



## SAMPLE STANDARDIZED ORAL EXAMINATION (SOE) QUESTIONS

### SESSION 1 – 35 MINUTES

A 56-year-old, 70 Kg, 5'8" tall man is brought to the operating room for a left upper lobectomy.

**HPI:** Patient noted the onset of a productive cough 6 weeks ago and an episode of hemoptysis 10 days ago. He was seen by a pulmonary specialist who noted a 2 cm mass in his left upper lobe on chest x-ray. Fiberoptic bronchoscopy revealed irregularity of the left upper lobe bronchus, and biopsy revealed carcinoma. Metastatic workup was negative.

**PMH:** Uncomplicated myocardial infarction 4 months ago. He notes angina with exercise over past month. A stress test 7 days ago showed minimal ST segment depression at a heart rate of 120 beats per min. without angina. An echocardiogram revealed an ejection fraction of 55%.

Medications include diltiazem and nitroglycerin PRN. He has no allergies. He smoked 2 packs of cigarettes per day for 25 years until 10 days ago. He drinks an occasional beer.

**PHYS:** P 72, BP 140/80, R 20, T 37.1°C. His airway appears normal. Chest auscultation reveals expiratory wheezes EXAM: over left posterior upper lung field. Cardiac exam is normal. He has no organomegaly or peripheral edema.

**X-RAY:** 2 cm mass and small infiltrate left upper lobe

**EKG:** Q waves in II, III, aVf with T wave inversion in same leads.

**LABS:** Hgb 14.5 gms/dl, normal electrolytes and normal coagulation studies.

He arrives in operating room at 10 a.m. with 1" nitropaste, having taken his diltiazem at 7 a.m.

### INTRA-OPERATIVE MANAGEMENT - 10 MINUTES

1. **Induction:** Would you induce with thiopental? Why/Why not? Propofol? Your choice? Why? The surgeon requests double-lumen tube. You respond? How do you confirm position? Is a right-sided tube appropriate? Why/why not?
2. **Anesthetic Selection:** Is nitrous oxide-opioid anesthesia appropriate? Why/why not? Your choice? Why? Would halothane be preferable if patient has reactive airway disease? Prefer another inhalation agent in this patient? Why?
3. **Intra-operative Hypoxia:** After 20 minutes of one-lung ventilation, SpO<sub>2</sub> decreased from 99% to 90%. Your interpretation and response? Rationale for therapeutic choices. What if SpO<sub>2</sub> is 80%?
4. **Massive Blood Loss:** The surgeon loses control of the pulmonary vein and the patient loses 1200 ml blood in two minutes. Two units of packed cells are available. How manage? Why? Blood pressure not responding to volume replacement. Your plan? Rationale. Ischemia on ECG. How does it influence your management? Your plan? Why?

## POST-OPERATIVE CARE - 15 MINUTES

1. Extubation Criteria: How will you decide suitability for extubation? Rationale. How does criteria for this patient differ from ASA-1 cholecystectomy patient? Explain.
2. Post-operative Ventilatory Support: Assume ABG at end of surgery with double-lumen ET tube and bilateral ventilation shows PaO<sub>2</sub> 65, PaCO<sub>2</sub> 58, pH 7.29 with F<sub>i</sub>O<sub>2</sub> .5 and spontaneous ventilation. Interpret. How will you proceed? Why? If decide to ventilate in ICU will you change ET tube? Why/Why not? Discuss ventilatory settings. Discuss IMV vs. PCV. Discuss PEEP.
3. Pain Management: Would PCA be a good choice? Why/Why not? Is thoracic epidural a better choice? Why/Why not? If epidural in place, what medications would you administer? Why?
4. Myocardial Ischemia: 8 hours after surgery patient complains of anterior chest pain and you note new S-T segment elevation on bedside monitor. How will you proceed? Why? 30 minutes later, his blood pressure is 80/30 and you note tachypnea and diffuse rales. Discuss evaluation and management.
5. Nerve Injury: Following extubation and at time of discharge from ICU, the patient complains of numbness over ulnar distribution of right forearm and hand. What might be the causes? How will you evaluate? Is there any treatment for this? What will you tell patient?
6. Jaundice: 4 days after surgery, the patient's bilirubin is 6.5 mg/dl. Surgeon questions if anesthesia might be the cause. You respond? Discuss further evaluation.

## ADDITIONAL TOPICS - 10 MINUTES

1. Obstetrical Anesthesia - Pre-eclampsia: Urgent C/S for fetal distress is scheduled for 19-year-old parturient who is pre-eclamptic and in active labor. She is receiving MgSO<sub>4</sub> and intermittent hydralazine. Blood pressure is 150/110. What would be your choice of anesthesia? Why? Discuss advantages/disadvantages of epidural. How would you control blood pressure? Why? What are your goals? Explain.
2. Post-CABG tamponade: A 65-year-old man underwent an uncomplicated CABG 16 hours earlier and was extubated 4 hours ago. In the past hour his BP fell from 110/70 to 70/50 and the CVP rose from 8 to 22 mmHg. What are the possible etiologies? How would you evaluate? Manage? If tamponade is suspected and mediastinal exploration is required, how would you provide anesthesia? Explain.
3. Temperature: A 48-year-old man is undergoing a radical prostatectomy during general anesthesia. Two hours into the operation, his esophageal temperature is 34.5°C. Would you treat? Why/Why not? If so, how? Thirty minutes later it has decreased to 33.5°C. Your management? Surgeon attributes a problem with bleeding to the hypothermia. Agree? Why/Why not? What might be the mechanism? Explain. How will decreased temperature influence your plans for extubation? Describe.

## SESSION 2 – 35 MINUTES

A 38-year-old, 50 Kg woman is scheduled for excision of an occipital glioma while in the sitting position. You are first to note a late systolic murmur, loudest at left sternal border. She has mild controlled hypertension. Medications include hydrochlorothiazide for 5 years and dexamethasone for 5 days. P 74, BP 135/80, R 16, Temp 37°C, Hgb 13 gm/dl, Na 140 mEq/l, K<sup>+</sup> 2.9 mEq/l.

## PRE-OPERATIVE EVALUATION - 10 MINUTES

1. Cardiac Status: Neurosurgeon asks what cardiac evaluation is needed. You respond? How affect your plan? Do you agree with sitting position? What if no intracardiac defect? Concerns if aortic stenosis is present?
2. ICP: How do you determine if ICP is increased preoperatively? Why important? If evidence for elevation, what steps could you take to reduce? Rationale.
3. Hypokalemia: Are you concerned about K<sup>+</sup> 2.9? Why/Why not? If so, explain. Would you delay surgery until corrected? What would be the endpoint of therapy? Explain. How would you manage K<sup>+</sup> if increase in ICP indicated need for emergency operation?
4. Hypertension: What are the implications of hypertension to anesthetic management? What if blood pressure 180/115? How would you proceed? Explain.

## INTRA-OPERATIVE MANAGEMENT - 15 MINUTES

1. Monitoring: Use PA or multi-orifice CVP catheter? Which? Why? During right IJ cannulation, patient coughs and becomes dyspneic. DDX? Would you obtain a CXR? Why/Why not? Blood pressure declines precipitously. Rx? Rationale.
2. Anesthesia Induction: Special precautions for this patient? Is propofol a good choice? If not, what would you select? Why? Lidocaine helpful? Intravenous or intratracheal? Opioid just as effective? Why/Why not? Is midazolam of any value? Why/Why not?
3. Anesthesia Maintenance: N<sub>2</sub>O contraindicated? Why/why not? If so, is “balanced anesthesia” ruled out? Is relaxation needed? Why/Why not? Your management? Rationale.
4. ICP: Surgeon complains that the dura is taut. Your response (Rx)? How much hyperventilation is enough? Deepening anesthesia appropriate? Would you give mannitol? How much? Is there a maximum dose? Why? Is deliberate hypotension beneficial to decrease ICP? Management? How would you accomplish? Why?
5. Hypotension: Sudden blood pressure decrease to 50/35. DDX? Mechanism? How establish Dx air embolism? Presume air embolism has occurred. How would you manage? Why is air embolism risk greater with cranial operation than with other surgical sites if patient is prone? DDX? Tx?
6. Fluid Therapy: What fluid would you use for maintenance? Why? Dextrose content important? Why? How would you differentiate osmotic diuresis from overhydration? How do you determine correct amount of fluid to administer in this situation?

## ADDITIONAL TOPICS - 10 MINUTES

1. Pediatric Anesthesia - T - E Fistula: What are the major anesthetic risks for a patient with T-E fistula? Does the type of fistula alter approach? How? A 2.5 Kg newborn from a 34-week gestation presents with an “H”

type fistula. Would you insist on any specific preanesthetic preparations? Which? Why? How would you induce anesthesia? Is a circle system appropriate? Why/Why not? Plans for post-op extubation or continued mechanical ventilation? Rationale for each.

2. Outpatient Regional Anesthesia: A healthy 25-year-old man requests epidural anesthesia for repair of an inguinal hernia as an outpatient. Agree? Why/Why not? If choose epidural, what drugs? Why? Criteria used to discharge patient to home? Suppose an inadvertent dural puncture occurs. What would you do? Would you do a prophylactic blood patch? Why/why not? Would you admit patient to hospital? Why/Why not?
3. Anaphylactic reaction: You are called urgently to radiology where you find a 25-year-old woman undergoing an arteriogram for upper extremity ischemia. She is hypotensive with urticaria, stridor and sternal retraction. What would you do? What is the likely cause? Mechanism of signs and symptoms? Rationale. How proceed if cardiac arrest ensues?