Chapter 1

Perioperative Evaluation and Management of Surgical Patients

Patient Management Problems

Problem 1

A 28-year-old man presents to your office for a preoperative evaluation for herniorrhaphy. He has been referred by his primary care doctor, who identified the hernia during his yearly physical exam.

PROCEED TO SECTION A

Section A. Pertinent Patient History
At this time what do you wish to ask the patient? (Select as many as you consider pertinent.)

1. Full history of present illness
   Standard history for uncomplicated hernia

2. Past medical history
   No previous operations
   No other illnesses

3. Medications
   None

4. Allergies
   No known drug allergies

5. Family history
   Parents alive and well
   No history of anesthetic problems

6. Social history
   Works unloading trucks
   No cigarettes, social alcohol

7. Review of systems
   No other concerns or symptoms revealed

CORRECT SELECTIONS: ALL

DISCUSSION: Patient requires a standard full history of present illness prior to doing any sort of exam or making an operative plan.
PROCEED TO SECTION B

Section B. Physical Examination
At this time, what pertinent physical examination should you perform? (Select as many as you consider pertinent).

1. Vital signs  
   BP -110/70; P-68; R-14
2. Temperature  
   38°C
3. Abdominal palpation  
   Right inguinal hernia, reducible
4. Rectal  
   Normal tone, normal prostate
5. Heart  
   Normal exam
6. Lungs  
   Normal exam
7. HEENT  
   Normal exam
8. Neurological  
   Normal exam
9. Musculoskeletal  
   Normal exam
   No abnormal bruising

CORRECT SELECTIONS: ALL

DISCUSSION: Patient requires a full physical exam including rectal prior to making an operative plan.

PROCEED TO SECTION C

Section C. Laboratory Studies
What laboratory studies should you obtain at this time? (Select only those you consider necessary at this time.)

1. CBC  
   Normal
2. Hemoglobin  
   13.6g/dL
3. Serum electrolytes  
   Normal
4. LFTs  
   Normal
5. HIV screen  
   Negative
6. Coagulation studies  
   Normal

7. Urine pregnancy test  
   Negative

8. No studies desired  
   No studies obtained

CORRECT SELECTIONS: No Studies (#8)

DISCUSSION: This is a normal, healthy adult with nothing in his history or exam to suggest any abnormalities. No routine labs are required.

**PROCEED TO SECTION D**

**Section D. Imaging Studies**

What imaging studies should you obtain at this time? (Select only those you consider necessary at this time.)

1. Acute abdominal series  
   Normal

2. Chest x-ray  
   Normal

3. CT scan of abdomen  
   Hernia in right inguinal region

4. Abdominal ultrasound  
   Normal

5. PFTs  
   Normal

6. EKG  
   Normal

7. No studies desired  
   No studies obtained

CORRECT SELECTIONS: No Studies (#7)

DISCUSSION: This is a normal, healthy adult with nothing in his history or exam to suggest any abnormalities. No routine or screening studies are required.

**PROCEED TO SECTION E**

**Section E. Diagnosis**

What is your diagnosis? (Select only ONE unless otherwise asked to make another choice.)

1. Uncomplicated right inguinal hernia  
   Move to Section F
2. Complicated right inguinal hernia  Incorrect, make another selection
3. Hernia with need for cardiac clearance Incorrect, make another selection
4. Hernia with need for pulmonary clearance Incorrect, make another selection

**PROCEED TO SECTION F**

**Section F:** Management Options
What are your next steps to manage this problem? (Select as many as you feel are necessary.)

1. Schedule for operation
   
   Obtain patient consent and proceed with operative repair of uncomplicated inguinal hernia

2. Arrange preoperative cardiac evaluation
   Incorrect plan

3. Arrange preoperative pulmonary evaluation
   Incorrect plan

**SUMMARY**

The goal of this patient management problem was to present an uncomplicated surgical problem that does not require a needlessly aggressive work-up. This patient requires a standard full history and physical exam, but as that is fairly unrevealing and does not suggest any unknown medical problems or conditions, the physician does NOT require any additional preoperative labs nor studies and may proceed with arranging for the operative repair of the hernia.

As outlined in the chapter on perioperative evaluation and management, the potential harm caused by the routine screening of asymptomatic patients is greater than any benefit derived from uncovering occult abnormalities.
Problem 2

A 55-year-old woman presents with a 4-day history of nausea and vomiting. She has no appetite and has not urinated in the past 12 hours. She has undergone a previous abdominal operation for a hysterectomy. Physical exam demonstrates a pulse of 120 and a respiratory rate of 24. Her abdomen is distended with a well-healed infra-umbilical midline scar. She has hypoactive bowel sounds. Full abdominal series ordered by the Emergency Department demonstrates multiple air fluid levels in the small bowel and no gas in the rectum. You have been instructed to write orders for admission.

PROCEED TO SECTION A

Section A. Pertinent Patient History
At this time what are your initial admission plans in regards to service, location, and diagnosis? (Select as many as you consider pertinent.)

1. Admit to Surgery Service  Correct response
2. Admit to Medicine Service  Incorrect response
3. Admit to General Surgery Floor  Correct response
4. Admit to Intensive Care Unit  Incorrect response
5. Diagnosis: small bowel obstruction  Correct response
6. Diagnosis: Large bowel obstruction  Incorrect response
7. Bowel obstruction  Incorrect response; not specific
8. Incarcerated hernia  Incorrect response
9. Flu/viral illness  Incorrect response

PROCEED TO SECTION B

Section B. Physical Examination
At this time what are your initial admission plans in regards to vital signs, notification parameters, and activity? (Select as many as you consider pertinent.)

1. Vitals routine  Incorrect response
2. Vitals every six hours  Acceptable response
3. Vitals every two hours  
   *Best response due to tachycardia*

4. Call house officer for temp > 38.5  
   *Correct response*

5. Call house officer for urine output less than 30 mL/hour  
   *Correct response*

6. Call house officer for HR >100  
   *Acceptable response. Patient is already tachycardic*

7. Call house officer for Systolic BP <90  
   *Correct response*

8. Activity: ad lib  
   *Incorrect response. Too vague*

9. Activity: bed rest  
   *Correct response*

**PROCEED TO SECTION C**

**Section C. Laboratory Studies**

At this time what are your initial admission plans in regards to nursing care instructions and diet? (Select as many as you consider pertinent.)

1. NG to low wall suction  
   *Correct response*

2. Foley to gravity  
   *Correct response*

3. Monitor Ins and Outs  
   *Correct response*

4. Place sequential compression stockings  
   *Correct response*

5. O2 and pulse ox  
   *Incorrect response*

6. Rectal Tube  
   *Incorrect response*

7. Diet: regular  
   *Incorrect response*

8. Diet: clear liquid  
   *Incorrect response*

9. Diet: Nil Per Os (NPO)  
   *Correct response*
**PROCEED TO SECTION D**

**Section D. Imaging Studies**
At this time what are your initial admission plans in regards to IV fluids and medications? (Select as many as you consider pertinent.)

1. IV Normal Saline at 125 per hour  
   Correct response

2. Bolus 500 ml NS IV times one  
   Correct response due to tachycardia

3. Saline lock  
   Incorrect response

4. Antiemetic  
   Correct response due to vomiting

5. Pain medication  
   Incorrect response

6. Sleeping tablet  
   Incorrect response

7. Tylenol for fever  
   Incorrect response

8. Prophylactic proton pump inhibitor  
   Incorrect response

9. Scheduled antibiotics  
   Incorrect response

10. Pre-op antibiotics  
   Correct IF decide to go to OR

**PROCEED TO SECTION E**

**Section E. Diagnosis**
At this time what are your initial admission plans in regards to laboratory orders and other studies or procedures? (Select as many as you consider pertinent.)

1. White blood cell count  
   Correct response

2. Serum electrolytes  
   Correct response

3. Coagulation studies  
   Not indicated from history

4. Urine analysis  
   Correct response

5. Liver function tests  
   Not indicated

6. Amylase/lipase  
   Not initially indicated
7. Type and cross  
   Not indicated

8. CT abdomen  
   Optional to evaluate for hernia or transition zone in bowel

9. Abdominal ultrasound  
   Not indicated

10. Chest x-ray  
    Already included in admission abdominal series

11. EKG  
    Correct response due to age

**PROCEED TO SECTION F**

Section F. Management Options

At this time is there anything else you would want to include in your initial admission plans? (Select as many as you consider pertinent.)

1. Consent for OR  
   May be a little early on the initial admission orders but student should get credit for considering this possible outcome

**SUMMARY**

The goal of this patient management problem was to provide the student with an experience of writing admission orders. The admission vital signs were designed to suggest that the patient is dehydrated and may need additional fluids. She should be kept NPO (nil per os) due to the possible need for surgery. Lab studies are indicated due to her several day history of nausea and vomiting. A routine EKG is indicated due to her age. The student is expected to consider the need for operative intervention, which would necessitate the signing of a surgical consent and giving pre-operative antibiotics.
Problem 3

A 73-year-old woman with a history of non-insulin dependent diabetes mellitus presents to the office for a preoperative evaluation for a mastectomy after cancer is found on a core biopsy of a breast mass.

**PROCEED TO SECTION A**

**Section A. Pertinent Patient History**

At this time what do you wish to ask the patient? (Select as many as you consider pertinent.)

<table>
<thead>
<tr>
<th>1. Full history of present illness</th>
<th>Standard history for breast mass</th>
</tr>
</thead>
</table>
| 2. Past medical history           | Diabetes mellitus; on oral medication  
|                                   | Hx MI 3 years ago; on beta-blocker  
|                                   | Hypertension; on diuretic  
|                                   | Previous cholecystectomy; tonsils as a child |
| 3. Medications                    | Beta-blocker  
|                                   | Lasix  
|                                   | Potassium supplement  
|                                   | Diabetes medication |
| 4. Allergies                      | No known drug allergies |
| 5. Family History                 | Parents died of “old age” |
| 7. Review of systems general      | No weight gain |
| 8. Review of systems eye          | No pertinent findings |
| 9. Review of systems cardiac      | Chest pain when raking yard |
| 10. Review of systems pulmonary   | Gets short of breath raking the yard |
| 11. Review of systems genitourinary | Frequent urination due to diuretic |
| 12. Review of systems extremity   | Mild edema at the end of the day only |
PROCEED TO SECTION B

Section B. Physical Examination
At this time, what pertinent physical examination should you perform? (Select as many as you consider pertinent.)

1. Vital Signs
   BP 168/88; P 74; R 22

2. Temperature
   Afebrile

3. Eye exam
   No pertinent findings

4. Neck exam
   No adenopathy;
   JVD to 3 cm above the clavicles at 30 degrees

5. Breast
   Palpable mass, 2 cm, near nipple
   No palpable adenopathy

6. Chest/lung
   Crackles at bases

7. Heart
   Regular, no murmurs

8. Abdomen
   No pertinent findings

9. Genitourinary
   No pertinent findings

10. Extremities
    Trace pedal edema

11. Neurological exam
    No pertinent findings

PROCEED TO SECTION C

Section C. Laboratory Studies
What laboratory studies should you obtain at this time? (Select only those you consider necessary at this time.)

1. WBC
   Normal, not indicated

2. Hemoglobin
   11.3 g/dL

3. Serum electrolytes
   Potassium 3.6 mEq/L

4. LFTs
   Normal, not indicated
5. Coagulation studies  
   Normal, not indicated

6. Urine analysis  
   Normal, not indicated

7. Urine pregnancy test  
   Normal, not indicated

8. HIV screen  
   Negative, not indicated

9. No studies  
   Incorrect answer

10. Hemoglobin A-1C  
    6.3%

11. ABG  
    Normal for age, not indicated

PROCEED TO SECTION D

Section D. Imaging Studies
What imaging and other diagnostic studies should you obtain at this time? (Select only those you consider necessary at this time.)

1. Review mammogram  
   2 cm mass with microcalcifications

2. CXR  
   Mild cardiomegaly. No effusions or mass

3. Ultrasound breast  
   Not indicated at this time

4. MRI breast  
   Confirms mammogram. Not indicated

5. CT chest  
   Not indicated

6. PET Scan  
   Not indicated at this time

7. Bone Scan  
   Not indicated at this time

8. EKG  
   SR. Cannot exclude old inferior MI

9. Stress test  
   Reversible ischemia

10. Pulmonary function tests  
    Not indicated

11. No studies desired  
    Incorrect choice
**PROCEED TO SECTION E**

**Section E.** Diagnosis  
What is your diagnosis? (Select only ONE unless otherwise asked to make another choice.)

1. Breast mass  
   *Correct*

2. Metastatic breast CA  
   *Incorrect*

3. Angina with exertion  
   *Correct*

4. Coronary artery disease  
   *Correct*

5. Arrhythmia  
   *Incorrect*

6. Diabetes mellitus  
   *Correct*

7. Pulmonary edema  
   *Incorrect*

**PROCEED TO SECTION F**

**Section F.** Management Options  
What are your next steps to manage this problem? (Select as many as you feel are necessary.)

1. Schedule for mastectomy  
   *Incorrect choice*

2. Refer to primary care doctor for “medical clearance”  
   *Incorrect choice*

3. Arrange preoperative cardiac evaluation  
   *Correct choice*

**PROCEED TO SECTION G**

**Section G.** Complications  
What are this patient’s specific cardiac risk factors? (Select as many as you feel are necessary.)

1. History of MI  
   *Correct choice*

2. History of diabetes  
   *Incorrect choice, not insulin-dependent*

3. History of stroke  
   *Incorrect choice*

4. Dyspnea on exertion  
   *Correct choice*
5. Tachycardia  Incorrect choice
6. JVD  Correct choice
7. Murmur  Incorrect choice
8. Cardiomegaly  Incorrect choice (isolated finding)
9. High-risk procedure  Incorrect choice
10. Emergency procedure  Incorrect choice

SUMMARY

The goal of this patient management problem is to present a preoperative patient with cardiac risk factors. This patient requires a standard full history and physical exam. Findings are suggestive of a poorly controlled cardiac condition that warrants further evaluation before proceeding with her mastectomy. I have attempted to avoid pulmonary findings that would force an evaluation in that area as well.

As outlined in the chapter on perioperative evaluation and management, in the patient with previous infarction, the risk of clinical postoperative myocardial ischemia is between 5% and 10% overall, with an attendant mortality rate of 50%. Appropriate pre-operative evaluation is indicated.