

THE AMERICAN BOARD OF ANESTHESIOLOGY ®
4101 Lake Boone Trail, Raleigh, NC 27607-7506
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Sample Oral Examination 1
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 1 - SESSION 1

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 EXAM: P 72, BP 140/80, R 20, T 37.1°C. His airway appears normal. Chest auscultation reveals expiratory wheezes 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 10:00 A.M. with 1" nitropaste, having taken his diltiazem at 7:00 A.M.

ABA SAMPLE ORAL EXAMINATION 1 - SESSION 1 (Continued)

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, SpO₂ decreased from 99% to 90%. Your interpretation and response? Rationale for therapeutic choices. What if SpO₂ 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 PaO₂ 65, PaCO₂ 58, pH 7.29 with F_IO₂ .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 MgSO₄ 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.

ABA SAMPLE ORAL EXAMINATION 1 - SESSION 2

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⁺ 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⁺ 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⁺ 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: N₂O 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?

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Sample Oral Examination 2
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 2 - SESSION 1

Session 1 – 35 Minutes

A 40-year-old, 60 Kg, 5'6" tall man is brought to radiology for a head CT scan followed by possible craniotomy.

- HPI:** Patient was involved in a single automobile motor vehicle accident with car hitting a tree 3 hours ago. He was the driver and only occupant. He was found by paramedics, unconscious with a P of 110, BP 90/40, breathing spontaneously. An IV with normal saline was started and he was transported to the emergency room. He became semiconscious in ER and is agitated, disoriented and uncooperative. Cervical spine x-rays do not show any fracture or dislocation. Abdominal paracentesis is negative. He has a closed fracture of his left femur which has been placed in a splint.
- PMH:** Unknown other than a Medic Alert bracelet that states he has diabetes mellitus.
- PHYS EXAM:** His face and neck appear anatomically normal. Further airway exam is not possible. Chest auscultation reveals decreased breath sounds over left chest. Heart and abdominal exams are normal. He has a discoloration indicating a hematoma over left femoral fracture site.
- XRAY:** Fractured left 4th and 5th ribs laterally without effusion, pneumothorax or infiltrates. Mediastinum is normal.
- LABS:** Hgb 9.8 gms/dl, serum glucose 320 mg/dl.

He arrives in the radiology suite with two 16-gauge upper extremity IV's, having received 10 units of regular insulin IV 30 minutes ago in response to the above glucose level. He also has a Foley catheter with 200 ml of clear, yellow urine in the bag. He has received 2 liters of normal saline since the accident.

ABA SAMPLE ORAL EXAMINATION 2 - SESSION 1 (Continued)

INTRA-OPERATIVE MANAGEMENT - 10 minutes

1. Monitoring: How would you determine the appropriate rate of intravenous fluid infusion? Explain. Different if mannitol given? Why/Why not? Would an end-tidal CO₂ monitor eliminate the need to measure PaCO₂? Why/Why not? What are sources of error with this monitor? Explain.
2. Anesthetic Induction: How would you sedate/anesthetize patient for CT scan? Explain. If elect general anesthesia, would an awake intubation be a satisfactory approach to this patient? Why/Why not? How would you induce anesthesia? Rationale. What is effect of laryngoscopy and intubation on ICP? How can you minimize this? Explain.
3. Maintenance of Anesthesia: For subsequent craniotomy (subdural hematoma) would you favor fentanyl as the primary anesthetic? Why/Why not? A colleague suggests isoflurane. You respond? Reasons? Use N₂O? Why/Why not? How will you manage alveolar ventilation in relation to anesthetic administration? Why? Does choice of anesthetic agent influence this decision? If so, how? If not, why not? Is propofol infusion an appropriate choice for maintenance? Why/Why not?
4. Prolonged Neuromuscular Blockade: Suppose you had injected 120 mg succinylcholine following 1 mg vecuronium for initial intubation. 50 minutes later nerve stimulator shows no twitches. What might be the cause? Evaluation? Management? Is phase II block likely? Why/Why not? What is it? Why might it occur? How would you manage? Explain. Subsequent post-operative evaluation?

POST-OPERATIVE CARE - 15 minutes

1. Difficult Ventilation: One hour post-op, the patient is being mechanically ventilated and you note increased difficulty in inflating lungs. Evaluation? Management? Rationale? If the patient develops a pneumothorax, what would you expect the end-tidal CO₂ to show? Explain.
2. Intracranial Pressure: Following craniotomy with evacuation of hematoma, an intracranial pressure monitoring device (hollow screw) is in place. ICP is noted to be 30 mmHg. Is this of concern? Why? How would you manage? Why?
3. Hypothermia: Nurse in ICU reports rectal temperature is 33°C. Is this dangerous? Why/Why not? Treat? Rationale.
4. Electrolyte Imbalance: Serum sodium is 125 mEq/L. What might be the cause? Evaluation? Management? Rationale.
5. Hypoxemia/Fat Embolus: 48 hours post-op, the patient is still mechanically ventilated. He has developed progressive hypoxemia with SpO₂ 91% on F_iO₂ 1.0 without PEEP. Chest x-ray shows increasing bilateral infiltrates. Discuss possible causes. How would you make diagnosis of fat embolus? If suspect this, how would you treat? Why?

ADDITIONAL TOPICS - 10 minutes

1. Mitral Stenosis and Labor: Should epidural anesthesia be used for labor analgesia in a patient with mitral stenosis? Why/why not? Risks? Benefits? What potential complications does such a patient present? How do you minimize risk for cardiac decompensation if cesarean section required? Increase level of block? Choose general anesthesia? How would you manage?
2. Liver Transplantation: A 38-year-old woman with post-necrotic cirrhosis requires an orthotopic liver transplant. What physiologic derangements would you expect pre-operatively? How would you test for these? What would be your anesthetic of choice for this patient? Why? What are your major concerns during the anhepatic phase of the procedure? Why? What problems are likely in the immediate reperfusion phase? Why? How treat?
3. Pain Therapy: A 32-year-old, previously healthy, construction worker fell from a scaffolding fracturing 5 ribs on the right side. You are called to advise on analgesic therapy due to splinting, atelectasis and increasing inspired oxygen requirement. How would you proceed? Explain. Assume no other injuries. What therapy would you recommend? Why? Technique? Agents? Monitoring?

ABA SAMPLE ORAL EXAMINATION 2 - SESSION 2

Session 2 – 35 Minutes

A 4-year-old, 20 Kg, boy is scheduled for an emergency laparotomy and possible appendectomy. He has been intermittently vomiting for two days. His mother tells you that a male sibling “died during surgery at the age of 6 years.” His vital signs are P 120, BP 90/60, R 25, oral T 38.5°C.

PRE-OPERATIVE EVALUATION - 10 minutes

1. Evaluation of Fluid and Electrolyte Status: What is the cause of the elevated temperature? Significance? How would you evaluate fluid status? What electrolyte abnormalities are likely to be present? How do such abnormalities develop? Should fluid and electrolyte abnormalities be corrected before proceeding with surgery? What is CO₂ on electrolyte panel were 14 meq/L? If correction is elected, how long should surgery be delayed? Rationale.
2. Evaluation of Family History: What else would you want to know regarding family history in light of what mother has related? Any lab tests that would be useful? Necessary? Explain. Can Dx of MH be “confirmed”? How?
3. Temperature: Should his temperature be decreased prior to anesthesia? Why/Why not? How does elevated temperature influence anesthesia? Uptake? Emergence?
4. Premedication: Would you premedicate this child? Why/Why not? With what? Why? Is Dantrolene indicated? Explain.

INTRA-OPERATIVE MANAGEMENT - 15 minutes

1. Anesthesia Delivery System: Would an adult circle system be acceptable for this child? Why/Why not? Compare the circle system with the Bain circuit in regard to dead space, resistance, inspiratory flow rates. Would you use a cuffed or uncuffed ET tube in this patient? Explain. Humidify gases? Why/Why not? How?
2. Induction of General Anesthesia: How would you induce general anesthesia? What induction agent? Why? Hemodynamic effects of various agents in dehydrated patient? Which muscle relaxant for intubation? Why? If one were to use succinylcholine, what would you do if masseter spasm occurs during rapid sequence induction in this patient? In a “normal” child? Explain.
3. Anesthetic Maintenance: Your choice? Why? Will a nitrous-opioid technique guarantee amnesia? Why/Why not? How avoid recall? Is the choice of non-depolarizing relaxant important? Why/Why not? To what end-point do you titrate dose? Why? Are there advantages of sevoflurane over halothane for maintenance? Discuss.
4. Intra-operative Fluid Management: What type of fluid would you give intra-operatively? Why? At what rate? Why? What is “third space”? How does its presence effect fluid requirements? Explain.
5. Hypotension/Sepsis: Laparotomy reveals a perforated appendix with marked purulence and early abscess formation. 45 minutes into exploration the patient becomes hypotensive with blood pressure 60/20, P 135 and T 39.2°C. How will you evaluate cause? Assume evaluation points to sepsis as principal etiology. Discuss your approach to therapy.

ADDITIONAL TOPICS - 10 minutes

1. Abdominal Aneurysm: A 63-year-old man is scheduled for abdominal aortic aneurysm repair. He is a heavy smoker and has moderate COPD. You wish to minimize post-op pulmonary complications and the need for prolonged ventilatory support. What anesthetic technique would you use? Defend choice. What risks are associated with the application and removal of aortic clamp? How minimize?
2. Obesity: A 28-year-old, 150 Kg woman is to have transposition of her ulnar nerve near the elbow. Is intravenous regional appropriate? Why? Why not? Preferred alternative regional technique? Why? How determine choice and dose of local anesthetic? Patient refuses regional. How proceed with general? Mechanically ventilate? Why/Why not? If so, how to set volume and rate? Why?
3. Post-operative Hypotension: You are called to PACU to see a 75-year-old patient who had a TURP with spinal anesthesia which is still at a T10 level. Blood pressure has decreased from 110/60 to 80/50. DDX? Pulse increased from 80 to 110. Rx? Assume blood pressure 70/50 after IL of crystalloid. Next step? Hgb 9.5 mg/dl. Transfuse? Endpoint(s) of Rx?

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Sample Oral Examination 3

Session 1 (35 minutes)

Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 3 – SESSION 1

Session 1 - 35 Minutes

A 48-year-old, 122 Kg, 6' tall man is brought to the operating room for uvulopalatopharyngoplasty and mandibular osteotomies for obstructive sleep apnea.

- HPI:** Increased snoring and daytime somnolence for past year. Sleep study reveals multiple apneic episodes with arterial desaturations to 82%. Denies dyspnea on exertion and comfortably climbs 2 flights of stairs. He did not tolerate a trial of nasal CPAP.
- PMH:** Hypertension since age 26, treated with enalapril (ACE inhibitor) which was taken this morning. At a pre-operative evaluation 2 days ago, his blood pressure was 165/83. His weight has been constant for 4 years. He does not smoke or drink alcohol. He has no allergies.
- PHYS EXAM:** P 82, BP 172/88, R 18, T 37°C. Normal mouth opening, a large tongue, a short, thick neck and inability to view uvula or tonsils. Cardiac and lung exam are normal. No organomegaly or peripheral edema.
- XRAY:** Cardiomegaly and clear lung fields.
- EKG:** Left ventricular hypertrophy with normal T-wave and ST segments.
- LABS:** Hgb is 15.5 gms/dl, BUN 22 mg/dl, creatinine 1.4 mg/dl, room air ABG - PaO₂ 85 mmHg, PaCO₂ 36 mmHg, pH 7.42.

ABA SAMPLE ORAL EXAMINATION QUESTION 3 – SESSION 1 (Continued)

A. INTRA-OPERATIVE MANAGEMENT – 10 Minutes

1. Selection of Monitors: Your choice for blood pressure monitoring? Basis for choice. Is this patient likely to show blood pressure lability during anesthesia and surgery? Explain. Implications for management? Additional monitoring required (V5 lead, echo, CVP or PA catheter)? If so, why?
2. Management of Airway/Induction: Surgeon requests nasal intubation. Is this patient's airway likely to be difficult to secure? Why? Will you intubate before or after induction? Explain basis of choice. Is a fiberoptic technique indicated? Why/why not? Do you anticipate difficulties in performing nasal fiberoptic intubation? Explain. Can you avoid these potential difficulties in this patient? Choice of induction drugs? Why for your selection of specific drugs (hypnotics, relaxants)?
3. Maintenance of Anesthesia: Surgeon anticipates about 3-4 hours for operation. After securing airway and induction, what are your choices for anesthesia maintenance? Why for choices? Will you use N2O in this patient? Why/why not? Sevoflurane available for case. Is this an appropriate choice? Why/why not? Potential renal injury (fluoride) in this patient? Explain. Muscle relaxant(s) for this case? Explain reasons for choice.
4. Hypoxemia: SpO2 falls from 98% to 93% over the hour following induction. Causes? How will you establish cause? If distal airway collapse, how will you treat? PEEP of 7 cm H2O in circuit has no effect. Why? Is more PEEP indicated? N2O now off and FIO2 = 97%. Problems with high FIO2 in this patient? Explain. What will you do?

B. POST-OPERATIVE CARE – 15 Minutes

1. Extubation: Patient slow to emerge and remains intubated, breathing spontaneously. His jaw is wired closed. What are your criteria for extubation? Why would you leave the patient intubated? If intubated for several hours, should he be ventilated? Why/why not? If not, how will you prevent atelectasis? At time of extubation (ETT was nasotracheal) patient develops severe nosebleed. Management?
2. Severe Hypertension: After extubation, patient's blood pressure 230/115 and P 110. Causes? Your concerns about this BP? Acute management? Why? How do you determine use of beta-blocker versus vasodilator?
3. Severe Nausea: Patient has vomited twice and has severe nausea. Why is this occurring? Is it a concern? Why? Is an NG tube indicated? Benefit? Other therapies to control nausea? Rationale.
4. Pain Management after Osteotomy: Patient indicates severe pain at site of osteotomy. What can be done? Is a PCA regimen appropriate? Why/why not? Despite loading dose of morphine (15 mg) and lockout interval of 6 minutes (10 mg/hr), patient still uncomfortable. What will you do? Explain basis of management choice(s).
5. Stridor Occurring 3 Hours Post-Operatively: In ICU, nurse calls to inform you of worsening stridor. How will you assess? Possible causes? Your management and reasons.
6. Myocardial Ischemia: 18 hours after surgery patient complains of left chest and jaw pain. How will you evaluate? EKG shows ST segment elevation in II, III, aVf. What will you do? Rationale.

C. ADDITIONAL TOPICS – 10 Minutes

1. Pediatric Neurosurgical Anesthesia: A 3-year-old needs MRI and angiogram for diagnosis and localization of intracranial lesion. What are special concerns? How plan to monitor? Any special issues created by distance from patient? Sedation or GA? Why? Drugs to use? Why? Endotracheal anesthesia vs. LMA? Pros and Cons? Management of possible increased ICP? How handle if need angiogram after MRI? Rationale.
2. Paraplegia and Anesthetic Management: A 26-year-old woman T4 paraplegic is scheduled to undergo debridement of an ischemic decubitus ulcer. Since she has no feeling in the operative area, the surgeon requests that the case be done under sedation. Is Monitored Anesthesia Care with IV sedation appropriate? Why/why not? Is a spinal anesthetic possible? Pro/con. MAC is chosen and 10 minutes into the procedure, the patient's blood pressure rises to 220/125. Why has this happened? How will you treat? Why?
3. Latex Allergy: A 35-year-old woman with a history of latex allergy is scheduled for shoulder arthroscopy. How will you prepare her preoperatively? What precautions are needed perioperatively? How will you achieve them? Anesthetic plan? Why? Patient suddenly develops severe hypotension intraoperatively. Differential diagnosis? What other presentations can occur if cause is latex allergy? How will you manage? Rationale. When will you extubate? Explain.

ABA SAMPLE ORAL EXAMINATION 3 – SESSION 2

Session 2 – 35 Minutes

A 28-year-old, 75 Kg, 5'6" tall primigravida is scheduled for emergency cesarean section at 38 weeks gestation. She has pregnancy-induced hypertension for which she is receiving hydralazine and magnesium sulfate. She has been treated with hydrochlorothiazide for the past 5 weeks. Past history is significant for opioid addiction for which she takes methadone. Cesarean section is planned due to development of late decelerations of fetal heart rate. Her vital signs are P 110, BP 170/100, R 22, T 37.4°C and her Hgb is 9.5 gm/dl.

A. PRE-OPERATIVE EVALUATION – 10 Minutes

1. Preeclampsia: What is the importance of her hypertension to anesthetic care? What are potential effects of magnesium therapy on mother and fetus? How would you monitor and dose her magnesium sulfate? Why? Why is magnesium effective in this setting? Assume inadvertent Mg overdose. How Dx? Rx? Explain.
2. Fetal Distress: What is late deceleration? Significance? Are other diagnostic tests indicated to confirm fetal distress? Which? Why? Assume fetal scalp pH=7.20. Treat? Why/why not? If so, how?
3. Opioid Addiction: Are there special considerations in pre-op evaluation and plans for intra-operative management regarding her opioid use? Discuss. Should opioids be used? If so, which? When? Effects on fetus/newborn? Management different if she is receiving naltrexone (rather than methadone)? Explain.
4. Pre-medication: Would you administer any additional medications pre-operatively; specifically antacids/metoclopramide/ H2 blockers? Which/Why? Side effects/toxicity of these drugs? Discuss. If she were receiving methadone or opioids would they alter the activity of any of the drugs you gave? If so, how/why?

B. INTRA-OPERATIVE MANAGEMENT – 15 Minutes

1. Selection of Anesthesia: Would you choose a regional or a general anesthetic? Rationale for choice. Suppose patient had a functioning epidural catheter in place. Does this influence your choice? How? What local anesthetic would you use to “top up” epidural? Why? What level of anesthesia is desired? Why?
2. General Anesthesia: Attempts to attain an adequate level with epidural fail and examination of catheter shows it to have pulled out during transfer to operating table. How would you proceed? Fetal distress has become greater and surgeon insists on immediate delivery. Your approach? Rationale.
3. Intra-operative Hypertension: After rapid sequence induction and intubation, surgeon begins and patient's blood pressure increases to 240/140. Cause? Significance to mother? To fetus? Rx? Why?
4. Neonatal Resuscitation: The child is delivered covered with meconium and has an APGAR of 2. Your interpretation? Plan of action for resuscitation? Rationale. Would you use bicarbonate? Why/why not? When, if at all? Explain.
5. Hyperthermia: Shortly after delivering placenta, you note gradual rise in mother's temperature from 36.5° to 38.8°C over 40 minutes. Discuss possible causes, evaluation and treatment.
6. Diffuse Bleeding: Surgeon notes diffuse oozing after delivery of placenta. How will you evaluate? Why? Suppose evidence for DIC. How will you manage? Why? What is mechanism of DIC in this patient?

C. ADDITIONAL TOPICS – 10 Minutes

1. Intravenous Drug Use and Anesthesia: A 42-year-old white woman, heavy intravenous drug abuser is scheduled for an urgent incision and drainage of a large abscess on her left arm. She has not had any narcotic for 18 hours and says she feels like she's starting to have withdrawal. How treat? Explain rationale. She refuses regional and wants general anesthesia. Defend agent selection. Post-op management of pain and addiction? Rationale.
2. Cardiovascular surgery - anticoagulation: A patient about to undergo CABG surgery has ACT of 120 seconds. Following administration of 300 units/Kg of heparin his ACT is 195 seconds. Is this adequate? What ACT is expected? Etiology of low ACT? How manage? Will this affect your plans for protamine administration? Why/why not? If it does, how? At the end of the procedure you administer protamine. BP decreases to 80/50, PA pressure increases to 50/30. DDx? Rx? Why? How to avoid this problem?
3. Complication of hyperalimentation: A 59-year-old man with regional enteritis is receiving parenteral nutrition. What are the potential complications of this therapy? Assume patient also has COPD. What relationship might hyperalimentation have to ventilation? How can you modify these effects? Is it appropriate to maintain hyperalimentation during surgical procedure? Why/why not?

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Sample Oral Examination 4
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 4 – SESSION 1

Session 1 – 35 Minutes

A 72-year-old 80 Kg, 5'10" tall man is brought to the operating room at 1:00 PM for a coronary artery bypass graft (CABG).

- HPI:** 8 months ago noted onset of angina, dyspnea and decreased exercise tolerance.
2 months ago hospitalized for pulmonary edema.
3 days ago hospitalized for pulmonary edema with dyspnea and angina.
Cardiac catheterization this AM revealed high grade LAD and circumflex coronary artery stenosis, diffuse hypokinesis, ejection fraction 25% and LVEDP 20 mmHg prior to ventriculography.
- PMH:** Healthy prior to present illness. Non-smoker and rarely drinks a glass of wine. No allergies. Medications include furosemide 40 mg BID, digoxin 0.25 mg QD and nifedipine XL 60 mg QD taken this morning.
- Since admission he has been receiving infusions of nitroglycerin 40 mcg/min, dopamine 5 mcg/Kg/min and heparin 1000 units/hour.
- PHYS EXAM:** P 90, BP 110/70, R 16, T 37.2°C.
CVP 12 mmHg, PAP 35/19 mmHg, PAOP 17 mmHg and CI 2.5 L/min/m².
He has a normal airway. He has rales at the lung bases bilaterally.
- XRAY:** Prominent vascular markings and mild cardiomegaly.
- EKG:** ST segment depression and T wave inversion in II, III, aVF, V₄₋₆.
- LABS:** Hgb 14 gms/dl, Na 142 meq/L, K 3.2 meq/L, C1 101 meq/L, HCO₃ 25 meq/L, BUN 28 mg/dl, creatinine 1.2 mg/dl, PTT 48 sec, normal liver function tests. ABG while receiving oxygen at 3L nasal cannula are PaO₂ 76 mmHg, PaCO₂ 36 mmHg, pH 7.42.

On arrival in the operating room a 20 gauge radial arterial catheter, 16 gauge peripheral IV, 8.5 French internal jugular introducer with a pulmonary artery catheter, and a foley catheter are in place.

ABA SAMPLE ORAL EXAMINATION 4 – SESSION 1 (Continued)

A. INTRA-OPERATIVE MANAGEMENT – 10 Minutes

1. Monitoring: The patient's PA catheter is accidentally pulled out during transfer to the OR table. Do you need to replace PA catheter? Why/why not? If yes, would you insert a PA catheter with or without SvO₂? Why/why not? What added benefit is provided by SvO₂?
2. Anesthesia Induction: Is ketamine a suitable induction agent? Why/why not? What are your drug preferences for induction? Rationale. During induction the patient's blood pressure falls from 110/70 to 85/60 while heart rate remains 90-95. Is treatment indicated? Why/why not? If so, with what? Why? What if ST segment on precordial lead falls further?
3. Anesthetic Maintenance: Assume "fast tracking" with desire to extubate soon after surgery. What agents will you select? Why? If patient not a candidate, explain why and alternative intraop plan.
4. Discontinuation of CPB: After completion of CABG attempts to discontinue CPB results in mean arterial pressure of 50 with poor arterial pressure up-stroke on monitor and sluggish appearing heart. How will you proceed? Why? How do you determine choice of therapy between fluids, inotropics, vasoconstrictors, pacemaker, etc.? Hematocrit is 24%. Should it be higher? Why/why not?

B. POST-OPERATIVE CARE – 15 Minutes

1. Hypothermia: One hour after admission to the ICU, the patient's core temperature is 34.5°C. Concerned? Why? What are effects of hypothermia on CV function? Coagulation? If patient is shivering, would you treat? Why? If so, how? Why?
2. Post-op Sedation/Analgesia: 90 minutes after arrival in ICU, the nurse performs endotracheal suction. The patient suddenly opens eyes, struggles and vigorously shakes his head. Would you extubate or sedate? Why? What are your criteria for extubation? Assume not ready for extubation, what agent(s) will you use? Why? After 4 hours of stable vital functions, patient once again exhibits sudden arousal despite your sedation orders. What do you do now? Rationale.
3. Hemodynamic Deterioration: Between 4:00 and 8:00 AM on the first post-operative day, the CVP increases progressively from 10 to 18 mmHg and the MAP decreases from 70 to 50 mmHg. DDX? How do you distinguish RV failure vs. cardiac tamponade? Chest tube drainage stops completely. PAOP has risen to same degree as CVP. How treat while awaiting transthoracic echo examination? Surgeon suggests norepinephrine infusion. Agree? MAP rises to 70, but cardiac index is 1.5. Observe or treat during echo exam? Explain. Echo reveals tamponade. How would this be managed?
4. Oliguria: On post-operative day one, the patient's urine output has decreased to 15 ml/hour for 2 hours. What are the causes of oliguria in this patient? How to determine? Treat? Rationale.
5. Dysrhythmia: On post-operative day 2, the patient suddenly develops irregular HR. How will you evaluate? Assume PVCs with blood pressure 120/70. How will you treat? Why? What if blood pressure 70/40? What might be the cause? Assume furosemide 40 mg has been administered twice over previous 8 hours. Further tests? K is 3.1 meq/L. Give K+? If so, how?

C. ADDITIONAL TOPICS – 10 Minutes

1. Obstetrics and neonatal resuscitation: A 22-year-old pregnant woman has a breech presentation. She is in the delivery room with a functioning epidural. The obstetrician is unable to deliver infant's head and asks for uterine relaxation. How proceed? Is halothane for 5 min. by mask reasonable? Why/why not? If ineffective, next plan? After delivery newborn is flaccid with P60. Associate caring for mother. Priorities for resuscitation? Give NaHCO₃? Why/why not?
2. Head trauma: A 22-year-old man is disoriented and agitated having been unconscious following a motorcycle accident. You are called to ER to provide anesthesia care for a head CT scan. Will you sedate the patient? Why/why not? What evaluation should be performed? C-spine? Chest x-ray? How will results of your evaluation affect your anesthetic management? If no other injuries are found, how will you anesthetize? Explain.
3. Pheochromocytoma: A 48 year old man with pheochromocytoma is admitted. You are consulted regarding management. What will you advise? Later he comes to surgery with good hemodynamic control with propranolol and dibenzylamine. What induction and maintenance anesthetic agents would you select? Rationale? During resection MAP increases from 90 to 160. Management? How might you prevent further episodes? Explain.

ABA SAMPLE ORAL EXAMINATION 4 – SESSION 2

Session 2 – 35 Minutes

A 40-year-old, 50 Kg, 5'2" tall woman is scheduled for an abdominal hysterectomy for menorrhagia. She has a history of myasthenia gravis and a hiatal hernia with esophageal reflux. Her medications include pyridostigmine (Mestinon) 360 mg/day, prednisone 15 mg/day and antacids. Vital signs are P 80, BP 120/80, R 18, T 37°C. Her Hgb is 9.3 gms/dl.

A. PRE-OPERATIVE EVALUATION – 10 Minutes

1. Myasthenia Gravis: What are the anesthetic concerns with myasthenia gravis? How would you assess the adequacy of therapy? How would you manage medications pre-operatively? Should she have PFTs pre-op? If so, which? Why? What do you expect if therapy adequate.
2. Anemia: Are you surprised that this patient is anemic? Etiologies? Will you transfuse this patient prior to surgery? Why/why not? Would it make a difference if her anemia were acute or chronic? Why/why not? What is your target Hgb/Hct? Why?
3. Hiatal Hernia: Of what importance is the history of hiatal hernia with reflux? Does the severity of reflux affect the risk of aspiration? How would you determine the severity of reflux? What can/should you do pre-operatively to decrease the risk of reflux and aspiration? Does the history of hiatal hernia with reflux mandate a rapid sequence anesthetic induction and tracheal intubation? Why?
4. Steroid Therapy: Does chronic steroid therapy affect anesthetic management? How? Is usual daily dose of 15 mg prednisone sufficient for intra-operative purposes? Why/why not? How do you recognize adrenal insufficiency during general anesthesia? Are there risks in administering high dose hydrocortisone (100 mg) preop? Discuss.

B. INTRA-OPERATIVE MANAGEMENT – 15 Minutes

1. Selection of Monitors: Is train-of-four monitoring reliable in myasthenia? Would it indicate the need/non-need for a muscle relaxant for this operation? Does her anemia influence your ability to perform SpO₂ monitoring by oximeter? Discuss. Would you monitor ETCO₂? Why? Is there benefit to assessing waveform or is ETCO₂ value alone sufficient? Explain.
2. Anesthetic Technique: Would regional anesthesia be an acceptable technique for this patient? Why/why not? Discuss advantages/disadvantages. If patient consented to regional technique, would you suggest spinal or epidural approach? Explain choice.
3. Anesthetic maintenance: The patient prefers to be asleep. You respond? Explain. How would you induce general anesthesia? Rationale for choice. Would you avoid succinylcholine for intubation? Why/why not? If surgeon can perform hysterectomy in 50 minutes, would a succinylcholine infusion be preferable to other relaxants? Why/why not? Could you provide satisfactory anesthesia without a relaxant? Explain. Would you favor a potent inhalation anesthetic or opioid technique? Defend choice.
4. Bleeding: During pelvic dissection, the patient begins to bleed excessively. How will you determine when to transfuse? After administration of 2 units packed cells, the patient continues to bleed. Blood pressure is 80/40 and pulse is 105. There is no blood available. What will you do? Is FFP indicated? Why/why not? You note her urine is becoming red. Why might this be happening? How will you evaluate? Manage? Why?
5. Pulse Oximeter: During the procedure the oximeter alarms and you note a saturation of 75%. Discuss your approach. How would you respond if methylene blue had just been administered to determine ureteral integrity? Explain.
6. Extubation: How will you evaluate suitability for extubation in this patient? If you used a non-depolarizing relaxant, would you reverse? If so, how? Why?

C. ADDITIONAL TOPICS – 10 Minutes

1. Pediatrics - cleft palate repair: Healthy 18-month-old 15 kg boy for cleft palate repair. Venous access mandatory pre-induction? Why/why not? How induce anesthesia? Adult circle system acceptable? Why/why not? If mechanically ventilated, how set ventilator? Why? Compare settings for V_E and V_T to normal. Different? Why? Following extubation in PACU, he has respiratory distress and coughs up blood. Evaluation? Management?
2. Management of a burned patient: You are called to the ER for consultation about a patient with burns to the arms, chest and face. What are your specific concerns? How do you decide whether or not tracheal intubation is required? Discuss airway management. How do you plan fluid therapy? Endpoints?
3. Regional anesthesia and COPD: A 50-year-old man with COPD and a productive cough is scheduled for emergency exploration for probable testicular torsion. PFT's 3 months ago showed FVC 3.0 L, FEV1 1.0 L, no improvement with bronchodilators, and room air PaO₂ 65, PaCO₂ 48, pH 7.40. How interpret? Repeat? Why/why not? Patient asks if regional anesthesia would be safest for him. You respond? Assume he prefers regional, how would you proceed? Ten minutes after spinal injection patient complains of difficulty breathing. Ddx? Rx? Assume sensory level is T4. Does this contribute? Why/why not? Management? Explain.

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Sample Oral Examination 5
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 5 - SESSION 1

Session 1 - 35 Minutes

A 38-year-old, 100 Kg, 5'5" tall woman is brought to the operating room for drainage of a subhepatic abscess.

HPI: The patient underwent a laparoscopic cholecystectomy for cholecystitis and cholelithiasis four days ago. Subsequently she developed fever, leucocytosis, abdominal pain and tenderness, and was hospitalized 48 hours ago.

Abdominal CT showed a large right subhepatic collection that could not be adequately drained by interventional radiology. She is receiving antibiotics (gentamycin, piperacillin) and intramuscular morphine for pain. She has been NPO since admission and is receiving D5 1/2NS through a 20 gauge peripheral IV catheter.

PMH: She has juvenile onset (Type I) diabetes mellitus since age 8, complicated by renal insufficiency for the past 18 months. BUN and creatinine have been stable for 6 months at 54 and 2.8 mg/dl respectively. Since hospitalized 48 hours ago, urine output has averaged 500 ml per 8-hour shift.

Her medications prior to admission have been insulin - NPH 30 units in AM and 10 units in PM; regular 15 units in AM and 20 units in PM. Since admission she has been receiving regular insulin by sliding scale, and received 5 units IV 2 hours ago for a serum glucose of 280 mg/dl. She has no allergies and does not smoke or use illicit drugs.

PHYS P 104, BP 137/75, R 26, T 38.4°C.

EXAM: She is awake, alert and well oriented. Her airway is a class III, with poor visualization of posterior pharynx, a large tongue and prominent upper incisors but good neck mobility and mouth opening. Chest auscultation reveals bi-basilar crackling rales. Cardiac exam is normal. Abdominal exam reveals diffuse tenderness. She has no peripheral edema.

XRAY: Mild right basilar atelectasis.

LABS: Hgb 11 gms/dl, WBC 18,000, Na 134 meq/L, K 5.6 meq/L, C1 95 meq/L, CO2 20 meq/L, BUN 68 mg/dl, Creatinine 3.2 mg/dl, glucose 160 mg/dl.

Her anesthesiologist from previous surgery is unavailable to provide anesthesia, but records indicate a difficult intubation with 3 attempts using a #4 miller blade. He was only able to visualize posterior arytenoids. The remainder of the 2-hour anesthetic was uneventful.

ABA SAMPLE ORAL EXAMINATION 5 – SESSION 1 (Continued)

A. INTRA-OPERATIVE MANAGEMENT – 10 Minutes

1. Anesthetic Choice: Your colleague, who provided general anesthesia previously, recommends regional anesthesia because of airway difficulties. Agree? Why/why not? Spinal? Epidural? Would you feel the same if she weighed 55 Kg? Why/why not?
2. Induction: Is a rapid sequence induction appropriate? Why/why not? If yes, would ketamine be preferable to thiopental? Etomidate? Propofol? Why for each? If not, how would you secure the airway prior to induction? Would fiberoptic laryngoscopy be preferable to blind nasal intubation? Why/why not? Would sedation with midazolam and fentanyl be appropriate prior to awake intubation? If not, how would you achieve patient comfort? Rationale.
3. General Anesthesia: Surgery is expected to take less than one hour. Would a very insoluble inhaled agent be preferable to isoflurane-O₂ for this patient? Why/why not? If yes, would sevoflurane be preferable to desflurane? Why/why not? Does renal disease alter your choice? Why?
4. Ventilation: Peak airway pressures are 50 mmHg shortly after intubation. Could obesity cause this? Other causes? How evaluate? How would you differentiate restrictive problem due to obesity vs. aspiration? Versus endobronchial intubation? Versus bronchospasm? Most likely Dx here? How manage? Rationale.

B. POST-OPERATIVE CARE – 15 Minutes

1. Hypoxemia: You transport her to ICU intubated and she is mechanically ventilated with IMV of 6. Gradual hypoxemia ensues over 5 hours, with SpO₂ = 89%. DDX? Could obesity be underlying cause? How manage? CPAP vs. controlled ventilation? Which? Why?
2. Pneumonia: Problem persists and purulent sputum is noted in the tracheal tube. Temperature is 103°F. DDX? Pneumonia suspected. How confirm? Gram positive cocci in sputum. Rx?
3. Extubation: Problem clears. What will be your criteria for extubation? Same for all patients? Altered by obesity? By diabetes? By renal disease? When criteria are met, how will you wean from ventilation? Is a trial by T-piece necessary? Why/why not?
4. Oliguria: Urine output decreases to 120 ml over the past 8 hours. BUN = 84, Creatinine = 7.2. DDX? Manage? Furosemide vs. fluids vs. dopamine? What if creatinine 3.8? How determine pre-renal from renal causes? Is it important to differentiate? Why? What indications would you consider to determine need for dialysis? Why?
5. Hyperglycemia: Blood glucose increases to 285 with onset of infection. Risks? Management? Does ketonuria alter your concerns? How? Why?
6. Nausea and Vomiting: Assume patient is satisfactorily extubated 30 hours after surgery and develops persistent nausea and vomiting. How will you proceed? Evaluation? Management? Rationale.

C. ADDITIONAL TOPICS – 10 Minutes

1. Tamponade: A 38-year-old woman is brought to OR for pericardial window and possible pericardectomy to treat a malignancy-induced tamponade. BP 85/55, P 98, CVP 22. Discuss your assessment of patient prior to anesthesia. Assuming pericardiocentesis unsuccessful and patient receiving dopamine at 8 mcg/kg/min, how would you induce anesthesia? What are likely causes of hypotension during anesthetic induction? Should the trachea be intubated? Why/why not? Would laryngeal mask airway suffice? Why/why not? Should spontaneous ventilation be maintained? Why/why not?
2. Obstetrical anesthesia: A 27-year-old G1 P0 at term requires emergency C-delivery for placental abruption and fetal distress. Would you recommend spinal anesthesia? Why/why not? Assume general anesthesia selected. How would you induce anesthesia? Why? How would you maintain anesthesia prior to delivery? After delivery? Explain. Coagulopathy likely? Why/why not? If so, how determine? Rx? Rationale.
3. Acute pain: You are consulted to provide pain relief for a 78-year-old man who fell and broke 4 ribs. He is now splinting his chest and not coughing while in the ICU. He has stable angina for which he takes atenolol and nitroglycerin daily. The surgeons request an epidural catheter. Is this reasonable? Advantages/disadvantages over PCA? Over intrapleural analgesia? Advantages/disadvantages of lumbar vs. thoracic catheter? What opioid? Why?

ABA SAMPLE ORAL EXAMINATION 5 – SESSION 2

Session 2 – 35 Minutes

An apparently otherwise healthy 8-year-old, 25 Kg, boy fell from a tree one hour after dinner. He is brought to the emergency room semi-conscious and struggling. He is scheduled for a CT scan and possible craniotomy. The neurosurgeon requests that the anesthetic management for tomography be such that the boy can be evaluated neurologically afterwards should surgery not be indicated. P 92, BP 160/115, R 30 and T 38°C.

A. PRE-OPERATIVE EVALUATION – 10 Minutes

1. Further Workup: What additional information will you insist on prior to anesthesia? Why? What minimal lab studies will you require? What impact will results have on anesthetic management?
2. Hypertension: Why is blood pressure elevated? Will you lower it prior to anesthetic induction? If yes, how? To what level, and why that level? If not, why not? Significance of additional increase in blood pressure.
3. Airway Examination: Child is uncooperative. How will you assess? How would an anticipated difficult airway change your preparation and management?
4. Head Injury: How will you assess, if at all, extent of head injury? Can you determine likelihood and magnitude of increased ICP? If so, how? Will that knowledge alter your anesthetic approach? Why/why not? If so, how?

B. INTRA-OPERATIVE MANAGEMENT – 15 Minutes

1. Anesthetic Induction: Assume no anticipated airway difficulty. Is sedation alone preferable for CT scan? Why/why not? Is succinylcholine contraindicated? Explain. Substitutes? Rationale for choice.
2. Anesthetic Maintenance: What agents would you select that could provide rapid emergence for evaluation? What properties of inhalation agent would you examine to produce that response? Is N₂O contraindicated? If yes, why? If no, potential concerns? What is clinical significance of effect of inhalational agents on cerebral autoregulation? What agent(s) would you use and why? If no anesthesia machine available in CT scan room, is total intravenous anesthesia appropriate? Why/why not? If so, which agents? Why?
3. Anesthesia for Craniotomy: CT scan shows left parietal hematoma. What are objectives of anesthetic management during craniotomy? How will you achieve them? Will you use an opioid? Why/why not? If yes, how will you decide which one?
4. Increasing ICP: Brain is bulging. How manage? Why? At what level would you control the PaCO₂? Why? Will you maintain this PaCO₂ throughout entire procedure? Why/why not? Is there a maximal allowable dose of mannitol? Why?
5. Bradycardia: During drainage of the hematoma, P decreases to 40. Ddx? Rx?
6. Extubation: Should this patient be extubated in the OR at the end of the procedure? Why/why not? Special preparations prior to extubation? Extubation criteria? Patient is still somnolent at end of procedure and surgeon wants to perform neurologic exam. Would you administer an opioid antagonist? Why/why not? Dangers?

C. ADDITIONAL TOPICS – 10 Minutes

1. Renal transplantation: A 42-year-old man with chronic renal failure secondary to long standing hypertension is to undergo cadaver transplantation in several hours. What are your primary anesthetic concerns? Why is time since last dialysis an important issue for this patient? Assume dialysis 48 hours ago. K is 5.6 mEq/L. Does this influence anesthetic care in any way? Implications of severe LVH on ECG and CXR? Potential role(s) of nifedipine in perioperative period for this patient?
2. Anaphylactoid reaction: A 35-year-old woman received a lumbar epidural for total knee reconstruction. The orthopedic surgeon requests 1 gm vancomycin prior to tourniquet inflation. During rapid infusion of vancomycin (20 minutes after epidural) BP is 70/30. Ddx? Management? Rationale. Would reaction to vancomycin be different if under general anesthesia? Explain. How would this response be avoided? How differentiate hypotension due to histamine release versus true anaphylactic reaction? How treat if anaphylaxis? Why?
3. Thyrotoxicosis: A 30-year-old woman with untreated thyrotoxicosis requires emergency surgery for an open tibial fracture. BP 180/90, P 120, T 38°C. What are the risks of anesthesia in this patient? Would you do anything preop to minimize risks? Explain. Would regional be safer than general? Why/why not? How proceed if she refuses regional? Rationale.

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Sample Oral Examination 6
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 6 - SESSION 1

Session 1 - 35 Minutes

A 76 year old, 75 Kg, 5'11" tall man is brought to the operating room for a right carotid thromboendarterectomy.

HPI: The patient has had a 5-week history of transient ischemic attacks (TIA). Carotid evaluation 2 days ago revealed a 90% right, and 40% left carotid stenosis. He has had no previous neurologic symptoms and currently has no deficits.

PMH: He had a 3-vessel coronary artery bypass graft 5 years ago with no cardiac symptoms since. A stress test 6 months ago was normal. An ECHO yesterday showed normal wall motion and an estimated ejection fraction of 60%. He has adult onset (Type II) diabetes mellitus controlled by diet and an oral hypoglycemic agent. He has no allergies. He smoked 1 pack of cigarettes per day for 50 years until age 67. He has no pulmonary symptoms. He does not drink alcohol. Medications are 1 adult aspirin per day and Glucotrol (oral hypoglycemic - glipizide).

PHYS

EXAM: P 74, BP 140/85, R 14, T 37°C.
His airway appears normal.
Physical exam reveals no abnormalities.

XRAY: Normal with exception of sternal wire sutures.

EKG: Old inferior myocardial infarction.

LABS: Hgb 14 gms/dl, glucose 120 mg/dl, normal electrolytes, normal coagulation studies (PT, PTT, Platelets).

ABA SAMPLE ORAL EXAMINATION 6 – SESSION 1 (Continued)

A. INTRA-OPERATIVE MANAGEMENT – 10 Minutes

1. Monitoring: How will you monitor CNS during procedure, if at all? How reliable are monitors of electrical activity? Would you use a TEE if available? Why/why not? How does TEE, PA Catheter and ECG compare for monitoring myocardial ischemia? Will you monitor for that complication in this patient? If so, how? Why?
2. Anesthetic Technique: Would you select a regional or general anesthetic? Why? What regional technique(s) are available to provide anesthesia for this procedure? Describe. Does choice make a difference? What? Why?
3. General Anesthesia: All involved agree to do general anesthesia. Would “high dose opioid” be best? Why/why not? What agents will you select for induction? Why? How will you maintain anesthesia? Rationale. Will you use relaxant? Why/why not? If so, how will you evaluate adequacy of anesthesia?
4. Cerebral Ischemia: Will you employ any prophylactic measures to minimize cerebral ischemia? If so, which? Why? Is glucose control important? Why? How will you accomplish it? Does choice of anesthetic agent impact likelihood or magnitude of cerebral ischemia? How?

B. POST-OPERATIVE CARE – 15 Minutes

1. Somnolence: In PACU patient is unresponsive to verbal stimulation, but awakens in response to painful stimulation. Respiratory rate is 7. DDX? Is opioid antagonist indicated? If yes, why? Potential complications? If no, how treat?
2. Hypertension: BP is 180/100. Treat? Why/why not? If yes, how? Endpoint? If not, at what point would you treat and why?
3. Hematoma: Nurse reports that right neck appears to be swelling. How respond? Any lab tests indicated? Which? Why? Patient begins to exhibit stridor, becomes anxious and is short of breath. How will you proceed? Rationale. Surgeons want to administer platelets and fresh frozen plasma rather than re-explore. Your view?
4. Hyperglycemia: Assume no hematoma. Serum glucose is 300 mg/dl. How would you manage? Why? What is goal? Patient becomes tachypneic and confused. How will you proceed? Why? ABG shows PaO₂ 96, PaCO₂ 21, pH 7.21. Evaluate. Rx? Why? What would you expect electrolytes to be? Why?
5. Myocardial Ischemia: Inverted T-waves (new finding) are observed on post-op ECG. Significance? Can this be a benign finding? What would your workup entail? Would you initiate any therapy? If yes, what and why? If no, why not? What if ST changes? What if patient complains of angina?
6. Pain Management: Patient complains of severe right frontal and parietal headache in PACU. DDX? How treat? How does age affect opioid administration? Assuming no headache, but just wound pain, how would you provide post-op analgesia? Is ketorolac indicated? Why/why not?

C. ADDITIONAL TOPICS – 10 Minutes

1. Obstetrical anesthesia: An 18-year-old woman presents at 31 weeks gestation with jaundice and abnormal liver function tests. Urgent Cesarean section is planned. She desires to be awake. Is further laboratory evaluation necessary? If so, what? Why? How will results affect your anesthetic plan? Explain. Assume platelet count 40,000 and INR 1.8. How will you proceed? Rationale.
2. Wrist fracture: A 27-year-old man requires open reduction of a radius fracture which has compromised blood flow to his hand. He ate one hour ago. He requests a nerve block. Agree? Explain. Is an axillary block more appropriate than an interscalene block? Why/why not? Does it make a difference whether you use a nerve stimulator or elicit paresthesias? Why? Will you use mepivacaine? Why? One hour into procedure patient complains of tourniquet pain. How proceed? How could this have been prevented?
3. Trauma surgery: A 19-year-old 110 kg 6' 5" football player is in the emergency room following a motor vehicle accident. He is wearing a cervical collar and he has evidence of thoracoabdominal trauma. He is confused, combative and complaining of difficulty breathing. You are called to the ER to sedate him for further evaluation. P 132, BP 85/50, R 30. How will you proceed? Rationale.

ABA SAMPLE ORAL EXAMINATION 6 – SESSION 2

Session 2 – 35 Minutes

An 84-year-old, 76 Kg, man is admitted for emergency hip pinning following fracture of the right femoral neck after a fall. Past medical history is significant for moderate chronic obstructive pulmonary disease and hepatitis at age 37 without residual effects. He has been taking an unknown heart medication twice daily, but has not taken it for the last 2 days. His Hgb is 12.5 gm/dl. Vital signs show P 108, BP 110/80, R 18 and T 36.2°C.

A. PRE-OPERATIVE EVALUATION – 10 Minutes

1. COPD: How will you evaluate this patient's respiratory status? Different for emergent vs. elective surgery? Which PFTs are helpful in planning your anesthetic? Explain. Patient has no wheezing. Are PFTs necessary? Would an ABG be helpful? Why/why not? ABG: PaO₂ 50, PaCO₂ 50. Interpret. How does this affect your anesthesia management? Explain. Is chest x-ray necessary? Why/why not? Same patient without COPD. Is chest x-ray indicated? Why/why not?
2. Liver Disease: Does history of hepatitis concern you? Why? Would you perform any further evaluation of liver status? Why/why not? If so, what? Why?
3. Cardiac Evaluation: Are you concerned about the rapid heart rate? Why? How will you evaluate? EKG? EKG shows NSR. Will you administer a beta blocker? Why/why not? Your treatment plan? Is further cardiac workup necessary? What is necessary? Defend choice.
4. Blood Products: There is no blood prepared. Will you proceed with anesthesia? Why/why not? Is type and screen adequate? Why/why not? Type and screen shows antibodies. What will you do? Why? Do you plan blood salvage intra-operatively? Why/why not? What techniques? Why?

B. INTRA-OPERATIVE MANAGEMENT – 15 Minutes

1. Monitors: Is an arterial catheter necessary? Why/why not? How will you assess blood volume status? Rationale. Is end-tidal CO₂ useful in determining blood volume? Explain. Does PetCO₂ provide any evaluation of hemodynamic status? Explain. Will PetCO₂ accurately reflect PaCO₂ in this patient? Why/why not?
2. Anesthetic Technique: Surgery is to be performed in lateral position. Would you favor a regional or general anesthetic technique for this patient? Why? What are the advantages of each? Disadvantages? What is the safest technique for preserving liver function? Why?
3. Regional Anesthetic: If an epidural is selected what agent would you use? Why? Would you add epinephrine? Why/why not? How would you control sensory level? What are possible hazards of epidural? Do they differ from SAB? How? The patient becomes confused and agitated after epidural. How will you manage? Why? If anesthesia is inadequate, how will you proceed? Explain.
4. Respiratory Depression: Epidural is functioning well with a T6 level. After you sedate patient, oxygen saturation falls to 84%. What is the likely cause? How would you evaluate? Manage? If ventilatory support is necessary, how would you proceed?
5. Hypotension: After intubation and ventilation, the patient becomes hypotensive. Why? How would you determine cause and treat? You suspect hypovolemia. Would you Rx with crystalloid or colloid? Why? Would you give packed RBCs if Hgb decreased to 9 intra-op? Why/why not?
6. Dysrhythmia: As surgeon is closing skin incision, the patient's pulse rate suddenly rises from 88 to 150. What would you do? Rhythm appears to be regular with possible flutter waves. How will you proceed? Why? Suppose blood pressure 120/70. Suppose blood pressure 60/30. Rationale.

C. ADDITIONAL TOPICS – 10 Minutes

1. Pediatrics: A 3-year-old, 15 kg boy with Downs' syndrome and a repaired ASD/VSD now on digoxin and furosemide, is undergoing a tonsillectomy and adenoidectomy after a smooth induction and intubation. Mid-case, surgeon inadvertently extubates patient. Your response as patient desaturates? Unable to ventilate by mask. What will you do next? Last train of four = 3 of 4. Sux? Other? Now able to reintubate, but pink froth in ET tube. Dx? If negative pressure pulmonary edema, how treat?
2. General Surgical Anesthesia: A 62-year-old morbidly obese woman is to undergo laparoscopic cholecystectomy. She has severe coronary artery disease and has previously refused cardiac revascularization surgery. Preop cardiac evaluation? Why/why not? What tests? If significant myocardium at risk, how to monitor? Reasons for choices? Induction technique, drugs? Contrast etomidate and propofol. Thoracic epidural? Why/why not? Potential complications?
3. Pain Management - Epidural Hematoma: A 57-year-old man underwent an uneventful thoracotomy with general anesthesia and a T8/T9 thoracic epidural for post-operative pain control. On the second post-operative morning he cannot move his legs. How determine if related to epidural analgesia? Remove the epidural catheter? Why/why not? When would a radiographic study be indicated? CT or MRI? The MRI reveals an epidural hematoma extending from T7 to L2. How proceed? Rationale.

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Sample Oral Examination 7
Session 1 (35 minutes)
Session 2 (35 minutes)

ABA SAMPLE ORAL EXAMINATION 7 – SESSION 1

Session 1 – 35 Minutes

A 44-year-old, 90 Kg, 5'6" tall, non-English speaking woman is brought to the operating room for a total left knee replacement.

HPI: She has severe rheumatoid arthritis involving multiple joints. She leads a sedentary existence due to limited mobility. Her medications include a non-steroidal anti-inflammatory drug, methotrexate and prednisone 5 mg daily.

PMH: Intravenous heroin use between ages 18-20. Is positive for hepatitis B antigen. She had a right knee synovectomy under general anesthesia 3 years ago in another country and no records are available.

She has no allergies, does not drink alcohol and does not smoke.

PHYS

EXAM: P 92, BP 110/60, R 16, T 37°C

Mild restriction of jaw and neck mobility with partial view of uvula.

Lung and heart exam is normal. Painful swollen joints

XRAY: Normal

LABS: Hgb 10.5 gms/dl, glucose 112 mg/dl, coagulation studies, electrolytes and liver function tests are normal.

The patient states concern over post-op nausea and claims a low pain tolerance. She has been cleared in the pre-admission unit for general or regional anesthesia.

ABA SAMPLE ORAL EXAMINATION QUESTION 7 – SESSION 1 (Continued)

A. INTRA-OPERATIVE MANAGEMENT – 10 Minutes

1. Anesthetic Technique: Would you consider a regional anesthetic in this patient? Why/why not? Interpreter cannot gain consent for regional. How would you proceed? How would you secure airway? Discuss advantages/disadvantages of awake intubation, inhalation induction with spontaneous ventilation or fiberoptic techniques. If inhalation induction, which agent? Why?
2. Intra-operative Ventilation: Following a difficult intubation using a fiberoptic laryngoscope, the airway pressure rises to 50 cm H₂O. How would you evaluate to determine cause? If mucous plug suspected, how would you proceed? If suction does not improve status, what would you do? Why? Patient develops wheezing. What would you do now? Explain.
3. Dysrhythmia: HR suddenly increases from 90 to 160 and BP falls from 130/70 to 80/50. How proceed? Explain. Assume SVT. Administer adenosine? Why/why not? Alternatives? When is cardioversion indicated?
4. Intra-operative Hypotension: The tourniquet on her left lower extremity is now released after 90 minutes of inflation. Her BP rapidly falls to 70/40. Why? How would you manage? Why? SpO₂ decreases to 88% while receiving oxygen and nitrous oxide (FIO₂ .30). DDx? Differentiate? Rx? Rationale. Would increase or decrease in ETCO₂ help to make diagnosis? Explain.

B. POST-OPERATIVE CARE – 15 Minutes

1. Post-operative Ventilation: At end of surgery, patient breathes spontaneously with a rate of 30 with an end-tidal CO₂ of 58 mmHg. Discuss further evaluation. Treatment? Why?
2. Nausea and Vomiting: During surgery patient received 1.25 mg of droperidol, yet after extubation she develops nausea and vomiting in PACU. What will you do? Why? Are there hazards of additional droperidol? Explain. Could intra-op management have minimized potential for nausea? If so, how?
3. Pain: How will you manage severe pain in knee? PCA with morphine exacerbates nausea and vomiting. What other alternatives exist? Which would you choose? Why?
4. Post-op Jaundice: 3 days post-op the patient has a bilirubin of 7 mg/dl and appears jaundiced. You are called due to suspicion that this is anesthetic related. Discuss your evaluation and impression.
5. Sepsis: On the fourth post-op day the patient's temperature is 39°C and her BP falls to 75/50 over 2 hours. She is disoriented and tachypneic with a room air SpO₂ of 88%. How would you proceed? You suspect sepsis. 2 liters of crystalloid fail to raise blood pressure and ABG on 50% mask O₂ is PaO₂ 80, PaCO₂ 28, pH 7.19. Interpret. Discuss further management. Would you desire specialized monitoring? If so, what? Why? How will it help management?

C. ADDITIONAL TOPICS – 10 Minutes

1. Regional anesthesia - obstetrics: A healthy 28-year-old woman is receiving an epidural anesthetic for an elective Cesarean section. After identifying the epidural space, how will you avoid unintentional intravascular or subarachnoid injection of the anesthetic? Despite your test, she has a grand mal seizure after injection. How treat? Why? Intubate? Why/why not? Peripheral pulse unobtainable with chest compressions. Any special steps required? What? Why? With uterine displacement, BP returns to 95/50, but fetal heart rate now 85. Indication for urgent Cesarean delivery? Why/why not?
2. Carotid Surgery: A 63-year-old man with recent right sided transient ischemic attacks and left internal carotid artery occlusion presents for a carotid endarterectomy. The neurosurgeon requests EEG monitoring. Anesthetic implications? Just prior to carotid cross-clamping, there is slowing in the right hemisphere. Management? A shunt is placed and the EEG slowing worsens/continues. Assessment. Administer barbiturates? Rationale.
3. Carboxyhemoglobin: A 65-year-old woman with a long history of depression presents to the OR for repair of a lacerated radial artery and multiple tendons following a suicide attempt. She was found locked in her garage with a car engine running, unconscious and unresponsive. She was volume resuscitated and brought to your hospital. She is now awake but confused and agitated. Her BP is 170/110 and her pulse is 125. Her SpO₂ is reading 100%. What further information do you need before anesthetizing her? What does the SpO₂ value mean? What are the anesthetic implications of carboxyhemoglobin?

ABA SAMPLE ORAL EXAMINATION 7 – SESSION 2

Session 2 – 35 Minutes

A 38-year-old, 48 Kg, 5'6" tall cachectic appearing woman is scheduled for mitral valve replacement for pure mitral stenosis. Her symptoms are fatigue and dyspnea on minimal exertion. She has a history of diabetes mellitus for which she takes NPH insulin 25 U in A.M. and 10 U in P.M. She takes digoxin, furosemide and coumadin which was discontinued 3 days ago. Laboratory evaluation includes Hgb 11.5 gms/dl, K 3.3 meq/L, prothrombin time 14 seconds, INR 1.2, glucose 165 mg/dl at 6:00 AM. Her vital signs are P 105 (irregular), BP 110/80, R 18, T 37°C.

A. PRE-OPERATIVE EVALUATION – 10 Minutes

1. Cardiac Status: What further data regarding cardiac status do you desire? Why? Ejection fraction is 35% and LVEDP was 18 mmHg rising to 27 mmHg post-ventriculogram. Interpret. Should patient have further therapy to prepare for surgery? If so, what? Why?
2. Diabetes: It is 7:00 AM. Since last night she has been receiving D5 1/4 saline at 65 ml/hr and received 5 units regular insulin at 2:00 A.M. for a serum glucose of 225 mg/dl. How will you manage her diabetes now? Why?
3. Renal Status: Her BUN is 48 mg/dl and her creatinine is 2.5 mg/dl. They were both normal 6 days ago. What is/are likely cause(s)? How evaluate? Why? Surgery is considered urgent. Her urine output has been good. What will you plan to do to minimize renal failure post-op? Rationale.
4. Digoxin: Should digoxin be discontinued before operation? Why/why not? What is its purpose in this patient? What are risks? Should surgery be postponed until K value is normalized? Why?

B. INTRA-OPERATIVE MANAGEMENT- 15 Minutes

1. Anesthetic Induction: Would induction with fentanyl and propofol be acceptable? Would it be your choice? Why/why not? If not, which agents would you choose? Why? Which relaxant would you choose for intubation? Why? Compare succinylcholine, vecuronium and cis-atracurium for intubation. Advantages/disadvantages?
2. Post-induction Hypotension: Immediately following intubation, heart rate is 50 bpm and mean arterial pressure 48 mmHg. Is therapy indicated? Why/why not? You note marked ST elevation. Significance? You respond? Despite your efforts, MAP is now 44 mmHg and multifocal PVCs are noted. What will you do? Rationale.
3. Anesthetic Maintenance: What inhalation agent will you use, if any? Why? Compare benefits and risks of equipotent isoflurane vs. enflurane. How can you assure that patient will not have recall? Rationale. How do you modify anesthesia to accommodate early post-op extubation? Rationale.
4. Perfusion Pressure on CPB: Now successfully on bypass and after 90 minutes, MAP of 35 mmHg noted. Acceptable? Why/why not? When might this be dangerous? Explain. What would you do? Assume flow on bypass is 5.5 LPM. Does this alter your management? Explain. How would these values affect plans for discontinuing CPB?
5. Heart Block: Upon discontinuation of CPB, the patient has a MAP of 60 mmHg receiving dopamine 7 mcg/kg/minute. ECG shows a rate of 44. Satisfactory? Why/why not? Assume ECG shows complete heart block, how will you proceed?
6. Bleeding: After successful termination of CPB which lasted 2 hours and 20 minutes and administration of protamine, surgeon complains of diffuse mediastinal bleeding. What might be the cause? How will you evaluate? Is there a role for DDAVP? Amicar? Explain.

C. ADDITIONAL TOPICS – 10 Minutes

1. Pediatrics: An 18-month-old boy presents to the ER having aspirated a peanut at a birthday party. What evaluation would you require prior to rigid bronchoscopy? Is pentothal an appropriate choice for induction of anesthesia? Why/why not? Is a circle system appropriate? Why/why not? What ventilatory technique? Why? Rationale for management of emergence/extubation.
2. Molar Pregnancy: A 27-year-old woman has a two week history of lower abdominal pain associated with nausea and vomiting, vaginal spotting and a 16 week size uterus. She is scheduled for evacuation of a molar pregnancy. What potential associated problems would be of significant concern? How would you manage her anesthetic if her initial BP is 135/95 and P 128? Why? Two hours after the evacuation is complete the patient develops chest pain, cough, and tachypnea. What is the Diff Dx? How would you determine cause? How would you manage? Why?
3. Monitored anesthesia care: An 84-year-old woman without a history of smoking had a left pneumonectomy 25 years ago and is scheduled for cataract extraction with a retrobulbar block and MAC. Do you believe this is acceptable? Why/why not? If choose MAC, how would you achieve sedation during and after placement of the block? Fifteen minutes after placement of the block the patient's S_pO₂ decreases from 98% to 87% while receiving oxygen via a nasal cannula. How will you proceed? Discuss.