Multiple Choice Questions

Anaesthesia for paediatric ear, nose and throat surgery

1. Children undergoing tonsillectomy

(a) Require a pre-operative clotting screen.
(b) The commonest reason for unexpected admission following intended day-stay surgery is bleeding.
(c) May have presented with failure to thrive.
(d) May be administered dexamethasone intra-operatively to decrease the risk of post-operative infection.
(e) Should always receive anti-emetics.

2. A child with a post-tonsillectomy bleed

(a) Should be returned to theatre and intubated immediately.
(b) The airway can be safely managed with a laryngeal mask.
(c) The insertion of an interosseous needle may be required.
(d) Two suction catheters should always be available.
(e) Blood should be cross-matched.

3. Obstructive sleep apnoea in children

(a) Is associated with a greater incidence of post-operative complications.
(b) Is associated with a smaller risk of airway obstruction during anaesthesia.
(c) Decreases the ventilatory response to CO_2.
(d) Can always be diagnosed by a right ventricular strain pattern on the ECG.
(e) Can cause behavioural problems.

4. Children presenting with a history of an oesophageal foreign body

(a) A rigid oesophagoscopy is always indicated.
(b) The commonest site for impaction is the level of the cricopharyngeus muscle.
(c) A previous stricture is a predisposing factor.
(d) They should be encouraged to drink if oesophageal perforation is suspected.
(e) Fistula formation is a recognised complication.

5. Children undergoing general anaesthesia for middle-ear surgery

(a) Should be paralysed to provide optimal operating conditions.
(b) Are prone to post-operative nausea and vomiting.
(c) May receive nitrous oxide throughout the procedure.
(d) Require intubation.
(e) Usually have other associated abnormalities.

Combined spinal-epidural

6. Regarding the needle-through-needle CSE technique:

(a) The epidural component should always be performed after the spinal component.
(b) Needles with "backeyes" have been used.
(c) Locking needles may reduce the reduce the risk of spinal needle displacement.
(d) Double-barrelled needles are commonly used at present.
(e) Failure rates of 5–20 % have been reported.

7. Regarding failure of the CSE technique:

(a) Failure of the spinal component is less common with the needle-through-needle technique than with the separate needle technique.
(b) Backflow of saline may be mistaken for cerebrospinal fluid in the needle-through-needle technique.
(c) The use of short spinal needles may increase the failure rate.
(d) Delay in inserting the epidural catheter will not have an effect on the fixing of the spinal component.
(e) Deviation of the needles from the midline in the needle-through-needle technique increases the failure rate.

8. The following are complications of CSE:

(a) Subarachnoid placement of the epidural catheter.
(b) Kinking of the spinal needle when a needle-the-needle technique is used.
(c) 5% incidence of post-dural puncture headache.
(d) Neurological complications such as cauda equina syndrome and subdural haematoma.
(e) Horner's syndrome.

9. Infective complications of CSE:

(a) are common.
(b) are greater than those for spinal or epidural alone.
(c) are seen less commonly with the needle-through-needle technique.
(d) are mainly caused by skin commensals.
(e) include epidural and subdural abscesses.

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Peripheral nerve blockade at the elbow and wrist

10. Concerning peripheral nerve blockade at the elbow:

(a) Elbow blocks may be used as the sole technique for surgical repair of a wrist fracture.
(b) Post-operative analgesia for trapeziectomy may be provided by median and radial nerve block at the elbow.
(c) Injection of local anaesthetic into the ulnar sulcus is the best way to ensure blockade of the ulnar nerve.
(d) Two injection points are required to block the 4 nerves anteriorly at the elbow.
(e) Motor responses may be elicited from all 6 nerves at the elbow when using peripheral nerve stimulator.

11. Concerning peripheral nerve blockade at the wrist:

(a) Analgesia for repair of a Dupuytren's contracture of the ring finger may be provided by block of the ulnar nerve at the wrist.
(b) Blockade of the median nerve proximal to the flexor retinaculum will provide sufficient anaesthesia for carpal tunnel surgery.
(c) Injection into the carpal tunnel is a safe technique for patients with carpal tunnel syndrome.
(d) Reliance on blockade of an individual nerve increases the likelihood of failure.
(e) There is an increased risk of intra-arterial injection using an anterior approach to the ulnar nerve.

12. Concerning the nerve supply of the forearm and hand:

(a) The posterior cutaneous nerve of the forearm is a branch of the radial nerve.
(b) The lateral cutaneous nerve of the forearm is a branch of the musculocutaneous nerve.
(c) Pronation of the wrist is an adequate motor response identifying the median nerve at the elbow.
(d) There is considerable overlap of the innervation of the hand.
(e) The radial nerve contains motor fibres at the level of the wrist.

Conventional and near-patient tests of coagulation

13. Laboratory coagulation tests

(a) May be inaccurate if the sample tube is under-filled.
(b) Typically use plasma.
(c) Are expressed as a percentage of normal.
(d) Are measured by the formation of thrombin.
(e) Are altered *in vitro* by the presence of the lupus anticoagulant.

14. The INR

(a) Is prolonged if there is a deficiency of fibrinogen.
(b) Is performed using thromboplastin.
(c) Is normal in patients with haemophilia.
(d) Was thought to reflect abnormalities of the intrinsic pathway.
(e) Is internationally standardised.

15. Concerning the ACT

(a) The ACT is a useful laboratory screening test.
(b) Is reproducible.
(c) Is closely-related to the APTT.
(d) Should be above 700 sec for patients receiving aprotinin during cardiopulmonary bypass (CPB).
(e) Can guide the dose of protamine required to reverse heparinisation.

16. The PFA 100

(a) Involves the ultrasonic disruption of the cellular elements.
(b) Is altered in the presence of aspirin.
(c) Uses plasma.
(d) Screens for Von Willebrand's disease.
(e) Is used during cardiac surgery.

17. The thromboelastogram (TEG)

(a) Is semi-qualitative.
(b) Allows identification of excess heparin.
(c) Is altered during hepatic resection.
(d) Is useful if there are multiple defects in coagulation.
(e) Is prone to artefacts.

Complex regional pain syndrome

18. The following are recognised signs and symptoms of CRPS:

(a) Burning pain.
(b) Osteoarthritis.
(c) Atrophy of the skin, hair and nails.
(d) Vasodilatation.
(e) Allodynia.

19. Concerning the treatment of CRPS:

(a) A graduated exercise programme that does not aggravate the pain is essential.
(b) The mode of action of calcitonin and bisphosphonates is unknown.
(c) Amputation should be considered if the pain is refractory.
(d) The treatment regimen does not require a multidisciplinary approach.
(e) Opiates are the first-line treatment option.

20. Concerning sensory changes:

(a) The sensory deficit is dermatomal.
(b) All patients suffer from hyperalgesia to mechanical stimuli.

(c) The pain is continuous burning, aching, shooting or prickly in nature.
(d) All patients suffer from severe allodynia.
(e) Temperature and proprioception deficits are the first symptoms to appear.

21. With regard to neuromodulation:

(a) Spinal cord stimulation affects sensory dorsal nerve roots as well as the descending inhibitory pathways within the spinal cord.
(b) Neuromodulation involves spinal cord stimulation and peripheral nerve stimulation.
(c) Spinal cord stimulation may induce the endogenous release of opioids.
(d) Invasive treatments offer acceptable results and good value for money.
(e) Spinal cord stimulation with no other treatment modalities, has a significant effect on pain at 6 months.

22. The following are recognised causes of CRPS:

(a) Myocardial infarction.
(b) Frostbite.
(c) Crush injury.
(d) Sprain.
(e) Burns.

Anaesthesia for thyroid and parathyroid surgery

23. Parathyroid adenoma may present with:

(a) Psychiatric disturbance.
(b) Increased serum calcium.
(c) Decreased urinary calcium.
(d) Abdominal pain.
(e) Renal stones.

24. The following are features of hyperparathyroidism:

(a) Polydipsia and polyuria.
(b) Bone pain.
(c) Raised urinary calcium.
(d) Tetany.
(e) Peptic ulceration.

25. In a patient with thyrotoxicosis:

(a) Atrial fibrillation is common.
(b) Diabetes insipidus is a common complication.
(c) A hoarse voice is not uncommon.
(d) Premedication with pethidine 50 mg and atropine 0.6 mg is the method of choice.
(e) Hypertensive heart disease is a common association.

Ketamine

26. Regarding ketamine:

(a) It acts on the central nervous system.
(b) It has local anaesthetic properties.
(c) S+ ketamine is four times as potent as the racemate.
(d) S+ketamine and R- Ketamine have the same affinity for NMDA receptors.
(e) Ketamine has two geometric isomers.

27. Ketamine binds to:

(a) NMDA receptors.
(b) Muscarinic receptors.
(c) Nicotinic receptors.
(d) Opioid receptors.
(e) Neuronal potassium channels to exhibit its local anaesthetic properties.

28. Ketamine and neurosurgery:

(a) S+ ketamine reduces cerebral metabolism and maintains cerebrovascular autoregulation.
(b) Ketamine triggers seizure activity.
(c) Ketamine is contraindicated in patients with epilepsy.
(d) Ketamine may have neuroprotective and neuroregenerative effects.
(e) Neuroprotection appears to be due to increased calcium fluxes and glutamate accumulation at the NMDA receptors.

29. The following are true:

(a) Ketamine has a central sympathetic effect.
(b) Ketamine has no direct myocardial depression.
(c) S(+)- Ketamine is a better choice than R(−)- in treating acute asthma.
(d) Ketamine is absolutely contraindicated in patients with chronic renal failure.
(e) Ketamine may have immunomodulating properties.

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