Chapter Review

The following exercises provide an opportunity to test your knowledge of this chapter.

Matching

Match each of the items in the left column to the appropriate injury in the right column.

For each of the patients described here, given the mechanism of injury (MOI) and the clinical findings, indicate which injury from the righthand column he or she is most likely to have suffered. (Note: A patient may have sustained more than one of the injuries listed.)

1. A 15-year-old girl who was kicked in the left side by a horse. She is conscious and alert. Her pulse is rapid. She has a bruise over the left 10th rib in the anterior axillary line and has severe tenderness at that point.

2. A 50-year-old man was a passenger in a car that slammed into a wall. He was wearing a lap seat belt. He complains of shortness of breath and abdominal pain. He winces when he coughs. His vital signs are: pulse 92 beats/min and regular, respirations 36 breaths/min and shallow, and blood pressure 120/80 mm Hg.

3. An 18-year-old man shot in the right upper quadrant by his girlfriend wielding a .38 special at a distance of about 10 feet. The patient is conscious. He has cold, sweaty skin and a weak, rapid pulse. There is an entrance wound in the right upper quadrant, about 2 fingerbreadths below the costal margin in the midclavicular line. The exit wound is near the left buttock.

4. A 60-year-old man struck by a car as he was crossing the street. The patient presents with gross hematuria, suprapubic pain and tenderness, difficulty voiding, and abdominal distention, guarding, and rebound tenderness.

5. A 42-year-old construction worker is extricated from underneath a pile of concrete blocks that caved in on top of him. He is unconscious with cold and clammy skin. His pulse is very weak. There are no bruises on the chest, which moves symmetrically with respiration. The abdomen is not rigid, but there seems to be a fullness in the center of the lower quadrant. The pelvis is unstable.

6. Your team is assessing a conscious, alert 18-year-old man who was involved in a high-speed car crash versus bridge abutment. The patient was unrestrained. The patient has an odor of ethyl alcohol; he is currently complaint free. While you are evaluating the patient, you note ecchymosis of the flanks.

7. It’s another weekend night and another stabbing. On arrival you have a conscious, alert male patient. He is lying on the ground with what appears to be exposed abdominal contents.

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A. Diaphragm injury
B. Ruptured spleen
C. Liver laceration
D. Torn or ruptured bladder
E. Retroperitoneal injuries
F. Cullen’s sign
G. Evisceration
8. A patient is struck by falling debris. He was struck on the lower left quadrant and is found to be in profound shock. His lower left quadrant has point tenderness and is rigid.

9. Your patient is a victim of blunt trauma; he is anxious and short of breath. He appears to have associated thoracic, abdominal, head, and extremity injuries.

10. A woman fell from a height while hiking. You are assessing the patient and recognize that she has Kehr's sign. What injury should you anticipate?

**Multiple Choice**
Read each item carefully, and then select the best response.

1. The focused history and physical exam of abdominal injuries includes all of the following, EXCEPT:
   - A. inspect.
   - B. palpate.
   - C. percussion.
   - D. vital signs.

2. Patients who have suffered penetrating abdominal trauma should be treated by:
   - A. removing the penetrating object to facilitate immobilization and transport.
   - B. avoiding direct pressure in older patients with more flaccid abdominal walls.
   - C. replacing protruding abdominal contents prior to transport.
   - D. stabilizing and transporting in the position found.

3. Patients with “open book” pelvic fractures are generally:
   - A. categorized as stable to the pathophysiology of the injury.
   - B. injured as the result of a side impact.
   - C. injured as the result of an anteroposterior compression from a head-on collision.
   - D. found with entrance and exit wounds.

4. Hollow organs are less likely to be injured, unless:
   - A. they are empty.
   - B. the mechanism of injury (MOI) is a motor vehicle crash.
   - C. they are full.
   - D. the patient is a pregnant woman.

5. There are numerous types of blast injuries. These include a/an:
   - A. miscellaneous injury.
   - B. primary blast injury.
   - C. secondary blast injury.
   - D. all of the above.

6. Because of the nature of abdominal trauma in patients, which of the following is required?
   - A. Ensuring an open airway
   - B. Securing the cervical spine
   - C. Administering analgesics
   - D. Establishing IV access

7. Injuries to the retroperitoneal space may include injuries to all of the following, EXCEPT the:
   - A. rectum.
   - B. ureters.
   - C. reproductive organs.
   - D. liver.

8. Crushing injuries may be caused by:
   - A. crushing of abdominal contents by the abdominal wall and the spinal column.
   - B. the dashboard of a car.
   - C. the hood of the car.
   - D. all of the above.
24.2 **SECTION 4 Trauma**

9. In penetrating trauma, it is helpful to:
   A. identify the type of weapon used.
   B. explore the wound to detect the path of destruction.
   C. cleanse the wound site to prevent life-threatening infection.
   D. remove all exposed foreign bodies.

10. The initial assessment for abdominal injuries should include the following EXCEPT:
    A. road rash.          C. swelling.
    B. bruising.           D. epistaxis.

**Labeling**
Label the following diagrams with the correct terms.

1. Label the organs in the peritoneum.

[Diagram of peritoneum with labeled organs]

2. Label the organs in the retroperitoneal space.

[Diagram of retroperitoneal space with labeled organs]
3. Label the organs in the pelvis.

![Organs in the pelvis diagram]

3. Label the organs in the pelvis.

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b. Vital Signs

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c. Pertinent Negatives

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____________________________________________________________________

2. Your unit is standing by at your local arena for indoor motocross. This is a high-speed motorcycle racing event, with numerous elevated jumps and turns. The riders are well protected by helmets and specialized outerwear. While watching, you observe a rider crash into a retaining wall. He initially appears unconscious. As you approach, the patient is alert and speaking clearly. He is attempting to stand and get back on his motorcycle. You quickly notice that bystanders are pointing to the patient's abdomen and you see what appears to be a small protrusion of abdominal contents from his left upper quadrant. It's obvious that the patient has an evisceration. You quickly assess ABCs and immobilize the patient. He has the following vital signs: pulse 100 beats/min and irregular; skin pale, warm, and dry; oxygen saturation of 97% on room air; blood pressure 160/90 mm Hg. After quickly treating the patient and initiating rapid transport you become suspicious because of the patient's vital signs. The patient states he has a history of atrial fibrillation and hypertension. He is currently denying chest pain.

a. Chief Complaint

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

b. Vital Signs

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

c. Pertinent Negatives

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

Ambulance Calls

The following case scenarios provide an opportunity to explore the concerns associated with patient management and paramedic care. Read each scenario, and then answer each question.

1. You are called to the scene of a interstate collision in which an apparently intoxicated 25-year-old driver plowed his car into a bridge abutment at high speed. The front end of his vehicle is accordioned against the bridge. As you approach the disabled vehicle, your keen powers of observation enable you to perceive that the patient is conscious (he is screaming obscenities at a police officer). Describe the steps in evaluating this patient for possible abdominal injuries. In particular, what issues will you be looking for?

a.  ____________________________________________

____________________________________________________________________

____________________________________________________________________

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____________________________________________________________________
2. A 20-year-old man was the unrestrained driver of a car that was struck from the passenger side by another vehicle. The crash caused the empty bucket seat beside him to be jammed into his right side. On your arrival at the collision, you find the patient conscious, but anxious and restless. His skin color is ashen, cool, and diaphoretic. Patient has a delayed capillary refill greater than 2 seconds. His vital signs are a pulse of 140 beats/min and thready, respirations 40 breaths/min and shallow, and blood pressure 72/40 mm Hg. There is a bruise over the right lower ribs. A large portion of the small bowel is eviscerated through an avulsion in the right side of the abdomen. The right elbow appears to be fractured. List the injuries and your priorities in managing this case.

Injuries:

a. 

b. 

c. 

d. 

Priorities:

a. 

b. 

c. 

d. 

e. 

f. 

g. 

3. During the usual Saturday night festivities at the local Knife & Gun Club, a 16-year-old boy is stabbed with a hunting knife in the left lower quadrant of the abdomen. When you arrive, you find him lying on the ground moaning. The knife is still embedded up to its hilt in the patient's abdomen. His skin is pale, warm, and moist. Vital signs are pulse of 100 beats/min, respirations 32 breaths/min, and blood pressure 100/80 mm Hg. List the steps you would take in managing this case.

a. 

b. 

c. 

d. 

24.6 SECTION 4 Trauma

True/False
If you believe the statement to be more true than false, write the letter “T” in the space provided. If you believe the statement to be more false than true, write the letter “F.”

1. Hollow organs are less likely to cause life-threatening injuries.
   _____
2. Patients who suffer ruptured spleens in a traumatic event will likely have that organ removed during life-saving surgery.
   _____
3. Cullen's sign is best described as ecchymosis around the umbilicus.
   _____
4. Treatment of impaled abdominal objects includes removal of the object to allow for proper immobilization and transport.
   _____
5. The leading cause of morbidity and mortality in all age groups is blunt abdominal trauma.
   _____
6. The diaphragm plays a large role in the mechanical process of breathing.
   _____
7. Penetrating trauma to the pelvis rarely causes life-threatening hemorrhage.
   _____
8. PASG/MAST may cause an increase in bleeding by putting pressure on pelvic vessels.
   _____

Fill-in-the-Table
Fill in the missing parts of the table.

1. List the hollow and solid organs of the abdominal cavity.

<table>
<thead>
<tr>
<th>Hollow Organs</th>
<th>Solid Organs</th>
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Short Answer
Complete this section with short written answers using the space provided.

1. Which of the abdominal organs is most likely to be injured in association with:
   a. Rapid deceleration in a motor vehicle crash or a fall from a height: Liver, ________________, intestines, and spleen
   b. Right-sided chest trauma as well as abdominal trauma: ________________
   c. Fracture of the pelvis: ________________
   d. Stab wound to the right upper quadrant: ________________
Chapter 24  Abdomen Injuries  24.7

Crossword Puzzle
Use the clues in the column to complete the puzzle.

Across
6. Organs that are more resilient to blunt trauma
8. Preferred crystalloid solution used to replace fluid
10. Type of trauma that involves at least two thirds of all abdominal injuries

Down
1. RUQ, LUQ, RLQ, LLQ
2. The number of typical patterns of impacts in motor vehicle crashes
3. Divided into three sections
4. Listening to bowel sounds
5. Dome-shaped muscle separating the thoracic and abdominal cavity
7. The lining of the abdominal cavity
9. A collection of blood in the abdominal cavity

Secret Message
Identify the following terms from the clues provided, and then use the letters to decode the secret message:

a. Largest cavity in the body: ____________

b. Largest solid organ in the body: ______

c. Belly button: ______

d. MOI: ________

e. Four different mechanisms: ______

Secret Message
_________