A 66 .y.o., 76 kg man is scheduled for radical prostatectomy.

**HPI:** Patient noted the onset of progressively worsening difficulty with urination. He consulted his urologist who subsequently biopsied him for a suspicious prostatic nodule. His metastatic work up is negative.

**PMH:** Significant for a myocardial infraction 16 months ago, which was complicated by CHF. His current anginal pattern is stable. The patient has excellent exercise tolerance, walking up to two miles per day and up 2 flights of steps without difficulty. An echocardiogram performed three days ago revealed an ejection fraction of 45%. BNP level 225 pg/mL (normal < 100 pg/mL).

**MEDS:** Atenolol, ACE inhibitor, aspirin 81 mg, and sublingual NTG. He has not used nitroglycerine in more than 3 months. He has a 30 pack/year tobacco history, but has not smoked in 20 years. He also states he had hepatitis at age 37.

**PHYS** P 65; BP 140/80; RR 16; T 36.1°C.

**EXAM:** His airway appears normal.

He has no evidence of organomegaly or peripheral edema.

**EKG:** Left bundle branch block.

**LABS:** Hgb 14.5 gm/dl, normal electrolytes, albumin, liver function tests, and coagulation studies.

He arrives in the operating room at 0900 with a functioning peripheral IV and left subclavian CVP in place, having taken his normal morning atenolol and ACE inhibitor.

**Session 1**

**A. INTRAOPERATIVE MANAGEMENT**

1. ***Anesthetic selection***: Pt requests epidural analgesia postop. Combined epidural-general vs. general with PCA? Advantages/disadvantages of each. How decide? Assume agree to epidural. During placement, wet tap. How respond? Epidural in place. Advantages/disadvantages to local anesthetic before/after induction? Preemptive analgesia? Affect on MAC? Is propofol-fentanyl-rocuronium a reasonable induction sequence? If no, why not? Your choice? Why? What is most likely problem with it? How will you avoid hypotension?

2. ***Unexpected difficult intubation***: Easy mask ventilation but unable to visualize glottic opening after 4 laryngoscopies, the last a recognized esophageal intubation. SpO2 100%. What next? LMA? What kind? LMA well positioned. Controlled ventilation through LMA acceptable for surgery? Why/why not? Do fiberoptic intubation through mask/LMA? Assume ETT placed.

3. ***Venous VAE***: 1 hr into procedure (prostate open), BP acutely drops to 70/40? DDx? Does ETCO2 18 affect your Dx / urgency to Rx? Hypovolemia vs. PTX vs. VAE. TEE helpful? If VAE, how Rx?

4. ***Non-surgical bleeding***: *(Assume no VAE.)* 90 min into procedure, surgeon complains of a slow, generalized ooze in the field. How proceed? What lab studies would you order to evaluate? Why? Does thrombin time help assess his coagulopathy? Fibrinogen? Why/why not? Does history of hepatitis impact periop mgmt of this situation? Administer aminocaproic acid? DDAVP? Why/why not? FFP? How decide?

**B. POSTOPERATIVE CARE**

1. ***Extubation and hypothermia***: At the end of the procedure, T 34.7°C. Would you extubate? What if pt follows commands and coughing on ETT? Why/why not? Risks/benefits? If the pt did not have CAD, would you extubate? At what T would extubation be acceptable? Why? How rewarm?

2. ***Hypertension***: Shortly after extubation, pt‟s BP is noted to be 180/110. Better coronary perfusion than if normal BP? Why/why not? Treat BP? If yes, how? End point? If not, when? Why? Is metoprolol indicated (HR 50)? Why/why not? NTG? Hydralazine?

3. ***Postop chest pain***: The pt is transferred to step down unit following 2 hrs in PACU. 8 hrs later he complains of chest pain. Is this ischemia (demand/supply imbalance) or infarction (unstable plaque)? Continuum? How Dx? Does LBBB affect ability to use ECG? What would you do while awaiting definitive tests? Why? Would a PA catheter assist with mgmt? TEE? How treat pain?

4. ***Postop surgical pain***: POD #1. Pt has incisional pain (8/10). If epidural in place, how respond? If IV PCA with morphine sulfate, how respond? Is goal pain score of 3/10? What if pt comfortable with score of 5/10? Would administration of a COX-2 inhibitor be beneficial? Ketorolac? Administer subarachnoid morphine sulphate? Why/why not?

5. ***Jaundice***: POD#5. Pt‟s wife tells surgeon that she thinks his “eyes are yellow.” Response? What would you tell the pt and his family? Does this require further evaluation? Related to the anesthetic?

6. ***Nerve injury***: Prior to hospital discharge, the pt notifies the surgeon that he is experiencing neck pain and bilateral shoulder and biceps pain. The surgeon asks you to evaluate the pt. What would you do? Why? The pt wants to know if this is secondary to the anesthetic. What would you tell them? Why? What evaluation is indicated? Why? CT scan? MRI? Would you get a neurologic consultation? Is EMG indicated?

Additional topics:

1. ***Placenta previa:*** A 29 y.o. woman at 37 wks gestation has been in labor with placenta previa and vaginal bleeding for 3 hrs. Fetal monitor has reassuring pattern. Urgent C-section planned. Regional anesthesia acceptable? Your choice? Why? Pt develops significant bleeding from placenta previa. BP 68/44 despite fluids/ephedrine. Mgmt? Criteria for transfusion of PRBC? If type and cross not completed, administer O negative blood? Type specific?
2. ***Nutrition:*** A 58 y.o. man with alcoholic cirrhosis presents for a colostomy revision. How will you assess his preop liver function? History? PE? Lab studies? What? Why? If preop albumin is 2.4, should surgery be delayed for nutritional improvement? Why? Would ascites affect your decision? Why? If you planned for nutritional supplementation, IV or enteral? Why? Would the pt‟s ammonia level give you any info on hepatic function? How would you manage an elevated ammonia? How would an elevated ammonia affect his response to GA?
3. ***Cardiac surgery:*** A 25 y.o., obese woman is scheduled for urgent mitral valve replacement. Mitral valve was replaced 5 yrs ago and she now has worsening dyspnea and orthopnea. Echo reveals a thrombus above and below stenotic bioprosthetic valve (PAP 70 mmHg). How to induce anesthesia? Why? Fentanyl, propofol and cisatracurium appropriate for induction? Why/why not? Your choice? After valve replacement, PA pressures remain elevated (CI decreased). Describe Rx approach.