 614, 615. Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 99, 100.

↑ *Back to this question in Part A*

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Q7: A 70-year-old patient with a history of COPD and chronic smoking arrived at the emergency department in a semi-conscious state, showing an oxygen saturation of 78% on room air. Resuscitation efforts were initiated right away. What is the function of the component depicted in the image below? (Q846765)

A. Deliver breaths to the patient

B. Prevents over-inflation of lungs

C. Provides additional oxygen supply

D. Prevents rebreathing



Correct Answer: D. Prevents rebreathing

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The image illustrates the unidirectional valve/ fishmouth valve/ Ruben’s valve found in an Ambu bag , which prevents rebreathing. Ambu Bag (or) Bag mask ventilation: Parts Function Reservoir bag (self-inflating) Provides additional oxygen supply (Option C ruled out) One way valve (Fish mouth or unidirectional or Ruben’s valve) Prevents rebreathing (prevents exhaled air from re-entering the bag) Pressure valve Prevents over-inflation of the lungs (Option B ruled out) Ventilation bag Deliver breaths to the patient, providing ventilation (Option A ruled out)



References:

Miller’s Anesthesia, 9th edition, Pages 615, 615. Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 99, 100.

↑ *Back to this question in Part A*

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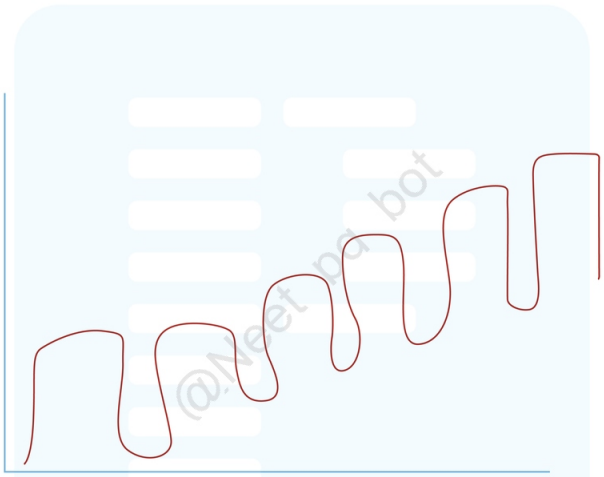
Q8: A 30-year-old female scheduled for laparoscopic cholecystectomy under general anesthesia experiences a sudden increase in heart rate (130 bpm), rapidly rising end-tidal CO 2 levels, elevated body temperature, and severe muscle rigidity, especially in the extremities. Which of the following capnogram patterns is indicative of this condition? (Q846764)

Correct Answer: Unknown

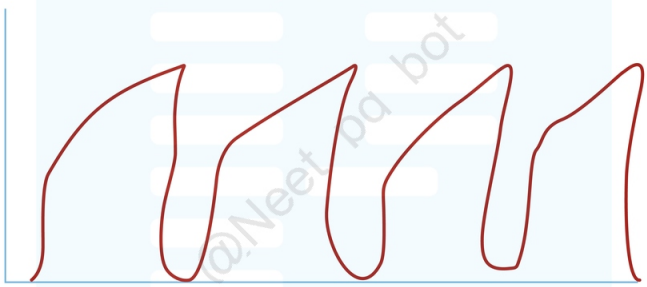
■ *Listen (English)*

■ *Listen (Hindi)*

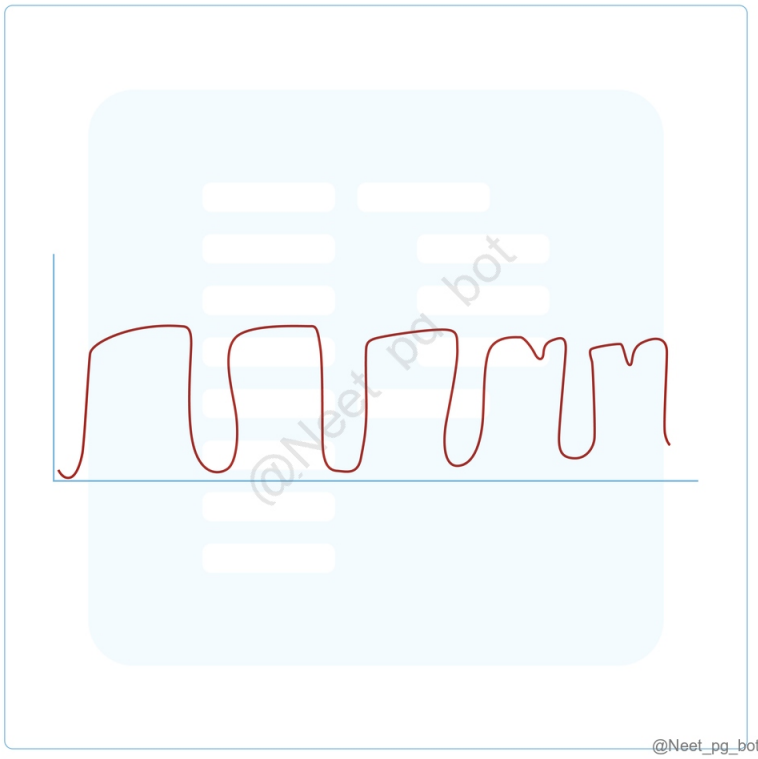
Explanation: The scenario describes a case of Malignant hyperthermia (MH), which is characterized by a step-ladder pattern (increased metabolic rate causes a marked rise in ETco2) on the capnogram. Capnogram pattern Description Seen in Shark fin pattern: Due to the increased upslope of phase III (Option A) Bronchospasm COPD Asthma Curare notch: clefts during Phase III. (Option C) Resumption of spontaneous breathing. (Next step: Muscle relaxation) Flat capnograph: ETCO2 range: zero (Option D) Esophageal intubation Cardiac arrest Tube displacement Disconnected circuit

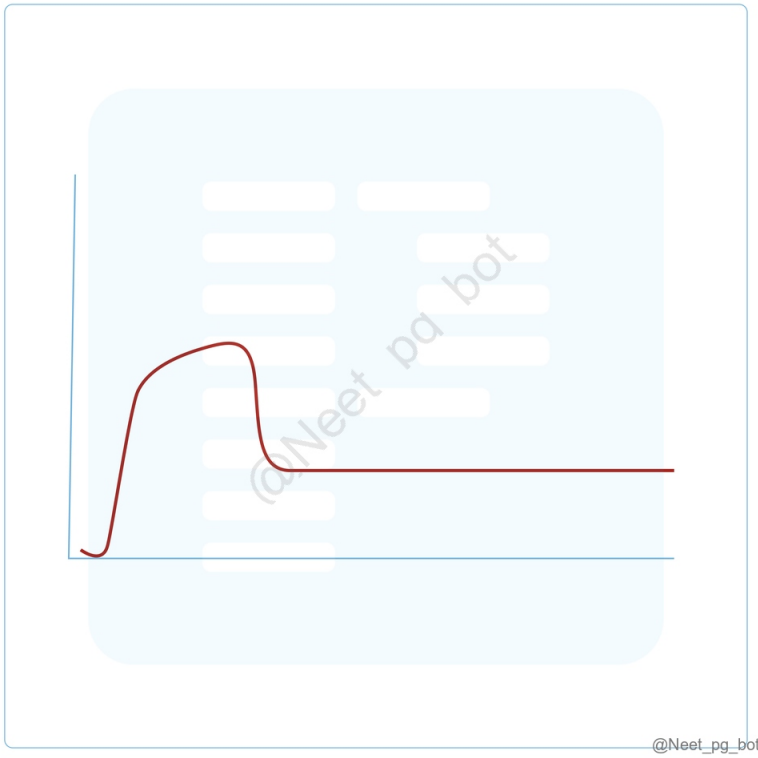


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References:

Miller’s Anesthesia, 9th edition, Page 1311

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Page 228

↑ *Back to this question in Part A*

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Q9: A 65-year-old woman with a history of chronic obstructive pulmonary disease (COPD) presents to the emergency department in respiratory distress. The healthcare team decides to utilise capnography to monitor her end-tidal carbon dioxide (EtCO■) levels as part of her assessment. Which of the following does EtCO■ NOT assess? (Q846763)

A. Ventilation-Perfusion (V/Q) matching

B. Estimate adequacy of cardiac output

C. BUN (blood urea nitrogen) determination

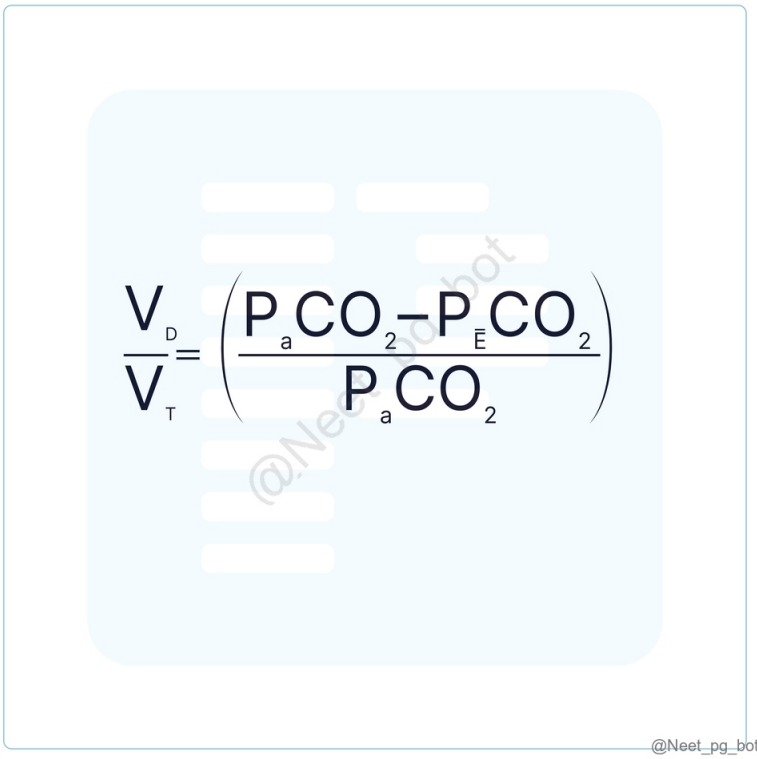
D. Chest compression effectiveness during CPR

Correct Answer: C. BUN (blood urea nitrogen) determination

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: BUN (blood urea nitrogen) is determined through a blood sample. Clinical significance of capnography: Confirmation of ET placement (Option D ruled out) CPR Assessment (adequacy of chest compressions) Ventilation-Perfusion (V/Q) matching (Option A ruled out) Estimate cardiac output adequacy (Option B ruled out) Early detection of respiratory depression before O2 desaturation The ratio of physiologic dead space (VD) to tidal volume (VT) by using the Bohr equation:



References:

Miller's Anesthesia, 9th edition, Pages 1308, 1309

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 226, 228

↑ *Back to this question in Part A*

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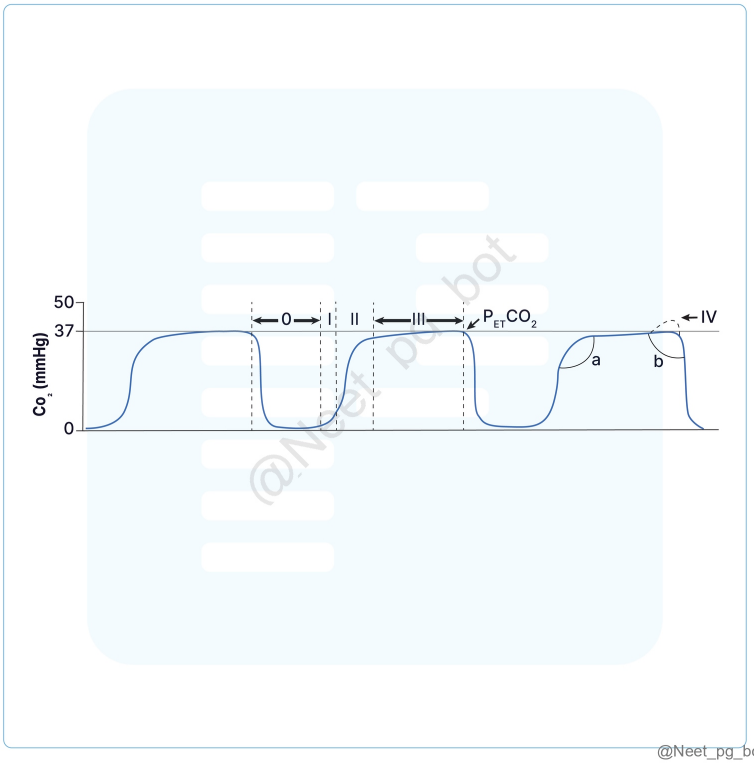
Q10: A 45-year-old patient is undergoing general anaesthesia for a laparoscopic cholecystectomy. The anesthesiologist is monitoring the patient's ventilation using capnography. The capnograph shows the following waveform. What does the plateau phases represent in the capnography waveform? (Q846762)

A. Expiration of air from alveoli

B. Expiration of air from the trachea

C. Expiration of air from bronchi

D. Exhalation of air from dead space

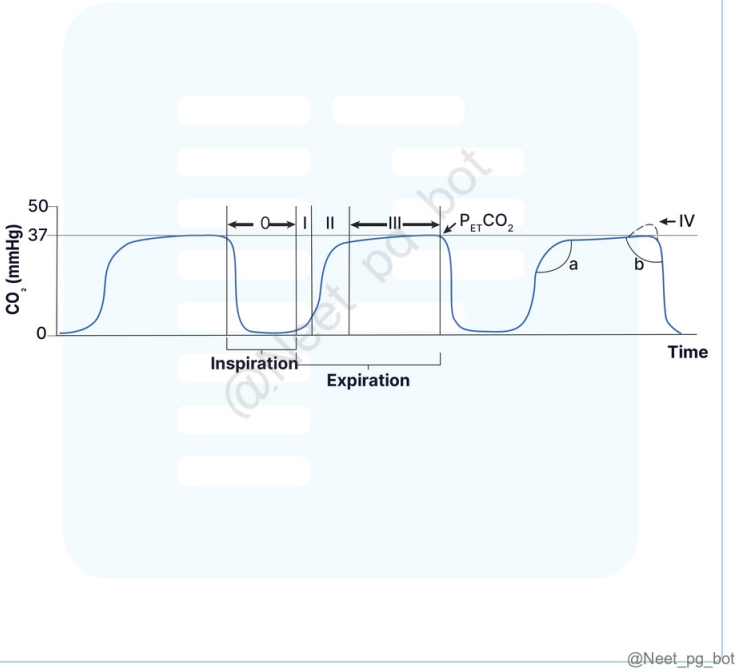


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Correct Answer: A. Expiration of air from alveoli

- *Listen (English)*
- *Listen (Hindi)*

Explanation: Phase Description Corresponds to Phase 0 Baseline Inspiration and end of expiration. Phase I Initial part of exhalation Exhalation of dead space gas. Phase II Transitional phase Exhalation of transitional gas between airways and alveoli. Phase III (Option A) Plateau phase Exhalation of alveolar CO2. Alpha Angle (α) Transition from Phase II to Phase III Change from mixed gas to alveolar CO2. Beta Angle (β) Transition from Phase III to Phase 0 End of exhalation and beginning of inspiration.



References:

Miller's Anesthesia, 9th edition, Page 1309

↑ *Back to this question in Part A*

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Q11: Match the following Laryngeal mask airways (LMA) with their corresponding images. i. Classic LMA a. ii. Proseal LMA b. iii. Fast Track LMA c. iv. Supreme LMA d. v. I-gel LMA e. (Q846752)

A. i-e, ii-d, iii-b, iv-a, v-c

B. i-c, ii-a, iii-d, iv-e, v-b

C. i-d, ii-b, iii-a, iv-e, v-c

D. i-b, ii-a, iii-e, iv-c, v-d


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3
i-gel


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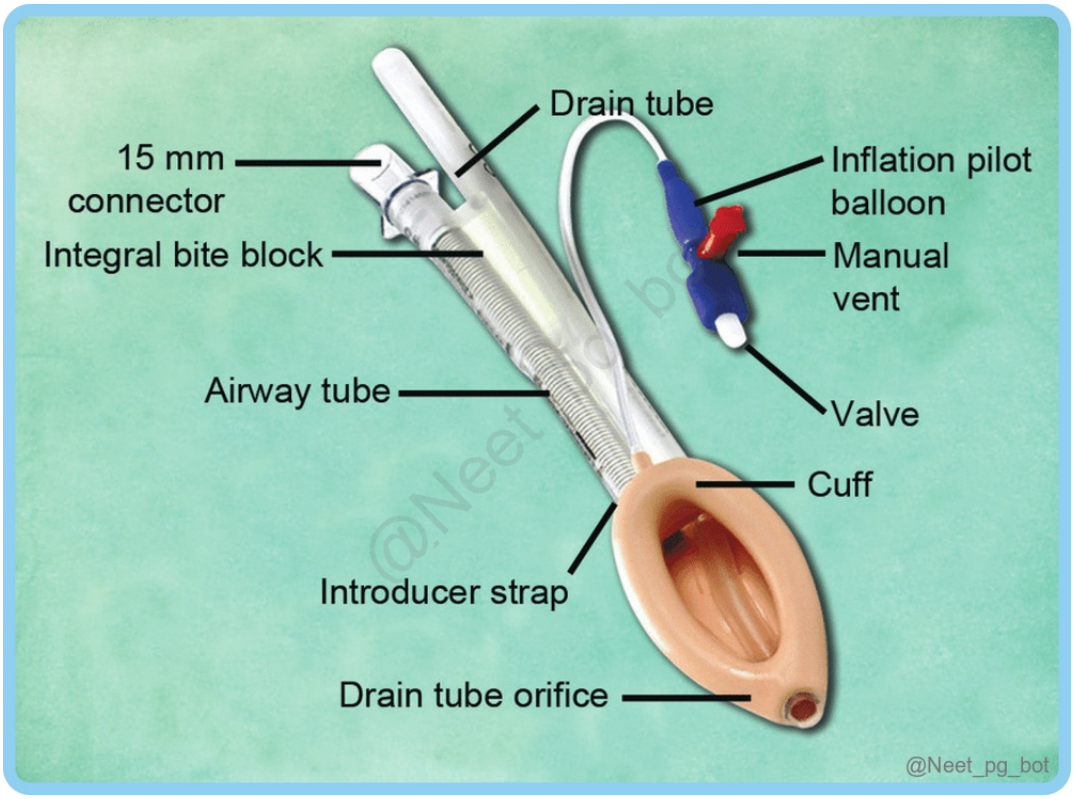


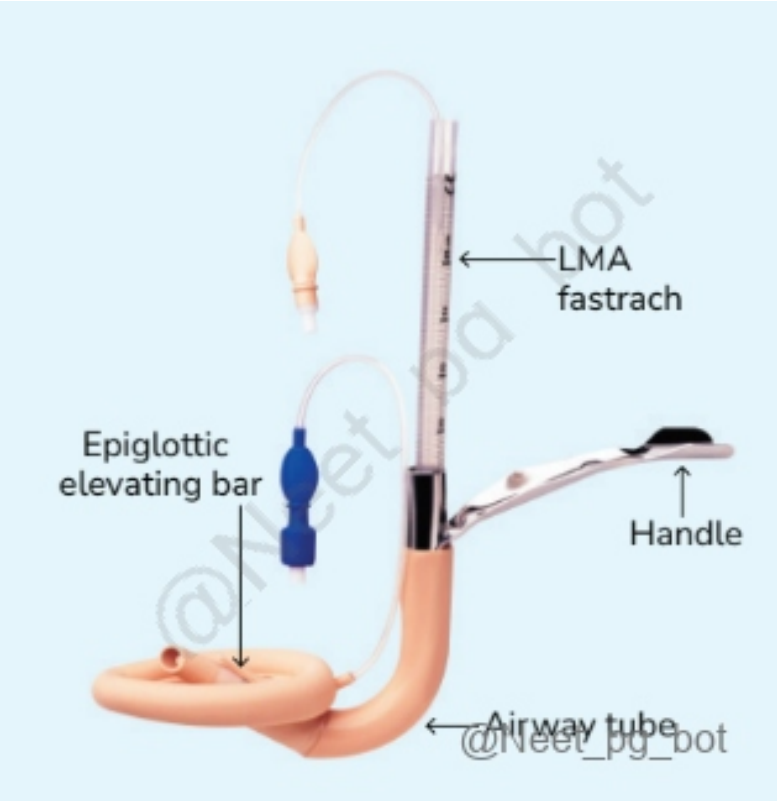
Correct Answer: B. i-c, ii-a, iii-d, iv-e, v-b

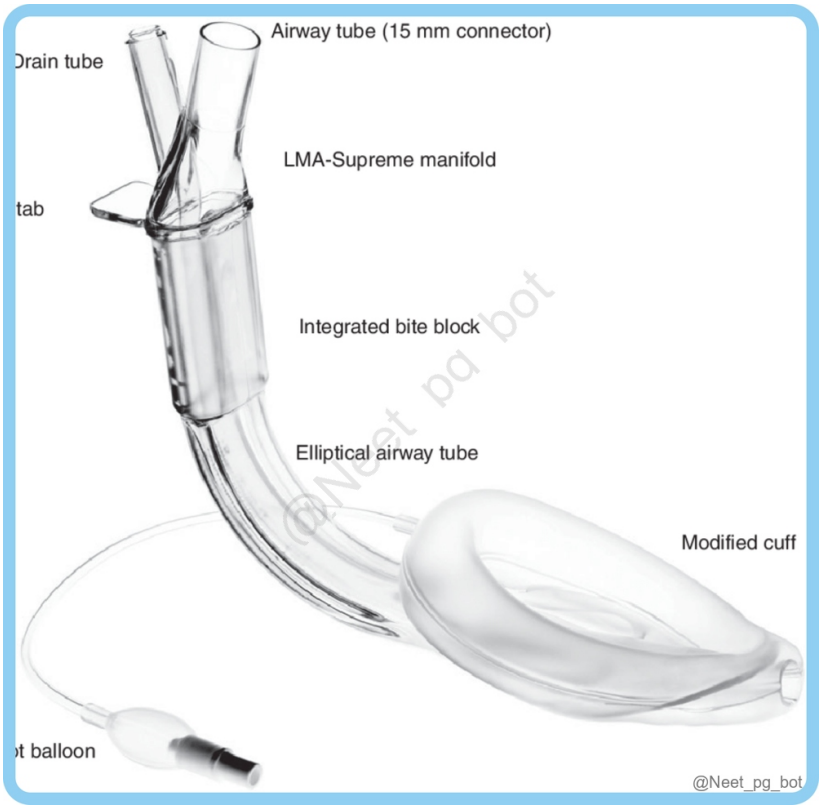
- *Listen (English)*
- *Listen (Hindi)*

Explanation: Laryngeal mask airways (LMAs) are classified as: First Generation Second Generation Classic LMA Flexometallic LMA unique Proseal LMA Supreme LMA I-gel LMA Types of LMA's: Type of LMA Description Classic LMA Forms a seal around the periglottic tissues. Has a risk of aspiration. Proseal LMA Bite Block : Protects the airway device from being bitten, maintaining airway patency. Fast Track or Intubating LMA Facilitate endotracheal intubation through the LMA device. Supreme LMA Used to prevent aspiration (as it contains a gastric drainage tube) I-gel LMA Prevent aspiration (gastric port) and Bite block. LMA unique Material: PVC (polyvinyl chloride)




Drain tube
15 mm connector
Inflation pilot balloon
Integral bite block
Manual vent
Airway tube
Valve
Cuff
Introducer strap
Drain tube orifice
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LMA
fastrach
Epiglottic
elevating bar
Handle
Airway tube
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Airway tube (15 mm connector)
Drain tube
LMA-Supreme manifold
tab
Integrated bite block
Elliptical airway tube
Modified cuff
t balloon
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References:

Miller’s Anesthesia, 9th edition, Pages 1389-1392.

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 586, 587.

↑ *Back to this question in Part A*

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Q12: What is the primary advantage of using the pre-formed endotracheal tube shown in the image below? (Q846760)

A. Enhanced visibility during intubation

B. Reduced risk of airway obstruction

C. Improved patient comfort during long procedures

D. Facilitated access to the surgical site in maxillofacial procedures



Correct Answer: D. Facilitated access to the surgical site in maxillofacial procedures

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: The given image depicts South Ring-Adair-Elwyn ET tubes , nasotracheal tubes designed to position the tube and breathing circuit out of the surgical field, allowing enhanced surgical access and reduced interference

with instruments. Uses: Oral and Maxillofacial Surgery : Minimizes surgical field interference. Pediatric Patients : Secures airway while facilitating positioning. Congenital or acquired facial Deformities : Reduces manipulation during intubation. Head or Neck Surgery : Ensures clear surgical access. Restricted Mouth Opening : Effective airway option with limited access. North Ring-Adair-Elwyn South Ring-Adair-Elwyn





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References:

Equipment in anaesthesia and critical care Pages 56,57.

↑ *Back to this question in Part A*

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Q13: A 36-year-old with a suspected cervical spine injury is brought to the emergency department in respiratory distress, requiring urgent intubation. Which of the following endotracheal tubes is preferred for this patient? (Q846759)

A. Armored endotracheal tube

B. Double-lumen endotracheal tube

C. Cuffed endotracheal tube

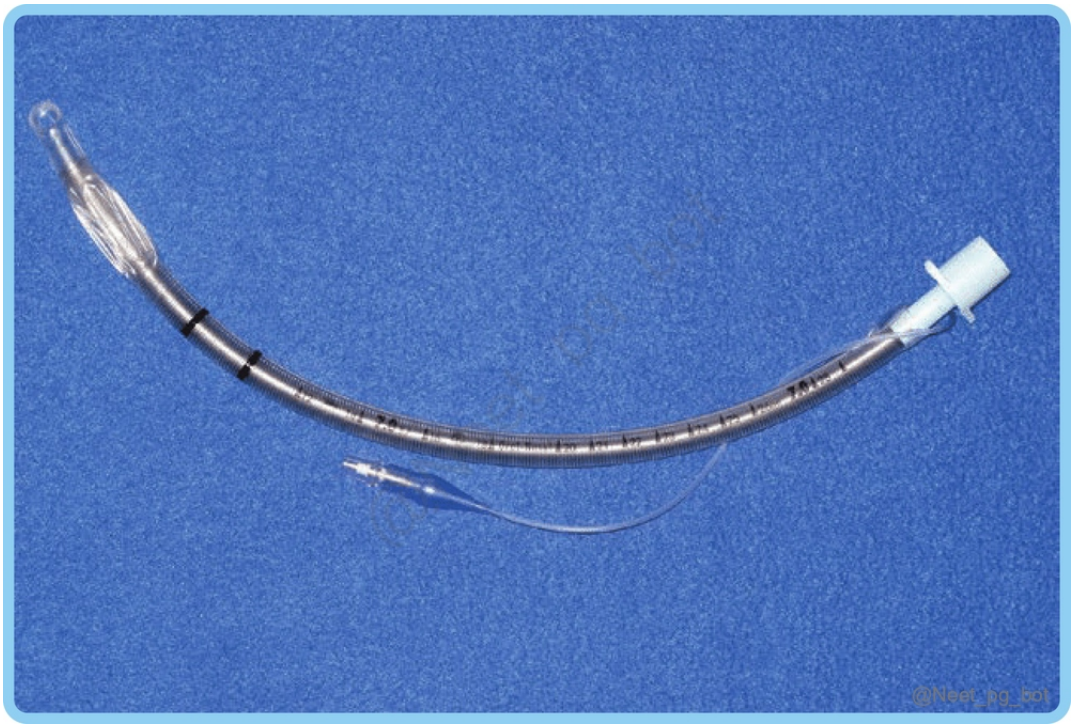
D. Uncuffed endotracheal tube

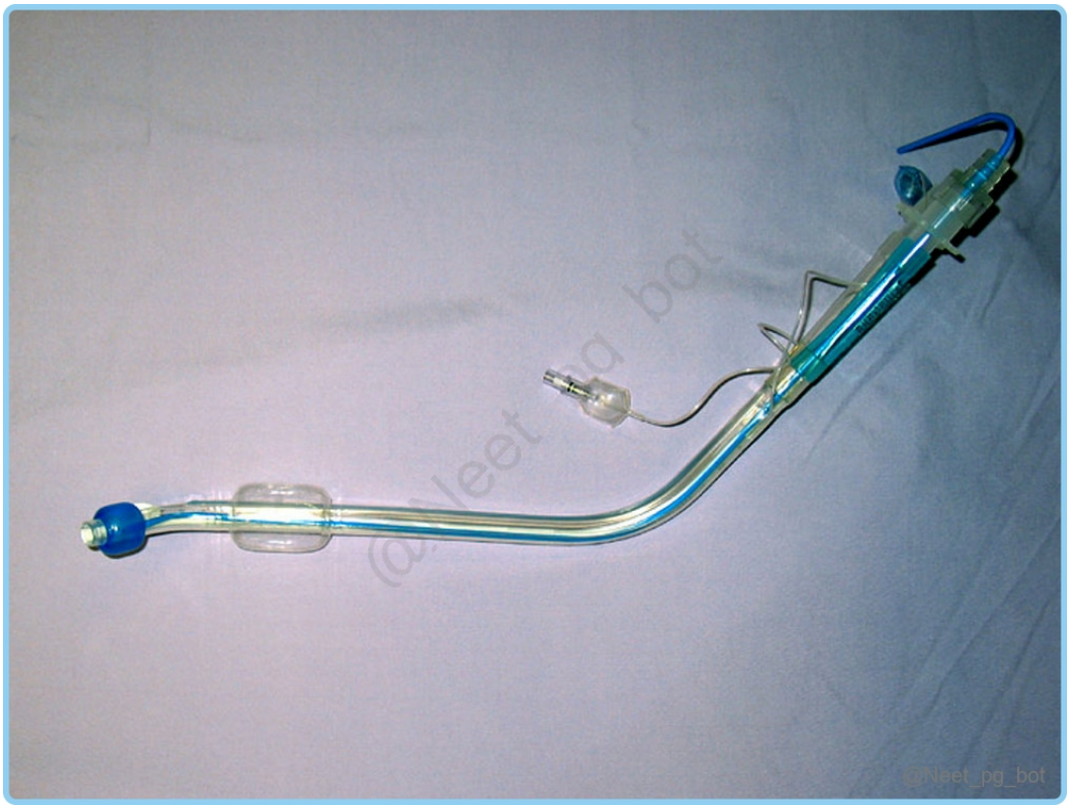
Correct Answer: A. Armored endotracheal tube

■ *Listen (English)*

■ *Listen (Hindi)*

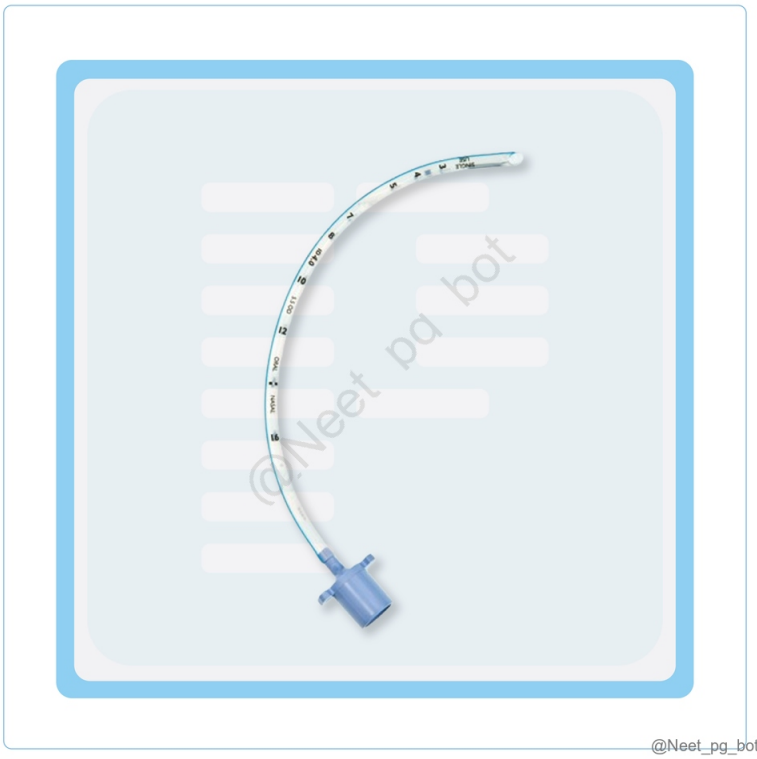
Explanation: In adult patients with suspected cervical spine injuries, armoured endotracheal tubes are preferred due to their spiral metal reinforcement, which resists kinking and provides greater flexibility. This design is particularly beneficial in patients requiring neck stabilisation, as it helps secure the airway while minimising the risk of further injury to the cervical spine. Hence are preferred for surgeries requiring a prone position, such as head, neck, and spine procedures. Double-lumen endotracheal tubes (Option B) are specialised tubes that allow single-lung ventilation. They are commonly used in thoracic surgeries like pneumonectomy, but they are not preferred in trauma due to their complexity and placement challenges. Cuffed endotracheal tubes (Option C) are the most commonly used ET tubes but may not offer the flexibility needed for cervical injury management. Uncuffed endotracheal tubes (Option D) are often used in pediatric patients because of concerns of necrosis caused by cuff pressure at the level of the cricoid cartilage.







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References:

Equipment in anaesthesia and critical care Pages 66,67,70,72 Miller's Anesthesia, 9th edition, Pages 1392,1393

↑ *Back to this question in Part A*

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Q14: A 4-year-old child is brought to the emergency department in Respiratory distress. What is the appropriate size of the endotracheal tube to intubate the child? (Q846758)

A. 4 mm

B. 5 mm

C. 7 mm

D. 10 mm

Correct Answer: B. 5 mm

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: For pediatric patients with an age of >1 year, the formula used to calculate the appropriate size of an uncuffed endotracheal tube (ETT) is: ETT size (mm) = Age (years)■/4 + 4 For a 4-year-old child: ETT size = 4(years)/4 + 4 = 5 mm The ETT size is described in terms of internal diameter: Age Internal Diameter length Term-Neonate 3 mm (uncuffed) 9 cm 1 Year Old 4 mm (uncuffed) 10 cm Child (>1 Year) Age/4 + 4 mm (uncuffed) Age/2 + 12 cm Adult > 7 mm 18-22 cm

References:

Miller's Anesthesia, 9th edition, Page 1392,1393 Equipment in anaesthesia and critical care Page 65, 66

↑ *Back to this question in Part A*

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Q15: A 55-year-old male is undergoing elective surgery under general anaesthesia. During laryngoscopy for intubation, the anesthesiologist visualised the airway, as shown in the image below. According to the Cormack-Lehane classification, what grade is assigned to this view? (Q846757)

A. Grade I

B. Grade II

C. Grade III

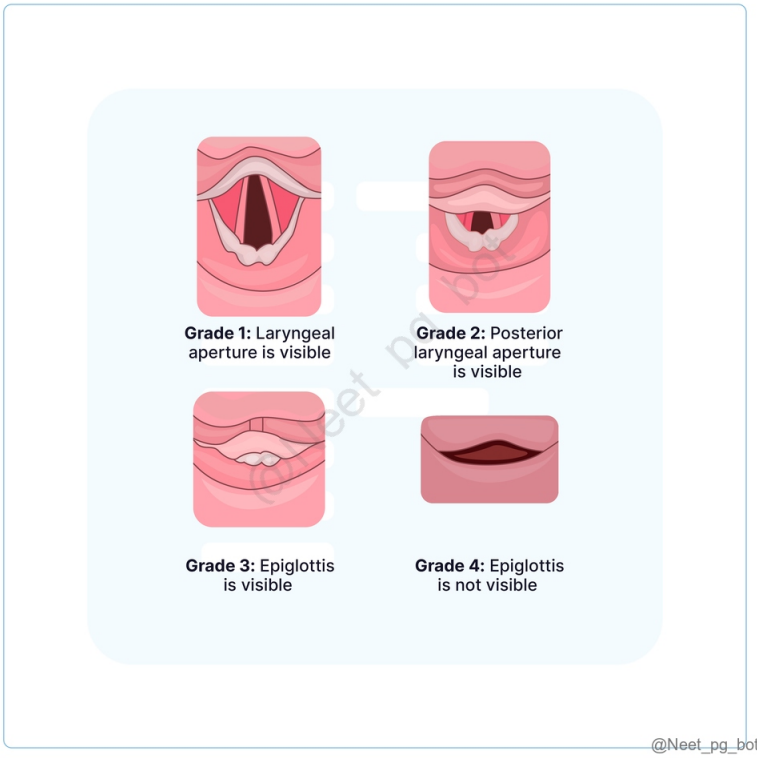
D. Grade IV



Correct Answer: B. Grade II

- *Listen (English)*
- *Listen (Hindi)*

Explanation: Cormack-Lehane grading system



References:

Miller's Anesthesia, 9th edition, Page 1397

↑ *Back to this question in Part A*

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Q16: A 50-year-old male presents with gallstones and is scheduled for a cholecystectomy. During the preoperative assessment, the anaesthetist notes the patient's airway, as visualised in the image below. According to the Mallampati classification, which class does this fall into? (Q846756)

A. Class I

B. Class II

C. Class III

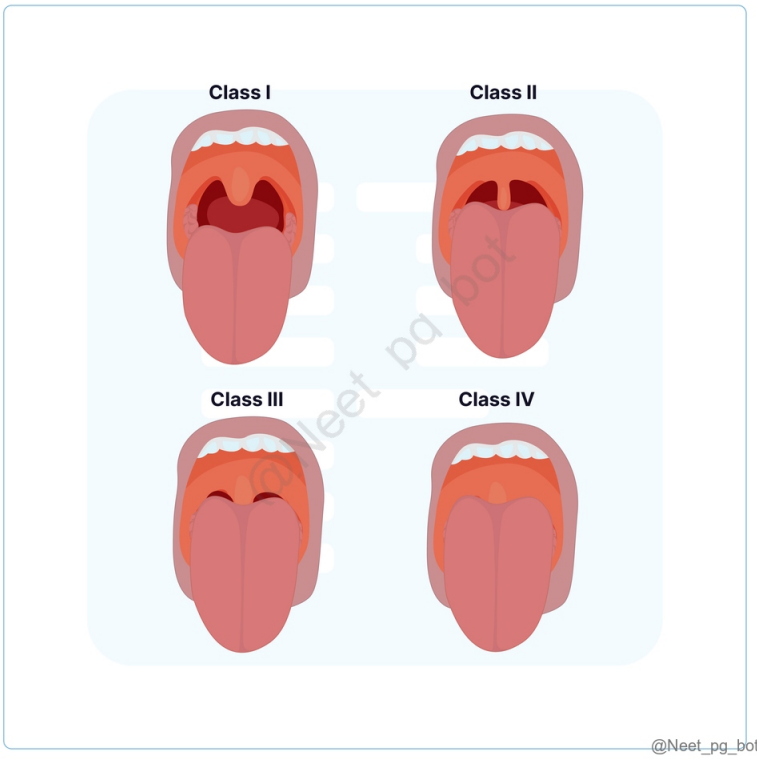
D. Class IV



Correct Answer: C. Class III

- *Listen (English)*
- *Listen (Hindi)*

Explanation: In Mallampati Class III , only the base of the uvula and the soft palate are visible. Mallampati classification: Class description Class I The P illars, u vula, s oft and h ard palate are visible. (mnemonic PUSH) Class II The soft palate, faucial pillars (upper part) and portion of uvula is visible. Class III The soft palate and base of uvula is visible. Class IV Only the hard palate is visible.



References:

Miller’s Anesthesia, 9th edition, Page 925

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Page 571

↑ *Back to this question in Part A*

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Q17: A 45-year-old obese female has been experiencing excessive vaginal bleeding for two months, and an ultrasound revealed uterine fibroids. She is scheduled for a hysterectomy. What is the preferred position for laryngoscopy in this case? (Q846755)

A. Sniffing position

B. Rose position

C. Lithotomy position

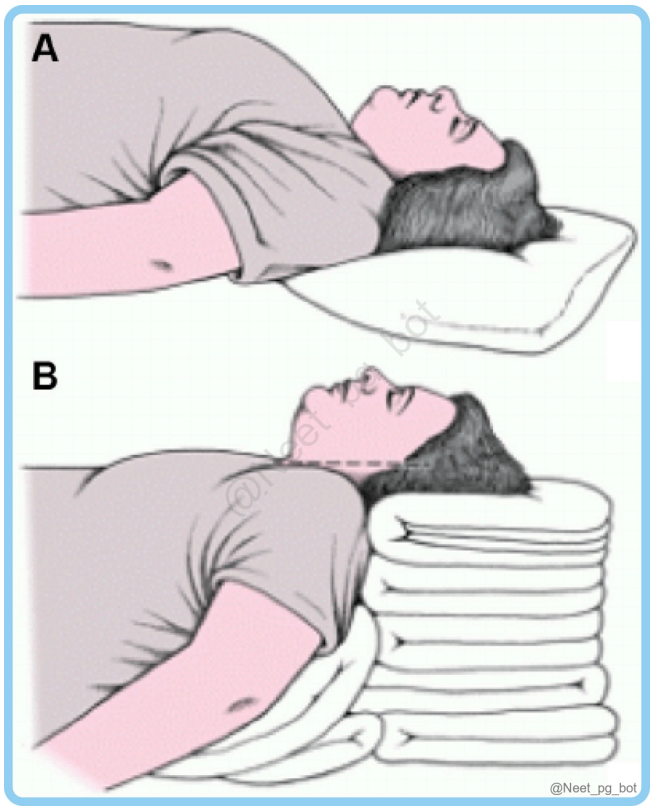
D. Ramped position

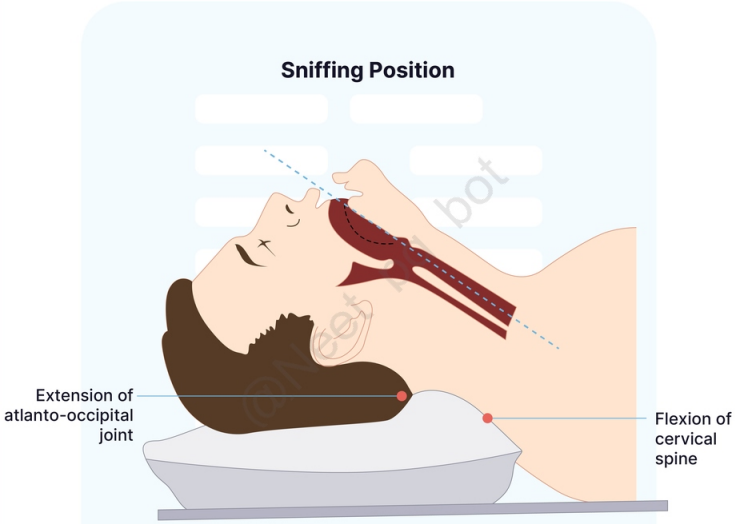
Correct Answer: D. Ramped position

■ *Listen (English)*

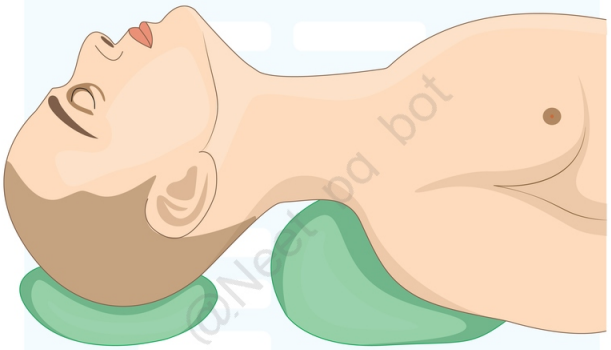
■ *Listen (Hindi)*

Explanation: The preferred position for intubation in obese patients is referred to as the Ramped Position , in which the patient's head, neck, and shoulders are elevated with pillows or padding, aligning the external auditory meatus with the sternal notch. This alignment improves the visualisation of the glottis during intubation, optimising airway management and reducing the risk of difficult intubation. Sniffing position (Option A) is used for intubation in non-obese patients, but in obese patients, it may not provide sufficient alignment for a clear view of the vocal cords. Rose position (Option B) : is used during tonsillectomy. The patient lies supine with the head extended by placing a pillow under the shoulders. A rubber ring is placed under the head to stabilise it. Lithotomy position (Option C) is preferred during labour, as well as for examinations or surgeries involving the pelvis, female genitalia, rectum, prostate, and other urethral procedures.

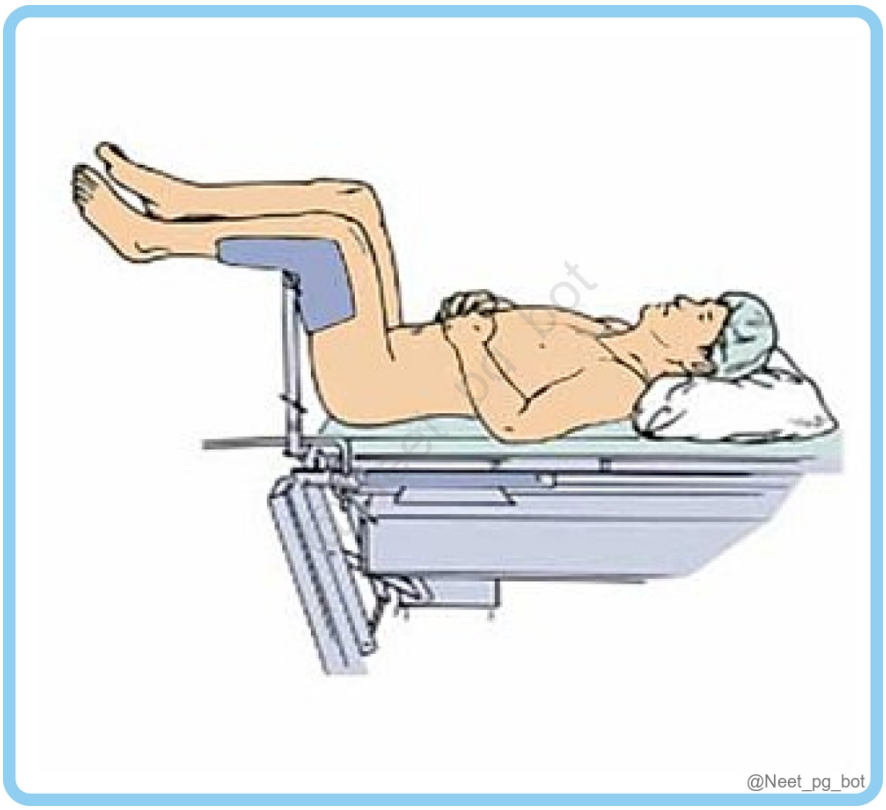




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References:

Miller’s Anesthesia, 9th edition, Pages 1393, 1394.

Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 577.

↑ *Back to this question in Part A*

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Q18: A 6-year-old child was brought in for an elective tonsillectomy in the operating theatre. During the procedure, the anaesthetist asked the junior resident about the appropriate laryngoscopy and its blades. Which type of laryngoscope is most preferred for this case? (Q846754)

A. McCoy Laryngoscope

B. Miller Laryngoscope

C. Macintosh Laryngoscope

D. McGrath Laryngoscope

Correct Answer: B. Miller Laryngoscope

■ *Listen (English)*

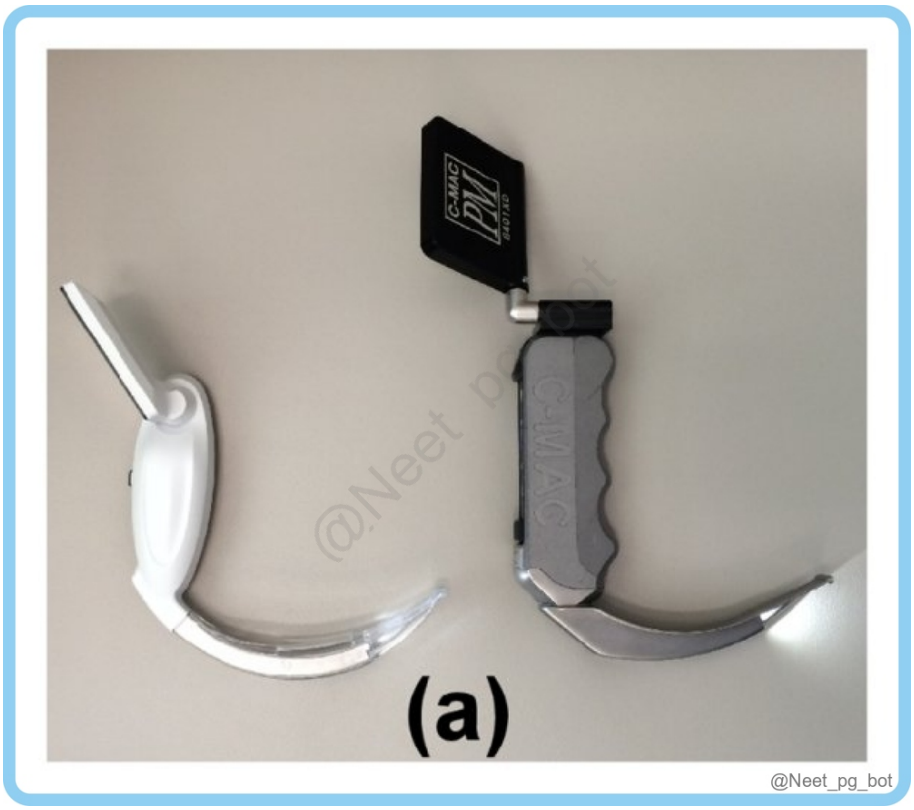
■ *Listen (Hindi)*

Explanation: The Miller laryngoscope is the preferred choice for pediatric patients, especially for children under 8 years of age . It has a straight blade, which is advantageous in lifting the epiglottis directly, providing a better view of the vocal cords in younger patients. Types of Laryngoscopy Direct Laryngoscopy: Direct visualisation of the glottis with the assistance of a laryngoscope Following laryngoscopes are most commonly used: Macintosh Laryngoscope (Option C) Miller Laryngoscope (Option B) McCoy Laryngoscope (Option A) Blade Curved shape Straight shape Curved with levering tip Use In adults In children (large epiglottis) It can be used in both adults and children. McGrath laryngoscope (Option D) : It is a video laryngoscope used in cases of difficult intubation.




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References:

Miller's Anesthesia, 9th edition, Pages 1394-1398

Morgan and Mikhail's Clinical Anesthesiology, 7th edition, Pages 594

↑ *Back to this question in Part A*

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Q19: A 56-year-old male, weighing 62 kg and with a known case of COPD, was brought in with heart failure and in a semi-conscious state. Immediate resuscitation measures were initiated. What size of laryngeal mask would be preferred for this patient? (Q846753)

A. 2.5

B. 3

C. 4

D. 6

Correct Answer: C. 4

■ *Listen (English)*

■ *Listen (Hindi)*

Explanation: For an adult weighing 62 kg, a size 4 Laryngeal Mask Airway (LMA) is recommended. Total 8 sizes of LMA are available as: Size Weight of the patient 1 <5 kg 1.5 5-10 kg 2 10-20 kg 2.5 (Option A) 20-30 kg 3 (Option B) 30-50 kg 4 (Option C) 50-70 kg 5 70-90 kg 6 (Option D) >100 kg Most commonly used sizes in infants: 1 and 1.5 Most commonly used sizes for adults: 4 and 5.

References:

Miller’s Anesthesia, 9th edition, Pages 1389, 1390. Morgan and Mikhail’s Clinical Anesthesiology, 7th edition, Pages 585.

↑ *Back to this question in Part A*

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• [17_Miscellaneous] 030 Previous Year Questions

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[17_Miscellaneous] 030 Previous Year Questions — Quick Jump

Q1 (p. 767) *Q2 (p. 767)* *Q3 (p. 769)* *Q4 (p. 769)* *Q5 (p. 770)*

Q1: A patient is scheduled for laparoscopic surgery under general anesthesia in a day care setting. Which of the following factors makes him unsuitable for day care surgery? (Q866913)

A. Home is 45 minutes away from the hospital

B. The surgical procedure is expected to last slightly over 1 hour

C. No attendant is available at home to care for the patient postoperatively

D. The patient has had general anesthesia in the past without complications

Correct Answer: C. No attendant is available at home to care for the patient postoperatively

Explanation: A fundamental requirement for day care surgery with general anesthesia is the presence of a responsible adult. This person must transport the patient home and provide care for at least the first 24 hours post-surgery. After general anesthesia, patients have impaired judgment, coordination, and reaction time. The absence of a caregiver poses a significant safety risk due to the potential for: Falls and other injuries. Delayed reactions to medications. Inability to recognize or appropriately respond to post-operative complications. Without this support, the patient is unsuitable for discharge to their home. Incorrect Options: Home is 45 minutes away from the hospital (Option A): A 45-minute drive is generally considered a reasonable distance for day care surgery. The key is that the patient can return to the hospital in a timely manner if a problem arises. The surgical procedure is expected to last slightly over 1 hour (Option B): The duration of a procedure is a factor in determining suitability for day care, but a procedure just over an hour is well within the acceptable range for many ambulatory surgical centers. The patient has had general anesthesia in the past without complications (Option D): This is a positive factor. A history of uncomplicated anesthesia suggests the patient is less likely to have an adverse reaction to the anesthetic agents, making them a more suitable candidate for day care surgery, not less.

↑ *Back to this question in Part A*

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Q2: A patient undergoing surgery is administered succinylcholine for muscle relaxation. Shortly after administration, he develops hyperthermia, muscle rigidity,

tremors, and tachycardia. What is the most appropriate treatment for this condition? (Q852447)

A. Neostigmine

B. Dantrolene sodium

C. Atropine

D. Midazolam

Correct Answer: B. Dantrolene sodium

Explanation: The clinical manifestations indicate malignant hyperthermia, a rare but life-threatening genetic disorder triggered by certain anesthetic agents, particularly succinylcholine . It is characterized by the rapid onset of hyperthermia, muscle rigidity, tachycardia, and metabolic acidosis following exposure to these triggering agents. The first-line treatment and specific antidote for malignant hyperthermia is Dantrolene sodium . It works by inhibiting calcium release from the sarcoplasmic reticulum in skeletal muscle, effectively reducing the hypermetabolic state and preventing further temperature elevation. Immediate administration of Dantrolene is crucial to prevent severe complications and mortality. Diagnosis of malignant hyperthermia Best screening test: Creatine kinase test Gold Standard Diagnostic test: Halothane-Caffeine Test Treatment for malignant hyperthermia Discontinue volatile anaesthetics and succinylcholine immediately. Notify the surgeon and call for assistance. Hyperventilate the patient with 100% oxygen at a fresh flow rate of at least 10 L/min. Mix dantrolene sodium with sterile distilled water and administer 2.5 mg/kg intravenously as soon as possible. Repeat every 5 to 10 minutes until symptoms improve, with a maximum total dose of 10 mg/kg. Administer bicarbonate to address metabolic acidosis. Implement cooling measures, such as lavage, cooling blankets, and cold intravenous fluids. For severe hyperkalemia, administer dextrose (25–50 g IV) along with regular insulin (10–20 units IV for adults). Provide antiarrhythmic medications as necessary. Monitor end-tidal CO_2 levels, electrolytes, blood gases, creatine kinase, serum myoglobin, core temperature, urinary output and colour, and coagulation status. Neostigmine (Option A) is an acetylcholinesterase inhibitor used primarily to reverse non-depolarizing neuromuscular blockade at the end of surgery. It would treat the underlying pathophysiology of malignant hyperthermia and could potentially worsen symptoms by increasing acetylcholine at neuromuscular junctions. Neostigmine is contraindicated in this scenario as it may exacerbate the hypermetabolic crisis. Atropine (Option C) is an anticholinergic medication that blocks muscarinic receptors. It would not treat malignant hyperthermia and might actually worsen the condition by inhibiting sweating and further elevating body temperature. Additionally, it could exacerbate the tachycardia already present in this patient. Midazolam (Option D) is a benzodiazepine with sedative, anxiolytic, and amnestic properties. While it might provide some symptomatic relief through sedation, it does not address the underlying pathophysiology of malignant hyperthermia.

References:

Miller’s Anaesthesia, 9th Edition, Page 1118, 1123, 1124, 1125

Morgan and Mikhail’s Clinical Anaesthesia, 7th Edition, Page 2301, 2302

↑ *Back to this question in Part A*

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Q3: While doing a subclavian venous catheterization, the patient suddenly desaturated and on examination of the chest, there was hyper resonance in the apical area of the right lung. What is the most likely diagnosis here? (Q857781)

A. Arterial puncture

B. Pneumothorax

C. Cardiac tamponade

D. Chylothorax

Correct Answer: B. Pneumothorax

Explanation: Subclavian venous catheterization involves inserting a needle near the apex of the lung. Pneumothorax occurs when air leaks into the space between the lung and the chest wall (pleural space). This can happen as a complication of subclavian line placement if the needle punctures the lung. Hyperresonance on chest examination is a classic sign of pneumothorax. Desaturation (low oxygen saturation) is another expected finding in pneumothorax as the lung's ability to oxygenate blood is compromised. Central Venous Catheter Insertion: Indications: Inaccessible peripheral veins Hemodialysis Central Venous Pressure (CVP) measurement. Administration of drugs noxious to peripheral veins Contraindications: Thrombocytopenia: Coagulopathies Abnormal anatomy Complications: Immediate Complications: Cardiac or vascular complications (arrhythmias, arterial/venous injuries, damage to major vessels) Pulmonary complications (pneumothorax, chylothorax, nerve/tracheal injury, air embolism) Delayed Complications: Infections (sepsis, shock, death) Device dysfunction (blockage, thrombosis, fracture, stenosis, infection) Arterial puncture (Option A): While possible during subclavian line placement, it wouldn't directly cause hyperresonance. It would typically present with pulsatile blood return and potential hematoma formation. Cardiac tamponade (Option C): This involves fluid accumulation in the sac around the heart, which would cause muffled heart sounds, not hyperresonance. Chylothorax(Option D): This is the presence of lymphatic fluid in the pleural space, usually due to damage to the thoracic duct. It's less likely to occur acutely during subclavian line placement and wouldn't typically cause hyperresonance.

References:

https://pmc.ncbi.nlm.nih.gov/articles/PMC2691520/

↑ *Back to this question in Part A*

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Q4: A 50-year-old man with a history of hypertension and diabetes presents with sudden-onset palpitations. On examination, his heart rate is 180 beats per minute, his pulse is feeble, and his blood pressure is 90/40 mm Hg. What is the most appropriate

next step in management? (Q855174)

A. IV adenosine

B. IV diltiazem

C. DC cardioversion

D. Ibutilide

Correct Answer: C. DC cardioversion

Explanation: Paroxysmal Supraventricular Tachycardia (PSVT) is characterised by a rapid heart rhythm, which in this case is associated with low blood pressure and a weak pulse , making the situation haemodynamically unstable. Immediate intervention is essential for stabilisation. DC Cardioversion : Direct current (DC) cardioversion delivers a synchronised electrical shock, which is the most effective and rapid method to terminate the tachycardia. This restores sinus rhythm, improving cardiac output and blood pressure in unstable patients. IV adenosine (Option A): Adenosine can transiently halt the tachycardia by inducing temporary AV nodal block. However, in haemodynamically unstable patients, it is not the first choice as it may worsen the instability by causing transient asystole or severe bradycardia. IV Diltiazem (Option B): Diltiazem slows AV nodal conduction and can terminate PSVT. However, in patients with low blood pressure and haemodynamic instability , it is contraindicated as it may further depress cardiac output and exacerbate hypotension. Ibutilide (Option D): Ibutilide, a class III antiarrhythmic, has a slower onset of action and is not appropriate in emergencies requiring immediate restoration of rhythm. It also carries a risk of arrhythmias, such as torsades de pointes.

References:

Morgan and Mikhail’s Clinical Anaesthesia, 5th Edition, Page 483

Miller’s Anesthesia, 8th Edition, Page 1440

↑ *Back to this question in Part A*

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Q5: Which vertebral level corresponds to Tuffier’s line, a clinically relevant anatomical landmark? (Q820228)

A. L2-L3

B. L4-L5

C. L5-S1

D. L3-L4

Correct Answer: B. L4-L5

Explanation: This is the correct vertebral level corresponding to Tuffier's line. Tuffier's line is drawn between the highest points of the iliac crests, and it usually intersects the spine at the level of the fourth lumbar vertebra (L4) or the fifth lumbar vertebra (L5). It is an important reference for lumbar punctures because it helps determine the appropriate level for inserting the needle into the spinal canal without risk of damaging the spinal cord. Incorrect Options: L2-L3 (Option A): This vertebral level is not relevant to Tuffier's line. Tuffier's line, also known as the intercristal line, is an anatomical landmark that corresponds to the highest point of the iliac crests. It is used as a reference point for lumbar punctures (spinal taps). L2-L3 would not be the correct level for Tuffier's line. L5-S1 (Option C): This vertebral level is not directly related to Tuffier's line. Tuffier's line is typically drawn above the level of L5-S1, as it corresponds to the highest points of the iliac crests. Lumbar punctures are usually performed below L5-S1, at the L3-L4 or L4-L5 level. L3-L4 (Option D): This vertebral level is close to the correct answer but not exactly accurate. While Tuffier's line intersects the spine around the L4-L5 level, some sources might mention L3-L4 as an approximate reference point. However, the more precise and commonly accepted landmark is L4-L5.

References:

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↑ *Back to this question in Part A*

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