

Examiners' Report

Master of Medicine (Anaesthesiology) Part B SAQ Examination

12 and 15 April 2024

General Comments

This report summarises the areas examined in the 2024 Master of Medicine (Anaesthesiology) [MMed(Anaes)] Part B Short Answer Question (SAQ) Examination conducted on 12 and 15 April 2024. The report is designed to aid residents and faculty in preparing for future examinations.

Candidates should note that all aspects of the syllabus are examinable. The examination syllabus is available from the Division of Graduate Medical Studies (DGMS) [website](#). Candidates are advised to use the document to guide them and cover the breadth of the syllabus to maximise their chance of success at the examination.

The 16 SAQ are divided into Paper One and Two, each 8 questions to be completed over 2 hours, held on 2 different days.

Candidates should note that the weightage of all the questions is equal, and all the questions need to be answered. Some questions have multiple parts with allocated percentages (%). The percentages serve to guide the candidates with time allocation and may not reflect the exact mark allocation. Candidates are advised to plan and manage their time accordingly.

Candidates are reminded to read the questions carefully. The SAQ examination is designed to examine the candidates' ability to apply their knowledge in specific clinical situations. If a specific clinical situation with history or physical findings is provided, the candidates are expected to tailor their answers to that situation. Generic answers that are not specific to the clinical scenario tend to be awarded lower marks leading to poor performance overall.

Marking and Passing Criteria

All the SAQs are reviewed and criteria for passing each question are determined by the examination committee prior to the examinations. The answer for each question is marked by 2 examiners.

<u>Score</u>	<u>Interpretation of Score</u>
8	An excellent performance with both examiners
7	A performance significantly better than a pass
6	A definite pass
5	A reasonable performance but not up to a pass
4	A poor performance but not an absolute failure
3	An absolute failure which cannot be compensated

Note that a score of 6 is a pass, while a score of 5 is considered a "borderline fail".

The sum of the scores for all 16 questions is added for each candidate. The candidate passes the examination if the total score is greater than or equal to 90. This score is an approximative equivalent to having a clear pass in 10 out of the 16 questions and a borderline performance in the remaining 6 questions.

Results for the 2024 April MMed(Anaes) Part B SAQ Examination:

Total number of candidates who registered: 33
Number of candidates who withdrew or were absent: 0
Number of candidates who completed the examination: 33
Number of candidates who passed the examination: 9 (27%)

Paper One, Question One:

A 25-year-old man with a known history of hypertrophic cardiomyopathy (HCM) requires an urgent laparoscopic appendectomy for perforated appendicitis. He had presented with a 3-day history of fever, central abdominal pain and had a few episodes of vomiting today. His vital signs are heart rate 90 bpm, respiratory rate 20 bpm, blood pressure 140/90 mmHg, SpO₂ 97% while breathing room air.

- A) Describe the pathophysiological changes that occur in hypertrophic cardiomyopathy. (40%)
- B) What are the principles of perioperative management of this patient? Describe briefly the steps you will take. (60%)

Pass Rate: 33.3%

Hypertrophic cardiomyopathy is not a common condition but one which is important for anaesthetic practice. The expected performance for a pass for Part A includes describing specific features in HCM including left ventricular hypertrophy without dilation causing diastolic dysfunction and dynamic left ventricular outflow tract obstruction. Further elaborations on the mechanism and factors that affect outflow obstruction would be given extra credits.

Part B expects the candidates to describe steps taken pre, intra and postoperatively in this patient, considering that this is an emergency surgery for an intra-abdominal pathology, to ensure maintenance of adequate cardiac output through management of fluid status, cardiac rhythm, contractility and vascular resistance.

There was wide variation in performance with about a quarter of candidates performing very poorly (score of 3-4) and about 20% performing very well (score of 7-8) in this question.

The candidates who did well generally have a fairly good understanding of the pathophysiology of hypertrophic cardiomyopathy and the challenges of anaesthesia in these patients. Even so, how the venturi effect aggravates the left ventricular outflow tract obstruction and mitral regurgitation was not mentioned by any candidate.

Overall, the areas that can be improved besides understanding the pathophysiology of HCM, include issues of using inotropes or chronotropics in these patients, the role of cardiac output monitors, judicious fluid loading and management of sympathetic surges during the perioperative period.

Paper One, Question Two:

A 70-year-old man admitted for intestinal obstruction with possible perforation requires an emergent laparotomy. He has a history of hypertension for 30 years and 50 pack-years of smoking. He has a recent incidental finding of asymptomatic 70% left carotid artery stenosis for which he has had no interventions so far.

List your anaesthetic goals of management of this patient and describe specific measures you will take to achieve them.

Pass Rate: 66.7%

This is a commonly encountered condition in the emergency operating theatre and the candidates were able to identify the issues and take necessary measures to manage it.

Some of the expected goals include lung protective strategies such as prevention of aspiration, protective ventilation, adequate neuromuscular reversal; prevention of end-organ damage to the brain, heart and kidneys with specific interventions to optimise perfusion while minimising demand and facilitating early source control of sepsis.

Unfortunately, one candidate misread the question and wrote about the management of carotid endarterectomy instead.

Candidates are reminded to read the question carefully.

Candidates who described specific measures to achieve the specific goals of management rather than giving generic management were awarded better scores.

Paper One, Question Three:

An 80-year-old female is admitted following a road traffic accident. She has sustained multiple right sided rib fractures from the 6th to the 9th rib. She is known to have chronic obstructive pulmonary disease and renal impairment. Her team has referred her to the Pain Service for management of her severe pain.

You are the Specialist covering the Pain service. Discuss your management of this patient.

Pass Rate: 57.5%

This is a common clinical scenario seen in the acute pain service and most candidates had no problems discussing the multimodal analgesia regime commonly used in this situation.

Candidates are reminded that besides covering analgesia aspects, it is also important to discuss the management of the patient including finding out other injuries from the road traffic accident, taking history and physical examination to determine the nature of the pain, considering her background medical conditions and the influence on management, and level of monitoring required.

Paper One, Question Four:

A 60-year-old male smoker is scheduled for right video-assisted thoracoscopic (VATS) upper lobectomy of the lung for cancer. General anaesthesia is induced, and a left-sided double lumen tube is placed uneventfully. He is then turned from supine to a left lateral position. Ventilation settings are kept constant throughout (PCV, PC 17 cm H₂O, PEEP 5 cm H₂O, FiO₂ 60%, RR 15 bpm).

A) Describe the changes in distribution of ventilation and perfusion when the patient is turned from supine to left lateral position and explain their effects on oxygenation. (60%)

B) Surgery starts, one-lung ventilation to the left lung is commenced, and the right thoracic cavity is entered into. Five minutes after that, SpO₂ decreases from 98% to 85%.

Explain the difference in effectiveness of increasing FiO₂ to 100% versus applying CPAP of 5 cm H₂O to the non-dependant lung as a means to improve the SpO₂. (40%)

Pass Rate: 9.1%

Both parts of this question were poorly done.

Part A requires the candidate to describe the changes in the perfusion and the ventilation when the patient is turned from supine to lateral, explain why the V/Q ratio is different, and how it affects oxygenation.

Some candidates misinterpreted Part A and assumed that the question was asking about one-lung ventilation and hypoxic pulmonary vasoconstriction.

For those who interpreted the question correctly, some were confused over left and right lung perfusion in the left lateral position, while some did not realise that the V/Q mismatch is worse in lateral position compared to the supine position. Many candidates were unable to describe the changes associated with changing the position of patient under anaesthesia from supine to lateral. Candidates are reminded that we change the position of our patients under anaesthesia routinely, be it lateral, supine or Trendelenburg, and a clear understanding of the physiological changes associated with it is vital.

The question in Part B describes the 2 interventions that are commonly discussed to manage desaturation during one-lung ventilation. Candidates are expected to explain what happens when one lung is not ventilated and collapsed (the non-dependant lung), versus when that non-dependant lung is not collapsed (being held "opened" by CPAP), and how that affects oxygenation. This situation needs to be compared to the situation when the non-dependant lung is not ventilated and collapsed while the dependant lung is ventilated with 100%.

It is unfortunate that some candidates did not realise that CPAP to the non-dependant lung is more effective than increasing the FiO₂ to 100% to the dependant lung. Many were unable to explain why this is so.

Overall, it suggests that there is a major knowledge gap of the fundamentals of lung physiology pertaining to V/Q ratio, effect of position, IPPV and OLV.

Paper One, Question Five:

- A) Fentanyl and morphine are both common additives used in central neuraxial blockade. Explain the rationale for using them and if there are any differences in their pharmacological actions. (40%)
- B) List 3 non-opioid additives to local anaesthetics for epidural blockade and explain the reasons for using them. (60%)

Pass Rate: 42.4%

The first part of this question asks for the difference in pharmacological actions and behaviour of fentanyl and morphine which may explain why they may be commonly included for a central neuraxial block and to link that to the pharmacokinetic and dynamic properties of these medications.

The second part requires the candidates to cover 3 other additives that may be used for central neuraxial block, giving explanations why.

The performance for Part A was generally poorer than Part B.

Some candidates demonstrated poor knowledge of the behaviour of fentanyl and morphine in the CSF and how this explained the clinical effects seen.

For Part B, most candidates were able to name 3 agents and their clinical actions, but some were unable to describe the mechanism of action clearly. A surprising number of candidates demonstrated poor knowledge of pH and pKa of LA. A few were confused as to whether it was the ionised or the unionised LA that crosses the neural membrane.

Paper One, Question Six:

A 28-year-old primigravida (BMI 38) is in labour and requests for labour epidural analgesia. A combined spinal epidural is planned and found to be technically difficult. The L3/4 epidural space is eventually identified via loss of resistance to saline technique.

2 mg of ropivacaine with 10 mcg of fentanyl is given intrathecally. Epidural catheter is threaded with difficulty. A test dose of lidocaine 1.5% 3 ml is administered through the epidural catheter. 5 minutes after the test dose is administered, the patient becomes drowsy, BP drops to 66/42 mmHg from a baseline of 110/80 mmHg and HR decreases to 45 bpm from a baseline of 90 bpm.

- A) Discuss purpose and controversies of the test dose for epidural catheter placement in a Combined Spinal Epidural block for labour analgesia in a labouring parturient. (50%)
- B) Describe your management of this patient. (50%)

Pass Rate: 21.2%

Part A of this question expects the candidates to list the purpose of the epidural test dose and discuss why it might be controversial in the context of a patient who already had a dose of intrathecal local anaesthetic

and is currently in active labour with the associated haemodynamic responses.

Part B of this question expects the candidate to manage a patient in labour with a newly inserted epidural catheter, and develops hypotension, bradycardia and change in mental status. The candidate is expected to institute immediate management based on the extent of physiological changes (taking into account the mother and foetus), exclude and manage possible causes (not only LAST) and some follow-up actions.

Generally, the performance for Part B was better than Part A.

Some candidates showed a poor understanding of the purpose of the test dose. Most candidates only mentioned the use of the test dose to exclude accidental intrathecal placement of the epidural catheter. A few did not point out that the small dose used may not cause clinically obvious symptoms of LA toxicity even when given intravascularly. A fair number of candidates did not deal with the confounding presence of a working intrathecal block and the issue of a labouring woman.

For Part B, some candidates did not focus on the underlying problem of low blood pressure, low heart rate and possibly pending collapse. A few were fixated that this is LA toxicity and managed accordingly although it is unlikely considering the dose of LA used. Overall, candidates are familiar with the practice of ACLS guidelines with modifications for gravid patients, which is good.

Candidates are reminded that the Part B examination is to assess their readiness to progress to a Senior Resident hence they are advised to answer the question in the capacity as a Senior Resident and not as a Junior Resident.

Paper One, Question Seven:

A 68-year-old man with history of chronic ischaemic heart disease and heart failure with preserved ejection fraction (HFpEF), and diabetes mellitus (latest HbA1c 10.1%) on empagliflozin 10 mg every morning, presents to the Emergency Department with abdominal pain, nausea, vomiting and fatigue.

He is diagnosed to have acute appendicitis and undergoes an emergency laparoscopic appendectomy.

On the first post-operative day, he is alert and conscious. His HR is 99 bpm, BP is 135/68 mmHg, SpO₂ is 95% (room air). His laboratory results are as follows:

Glucose	9 mmol/L
pH	7.30
BE	-5.0
pCO ₂	32 mmHg
pO ₂	98 mmHg
Standard Bicarbonate	13 mmol/L
Lactate	3 mmol/L
Creatinine	101 µmol/L

A) Discuss the likely causes for the acid-base disorder. (40%)

B) How will you manage this patient? (60%)

Pass Rate: 36.4%

Part A expects the candidate to make use of the given history and laboratory investigation to give an impression of the underlying acid-base disorder (e.g., metabolic acidosis with respiratory compensation), give causes that are likely in this situation, and discuss the reasons why they come to this list of causes (e.g., based on drug history, medical history, surgical pathology, acute stressors and symptoms such as vomiting, the lactate and creatinine level etc).

Part B expects the candidate to describe what they would do including immediate management, monitoring, investigations to determine or exclude the various causes, and some details about specific management.

Some candidates were fixated on the history of SGLT2 inhibitor, HFpEF and/or sepsis, and limited their discussion in Part A about the possible causes, to these few (sometimes only 1 or 2) pathologies. This also led to a limited description of management in Part B. Some candidates gave very generic answers or very disorganised answers for Part B after giving a reasonable discussion of causes for Part A which led to a poor performance overall. A few candidates seemed to have misread the question and either covered management only or covered perioperative (preoperative, intraoperative and postoperative) management of a patient on SGLT inhibitors.

Paper One, Question Eight:

You are asked to anaesthetise a 55-year-old man with schizophrenia for his first electroconvulsive therapy (ECT). He has longstanding hypertension and hyperlipidaemia.

- A) Outline the physiological effects expected during ECT. (20%)
- B) Discuss your anaesthetic considerations and management. (70%)
- C) After the first ECT, the psychiatrist requests for a longer duration of seizure for the subsequent ECTs. Explain how you would alter your technique. (10%)

Pass Rate: 24.2%

Candidates are expected to outline the autonomic changes that occur during the ECT for part A. They are expected to discuss some of the considerations specific to ECT such as (commonly) the remote location, potential stress on the cardiovascular system, potential for drug interactions, the apnoeic period during the seizure and risks associated with the seizures including fractures or dental injury for Part B. Candidates are expected to propose and explain (one or two methods) how they might either decrease the seizure threshold or minimise anti-seizure effects of the anaesthetic agents in Part C.

It is evident from the answers that almost half of the candidates might not have performed anaesthesia for an ECT or witnessed anaesthesia for ECT before, missing out on important considerations, especially those that involve specific potential harm from the ECT such as apnoea and seizures. Candidates are reminded that the answers need to be specific to the question. Descriptions of generic management of general anaesthesia is commonly not good enough for a pass.

Some candidates proposed giving a larger dose of anaesthetic (such as thiopentone) to prolong the seizure duration suggesting a poor understanding of the pharmacology of anaesthetic agents.

Paper Two, Question One:

A 70-year-old female patient with ischemic heart disease (IHD), hypertension and chronic obstructive pulmonary disease (COPD) on nocturnal oxygen is scheduled for a fixation of her hip following a fall. Her chronic medications include clopidogrel, perindopril, formoterol (long-acting beta2-agonist), acinidium (long-acting muscarinic receptor antagonist).

A) Explain how you would assess the risks versus benefits of early fixation (<24 hours). (60%)

B) The patient is very concerned about postoperative cognitive dysfunction. Describe how you would address her concerns. (40%)

Pass Rate: 30.3%

This is a common clinical situation where an elderly patient with multiple medical requires a time-sensitive hip fracture surgery where the risk of early fixation, foregoing the chance and time required for optimisation or work-up of any underlying medical conditions or titration of chronic medications (clopidogrel), is balanced against the benefits of early surgery such as reduction in morbidity and mortality, and improvement in outcomes.

Having a framework for how to assess the risks and knowing specific symptoms, signs and investigations that are useful in determining these risks are essential knowledge expected for Part A.

Postoperative cognitive dysfunction is a relatively common complication in this group of patients. Besides mitigating measures such as monitoring or pharmacological interventions, addressing the patient's concerns also includes finding out the reasons for these concerns, acknowledging them as well as counselling the risks and prognosis and time course of POCD in the event that it occurs.

While most candidates were able to provide a reasonable answer for Part A, many candidates did not realise that exploring the patient's concerns and counselling is an essential part of Part B, leading to a poorer performance overall.

Paper Two, Question Two:

A 25-year-old motorcyclist sustains a severe traumatic brain injury (TBI) after a collision with a lorry. He undergoes a right decompressive craniectomy and intracranial pressure (ICP) monitor insertion in emergency OT and is subsequently admitted to the Neurosurgical Intensive Care Unit. His ICP upon arrival is 30 mmHg.

A) Describe your initial management of his elevated ICP. (80%)

B) List the problems which may arise with the use of barbiturate (thiopentone) coma as a 3rd tier therapy for refractory intracranial hypertension. (20%)

Pass Rate: 63.6%

This is a fairly straightforward question on the management of high ICP following traumatic brain injury which should be covered quite extensively in junior residency. As expected, the performance for Part A of the question was done well by most of the candidates.

Unfortunately, a significant number of candidates had poor knowledge regarding issues associated with the use of barbiturate coma (such as hypotension or hypokalaemia) for the management of high ICP which contributed to the performance of the cohort being poorer than expected of this question.

Paper Two, Question Three:

A 25-year-old male motorcyclist is involved in a road traffic accident. On arrival at the Emergency Department, his GCS is E2M2V4, BP 80/50 mmHg, HR 120 bpm, RR 16 bpm and SpO₂ 93%.

Examination findings include bruising on the chest, flanks and a deformed left thigh. The FAST is negative. Following 2L of crystalloids and 1L of O negative blood, his BP is now 85/50 mmHg and HR 130 bpm.

A) List the causes of refractory hypotension despite volume resuscitation. Include the corresponding key clinical features and investigation results. (50%)

B) Describe the main goals of management. Include the key measures for each goal. (50%)

Pass Rate: 36.4%

Part A expects the candidate to list some of the possible causes of persistent hypotension with supporting clinical features in THIS patient. One possible mental framework answering this may be based on the causes of shock: hypovolemia (on going blood loss, distributive or neurogenic (spinal cord injury), cardiogenic (myocardial contusions) or obstructive (tension pneumothorax or pericardial tamponade).

For Part B, hardly any candidate was able to articulate the goals of management, which includes important aims such as preventing aspiration, optimising oxygenation and ventilation, damage control resuscitations, identifying life-threatening injuries and sources of haemorrhage or bleeding, securing haemostasis and preventing coagulopathy. Credit was given as long as candidates described the interventions that would achieve these aims. Candidates who had some framework (like ATLS) generally were able to provide better answers which did not miss out on important points.

A reminder for candidates to read the question. Causes of hypotension like myocardial infarction or pulmonary embolism is uncommon in young polytrauma patients. It is pointless to check if a patient with GCS of 8 is able to speak in full sentences before deciding if airway management is needed +, as they would almost always require definitive airway management.

Paper Two, Question Four:

A 50-year-old woman presents to the emergency department (ED) with a 2-week history of shortness of breath and occasional noisy breathing, which has become significantly worse over the last 24 hours.

She had been diagnosed with a thyroid mass 2 years ago but defaulted follow-up. She offers that the mass has increased over the last 2 months.

The ED consultant identifies stridor, that is worse when the patient is supine or talking fast.

You are in charge of the emergency airway service for the day and have been asked to assist in the management of her airway.

A) Discuss your considerations when assessing the need for immediate/early intubation. (40%)

The otorhinolaryngology consultant and you agree that intubation should be performed early. You plan to perform an awake flexible bronchoscopic assisted intubation.

B) Describe in detail (including drugs and doses) how you would go about performing the intubation. (40%)

C) What are the pitfalls of this method of intubation in this scenario? (20%)

Pass Rate: 45.5%

Some of the expected considerations when assessing the need for immediate or early intubation (for Part A) include the severity of obstruction and clinical features (if any in this patient) that might indicate allow one to determine the severity. Other considerations specific to the obstruction include the nature or site of obstruction, potential causes of the obstruction, and if it is reversible. Other considerations crucial in managing this patient (and her airway) include her background medical conditions if any.

Unfortunately, Part A was very poorly done. Many candidates were unable to describe clinical features of a stridorous patient who will need to be intubated soon/early. Many were fixated on logistics and getting the patient out of ED. Many candidates did not consider differential diagnosis nor exacerbating/underlying conditions that could have exacerbated the obstruction or contributed to the clinical picture. Many of the candidates focused only on the thyroid mass thus missing assessing other medical aspects of this patient.

Parts B and C are more straightforward requiring the candidates to describe how they perform awake flexible bronchoscopic assisted intubation and the potential issues. The better candidates were able to give good answers for Parts B and C giving details on the drugs and dosages they would use.

Candidates who did poorly failed to specify details of awake FOB technique or elaborate on the pitfalls of the technique suggesting a possible lack of familiarity with the procedure.

Paper Two, Question Five:

A 5-year-old boy with autism spectral disorder is scheduled for comprehensive dental rehabilitation under general anaesthesia as a day case surgery. He weighs 35kg and is otherwise well. This is the child's first GA.

A) Describe your concerns regarding the pre-induction management of this patient. (70%)

B) Justify YOUR choice of premedication(s). (30%)

Pass Rate: 9.1%

For Part A, the answers are expected to cover the four main areas of concern for management; paediatric patient, autism, obesity (candidates are expected to pick up that 35kg is relatively heavy for a 5-year-old boy) and dental surgery. Some of the expected details are considerations for autism including severity, behavioural disturbances, cooperativity, the feasibility of premedication, induction, maintenance and recovery plan (to prepare the caregivers); issues with obesity including venous access, airway management, possibility of OSA; issues with dental surgery including issue of shared airway such as selection, type, insertion (e.g., nasal) and securing of airway, analgesia, management of throat pack and plan for extubation; issues with paediatric patients including the choice of anaesthetic circuit, equipment and drug dosing.

Most of the candidates covered autism and its considerations well but many failed to highlight issues with obesity (which is increasingly prevalent in paediatric and autistic patients), challenges of dental surgery and issues with dealing with a paediatric patient.

Part B expects the candidates to justify their choice of premedication which includes describing what they would use, why and comparing it with at least one other option (giving reasons why their selected option is better). Expected details in their answers include discussing with the caregiver if their selected option is acceptable for the child, how (dose and route) the premedication is given and the estimated time to take effect.

Many candidates failed to justify their choice of premedication, compare different premedication (dose or route) or include the onset time for the premedication. Some failed to give reasonable doses of the premedication or proposed a premedication plan which is likely to be inadequate (e.g. just relying on EMLA alone).

Paper Two, Question Six:

Contrast the anaesthetic considerations for patients undergoing radiofrequency ablation (RFA) of liver tumours with that of renal tumours.

Pass Rate: 18.2%

This question expects the candidate to consider differences in these procedures based on patient's issues, procedural issues and also anaesthetic issues.

Patients presenting with liver tumours for RFA tended to have a background history of hepatitis B or C infection with cirrhosis and associated complications while patients presenting with renal tumours such as renal cell carcinoma have risk factors such as smoking, obesity and hypertension with or without renal impairment.

Some of the expected procedural differences include the issues of positioning, prone versus supine, and its accompanying considerations such as the choice of anaesthesia, airway, use of paralysis, positioning of patients, protection of vulnerable areas, venous or airway access and risk of dislodgement of these access during the procedure.

Many candidates wasted time writing about the similarities of the 2 procedures (remote location or use of radiation) which did not earn them any credits as the question focuses mainly on the differences.

Paper Two, Question Seven:

A 32-year-old man with no known medical history is undergoing anterior fixation of C5/6 cervical spine fracture sustained in a road traffic accident 3 days ago. Induction and intubation are uneventful.

After the surgeon has cleaned and draped the patient, you noticed that the end-tidal CO₂ has decreased from 38 cmH₂O to 25 cmH₂O.

- A) Describe the possible causes and how they lead to decrease in end tidal CO₂. (50%)
- B) How would you manage the situation? (50%)

Pass Rate: 72.7%

This is a fairly common scenario when the end-tidal CO₂ decreases from the baseline but is not significant enough to imply a crisis situation.

Part A expects the candidate to give the possible causes and describe (based on the application of their knowledge of physiology and equipment) how these causes lead to a drop in the end tidal CO₂ level. Some examples include describing how pulmonary perfusion might have dropped, specific to this patient (neurogenic shock due to spinal cord injury, small pulmonary embolisms due to immobility, anaesthetic induced decreased venous return due to vasodilation, or direct myocardial depression, chronotropic or contractility), issues with ventilation or sampling (line) issues (condensation, leak etc).

Many candidates listed possible factors without describing how these factors lead to a drop in the CO₂. For those who tried to describe, some were confused between V/Q mismatch and dead space ventilation. Some included causes which do not usually occur this situation, such as oesophageal intubation or occlusion of the endotracheal tube due to biting (CO₂ will not be 25 cmH₂O) and one-lung ventilation (CO₂ level usually does not drop)

Part B expects the candidates to describe what they will do such as immediate management and how to diagnose and treat underlying causes simultaneously.

Most candidates seemed to be regurgitating the template answer for crisis management, without the context of the question, as a result simple manoeuvres such as placing the patient slightly head-down or decreasing the anaesthetic depth to correct hypotension, which is commonly practiced, are often missed out.

Paper Two, Question Eight:

A 60-year-old man, scheduled for robotic-assisted laparoscopic prostatectomy for prostate cancer, presents at the pre-anaesthetic clinic.

He has a history of hypertension, hyperlipidaemia, and impaired vision of the left eye due to chronic glaucoma. He expresses concern that his planned surgery would further deteriorate his vision, as his friend had visual loss after prostate surgery.

A) What are the pertinent points you need to elicit from the patient with regards to potential risk of eye complications? (30%)

B) Why is this patient at risk of postoperative visual loss? (30%)

C) What are perioperative strategies to reduce such complications? (40%)

Pass Rate: 36.4%

The expected answers for Part A include finding out a more detailed history (severity, the level of impairment, treatment, control of intraocular pressure (IOP) so far etc) of glaucoma in the impaired left eye as well as the presence of any issues with the right eye, presence and control of any other factors that may lead to history of, and perioperative visual impairment or loss, such as the hypertension or any other possible underlying comorbidities such as possible ischemic heart disease or stroke.

Some candidates missed out on control of hypertension or checking for comorbidities that might increase risks of visual impairment. A few candidates, instead of focusing on the history, wasted time describing risk counselling which is not required.

Part B expects the candidate to explain how IOP may increase during this surgery and how perfusion pressure of the eye may decrease in this surgery leading to a loss of vision.

Most candidates did not mention how perfusion pressure might be reduced leading to visual loss.

Some of the strategies that are expected for Part C include discussing with the patient's ophthalmologist monitoring or managing the IOP intraoperatively, assessing the severity of glaucoma if not done recently, discussing with the surgeon regarding risks and possible strategies (limiting the Trendelenburg or intraabdominal pressure), optimising comorbidities, intraoperative eye protection, pharmacological management (including avoiding anticholinergic drugs) as well as fluid and ventilation management.

Part C is generally well answered.

Overall, incomplete answers in Parts A and B contributed to some of the candidates failing this question.

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