

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 | <i>Standard history for
uncomplicated hernia</i> |
| 2. Past medical history | <i>No previous operations

No other illnesses</i> |
| 3. Medications | <i>None</i> |
| 4. Allergies | <i>No known drug allergies</i> |
| 5. Family history | <i>Parents alive and well
No history of anesthetic problems</i> |
| 6. Social history | <i>Works unloading trucks
No cigarettes, social alcohol</i> |
| 7. Review of systems | <i>No other concerns or
symptoms revealed</i> |

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

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 | <i>Normal</i> |
| 2. Hemoglobin | <i>13.6g/dL</i> |
| 3. Serum electrolytes | <i>Normal</i> |
| 4. LFTs | <i>Normal</i> |
| 5. HIV screen | <i>Negative</i> |

- | | |
|-------------------------|----------------------------|
| 6. Coagulation studies | <i>Normal</i> |
| 7. Urine pregnancy test | <i>Negative</i> |
| 8. No studies desired | <i>No studies obtained</i> |

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 | <i>Normal</i> |
| 2. Chest x-ray | <i>Normal</i> |
| 3. CT scan of abdomen | <i>Hernia in right inguinal region</i> |
| 4. Abdominal ultrasound | <i>Normal</i> |
| 5. PFTs | <i>Normal</i> |
| 6. EKG | <i>Normal</i> |
| 7. No studies desired | <i>No studies obtained</i> |

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 | <i>Move to Section F</i> |
|--|--------------------------|

- | | |
|---|--|
| 2. Complicated right inguinal hernia | <i>Incorrect, make another selection</i> |
| 3. Hernia with need for cardiac clearance | <i>Incorrect, make another selection</i> |
| 4. Hernia with need for pulmonary clearance | <i>Incorrect, make another selection</i> |

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 | <i>Obtain patient consent and proceed with operative repair of uncomplicated inguinal hernia</i> |
| 2. Arrange preoperative cardiac evaluation | <i>Incorrect plan</i> |
| 3. Arrange preoperative pulmonary evaluation | <i>Incorrect plan</i> |

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

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 | <i>Incorrect response</i> |
| 2. Vitals every six hours | <i>Acceptable response</i> |

- | | |
|---|--|
| 3. Vitals every two hours | <i>Best response due to tachycardia</i> |
| 4. Call house officer for temp > 38.5 | <i>Correct response</i> |
| 5. Call house officer for urine output less than 30 mL/hour | <i>Correct response</i> |
| 6. Call house officer for HR >100 | <i>Acceptable response. Patient is already tachycardic</i> |
| 7. Call house officer for Systolic BP <90 | <i>Correct response</i> |
| 8. Activity: ad lib | <i>Incorrect response. Too vague</i> |
| 9. Activity: bed rest | <i>Correct response</i> |

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 | <i>Correct response</i> |
| 2. Foley to gravity | <i>Correct response</i> |
| 3. Monitor Ins and Outs | <i>Correct response</i> |
| 4. Place sequential compression stockings | <i>Correct response</i> |
| 5. O2 and pulse ox | <i>Incorrect response</i> |
| 6. Rectal Tube | <i>Incorrect response</i> |
| 7. Diet: regular | <i>Incorrect response</i> |
| 8. Diet: clear liquid | <i>Incorrect response</i> |
| 9. Diet: Nil Per Os (NPO) | <i>Correct response</i> |

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.)

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|---------------------------------------|--|
| 1. IV Normal Saline at 125 per hour | <i>Correct response</i> |
| 2. Bolus 500 ml NS IV times one | <i>Correct response due to tachycardia</i> |
| 3. Saline lock | <i>Incorrect response</i> |
| 4. Antiemetic | <i>Correct response due to vomiting</i> |
| 5. Pain medication | <i>Incorrect response</i> |
| 6. Sleeping tablet | <i>Incorrect response</i> |
| 7. Tylenol for fever | <i>Incorrect response</i> |
| 8. Prophylactic proton pump inhibitor | <i>Incorrect response</i> |
| 9. Scheduled antibiotics | <i>Incorrect response</i> |
| 10. Pre-op antibiotics | <i>Correct IF decide to go to OR</i> |

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 | <i>Correct response</i> |
| 2. Serum electrolytes | <i>Correct response</i> |
| 3. Coagulation studies | <i>Not indicated from history</i> |
| 4. Urine analysis | <i>Correct response</i> |
| 5. Liver function tests | <i>Not indicated</i> |
| 6. Amylase/lipase | <i>Not initially indicated</i> |

- | | |
|-------------------------|--|
| 7. Type and cross | <i>Not indicated</i> |
| 8. CT abdomen | <i>Optional to evaluate for hernia
or transition zone in bowel</i> |
| 9. Abdominal ultrasound | <i>Not indicated</i> |
| 10. Chest x-ray | <i>Already included in admission
abdominal series</i> |
| 11. EKG | <i>Correct response due to age</i> |

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 | <i>May be a little early on the initial
admission orders but student should get
credit for considering this possible outcome</i> |
|-------------------|--|

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.)

- | | |
|-------------------------------------|--|
| 1. Full history of present illness | <i>Standard history for breast mass</i> |
| 2. Past medical history | <i>Diabetes mellitus; on oral medication
Hx MI 3 years ago; on beta-blocker
Hypertension; on diuretic
Previous cholecystectomy; tonsils as a child</i> |
| 3. Medications | <i>Beta-blocker
Lasix
Potassium supplement
Diabetes medication</i> |
| 4. Allergies | <i>No known drug allergies</i> |
| 5. Family History | <i>Parents died of “old age”</i> |
| 6. Social history | <i>Lives with husband. Performs her own activities of daily living. Can climb one flight of stairs slowly.</i> |
| 7. Review of systems general | <i>No weight gain</i> |
| 8. Review of systems eye | <i>No pertinent findings</i> |
| 9. Review of systems cardiac | <i>Chest pain when raking yard</i> |
| 10. Review of systems pulmonary | <i>Gets short of breath raking the yard</i> |
| 11. Review of systems genitourinary | <i>Frequent urination due to diuretic</i> |
| 12. Review of systems extremity | <i>Mild edema at the end of the day only</i> |

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 | <i>BP -168/88; P-74; R-22</i> |
| 2. Temperature | <i>Afebrile</i> |
| 3. Eye exam | <i>No pertinent findings</i> |
| 4. Neck exam | <i>No adenopathy;
JVD to 3 cm above the
clavicles at 30 degrees</i> |
| 5. Breast | <i>Palpable mass, 2 cm, near
nipple
No palpable adenopathy</i> |
| 6. Chest/lung | <i>Crackles at bases</i> |
| 7. Heart | <i>Regular, no murmurs</i> |
| 8. Abdomen | <i>No pertinent findings</i> |
| 9. Genitourinary | <i>No pertinent findings</i> |
| 10. Extremities | <i>Trace pedal edema</i> |
| 11. Neurological exam | <i>No pertinent findings</i> |

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 | <i>Normal, not indicated</i> |
| 2. Hemoglobin | <i>11.3 g/dL</i> |
| 3. Serum electrolytes | <i>Potassium 3.6mEq/L</i> |
| 4. LFTs | <i>Normal, not indicated</i> |

5. Coagulation studies	<i>Normal, not indicated</i>
6. Urine analysis	<i>Normal, not indicated</i>
7. Urine pregnancy test	<i>Normal, not indicated</i>
8. HIV screen	<i>Negative, not indicated</i>
9. No studies	<i>Incorrect answer</i>
10. Hemoglobin A-1C	<i>6.3%</i>
11. ABG	<i>Normal for age, not indicated</i>

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	<i>2 cm mass with microcalcifications</i>
2. CXR	<i>Mild cardiomegaly. No effusions or mass</i>
3. Ultrasound breast	<i>Not indicated at this time</i>
4. MRI breast	<i>Confirms mammogram. Not indicated</i>
5. CT chest	<i>Not indicated</i>
6. PET Scan	<i>Not indicated at this time</i>
7. Bone Scan	<i>Not indicated at this time</i>
8. EKG	<i>SR. Cannot exclude old inferior MI</i>
9. Stress test	<i>Reversible ischemia</i>
10. Pulmonary function tests	<i>Not indicated</i>
11. No studies desired	<i>Incorrect choice</i>

PROCEED TO SECTION E**Section E.** Diagnosis

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

- | | |
|----------------------------|------------------|
| 1. Breast mass | <i>Correct</i> |
| 2. Metastatic breast CA | <i>Incorrect</i> |
| 3. Angina with exertion | <i>Correct</i> |
| 4. Coronary artery disease | <i>Correct</i> |
| 5. Arrhythmia | <i>Incorrect</i> |
| 6. Diabetes mellitus | <i>Correct</i> |
| 7. Pulmonary edema | <i>Incorrect</i> |

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 | <i>Incorrect choice</i> |
| 2. Refer to primary care doctor for
“medical clearance” | <i>Incorrect choice</i> |
| 3. Arrange preoperative cardiac evaluation | <i>Correct choice</i> |

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 | <i>Correct choice</i> |
| 2. History of diabetes | <i>Incorrect choice, not insulin-dependent</i> |
| 3. History of stroke | <i>Incorrect choice</i> |
| 4. Dyspnea on exertion | <i>Correct choice</i> |

- | | |
|-------------------------|--|
| 5. Tachycardia | <i>Incorrect choice</i> |
| 6. JVD | <i>Correct choice</i> |
| 7. Murmur | <i>Incorrect choice</i> |
| 8. Cardiomegaly | <i>Incorrect choice (isolated finding)</i> |
| 9. High-risk procedure | <i>Incorrect choice</i> |
| 10. Emergency procedure | <i>Incorrect choice</i> |

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.