Pre-Lecture

I. You Are the EMT

Time: 10 Minutes

Small Group Activity/Discussion

Use this activity to encourage discussion regarding the types and complexity of abdominal pain. A good lead-in is to ask how many students have had abdominal pain and what the cause was, if they are comfortable sharing, to demonstrate its many possible origins.

Purpose

This activity will allow students an opportunity to explore the significance and concerns associated with treating a patient with abdominal pain.

Instructor Directions

1. Direct students to read the “You Are the EMT” scenario found in the beginning of Chapter 14.
2. You may wish to assign students a partner or group and direct them to review the discussion question at the end of the scenario and prepare a response to each question. Facilitate a class dialogue centered on the discussion questions. Allow approximately 10 minutes for this part of the activity.
3. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.

Lecture

I. The Acute Abdomen

Time: 5 Minutes

Slides: 1-3

Lecture/Discussion

A. Abdominal pain
   1. Common complaint
   2. Cause is often difficult to identify, so not necessary to determine the exact cause
   3. Need to be able to recognize life-threatening problems and act swiftly.

II. Physiology of the Abdomen

Time: 10 Minutes

Slides: 4-5

Lecture/Discussion

A. Acute abdomen
   1. Sudden onset of abdominal pain
2. Indicates peritoneal irritation
3. Caused by infection, penetrating wound, blunt injury, and many diseases
4. Major symptom is severe pain.
5. Clinical signs are abdominal tenderness and distention.

B. Peritoneum is the thin membrane that lines the entire abdominal cavity.
1. Consists of two membranes and two types of nerves supply these areas.
   a. Parietal peritoneum lines the walls of the abdominal cavity.
      1. Supplied by the same nerves that supply the skin
      2. Can perceive pain, touch, pressure, heat, and cold
      3. The nerves cannot localize a point of irritation.
   b. Visceral peritoneum covers the surface of each of the organs in the abdominal cavity.
      1. Supplied by the autonomic nervous system, so the patient is less able to localize sensation.
      2. Stimulated only when distension or forceful contraction of the hollow abdominal organs activates stretch receptors
2. Sensation is usually interpreted as colic, a severe, intermittent cramping pain.

C. Referred pain
1. Perceived pain at a distant point of the body caused by irritation of the visceral peritoneum
2. Result of connections between the body’s two separate nervous systems
   a. Spinal cord supplies sensory nerves to skin and muscles.
   b. Autonomic nervous system controls abdominal organs and the blood vessels.
   c. Nerves connecting these two systems cause the stimulation of the autonomic nerves to be perceived as stimulation of the spinal sensory nerves. Example: Acute cholecystitis may cause pain in the right shoulder, because the autonomic nerves serving the gallbladder lie near the spinal cord at the same anatomic level as the spinal sensory nerves that supply the skin of the shoulder.

D. Peritonitis
1. Irritation of the peritoneum caused by illness or injury
2. Typically causes ileus, or paralysis of the muscular contractions in the intestine, which causes abdominal distention.
3. Nothing that is eaten can pass normally out of the stomach or through the bowel.
4. The only means by which the stomach can empty itself is through vomiting.
5. Almost always associated with nausea and vomiting
6. These signs and symptoms can accompany almost every type of gastrointestinal disease or injury.

III. Signs and Symptoms of Acute Abdomen

| Time: 10 Minutes |
| Slides: 6-8 |
| Lecture/Discussion |

A. Anorexia
1. Loss of hunger or appetite
2. An almost universal complaint in gastrointestinal and abdominal disease or injury

B. Loss of body fluid into the abdominal cavity
1. Usually results from abnormal shifts of fluid from the bloodstream into body tissues.
2. Decreases the volume of circulating blood
3. May eventually cause shock
C. May have normal vital signs or tachycardia and hypotension
D. Fever may or may not be present.

E. Abdominal pain and tenderness
   1. May be localized or diffuse and will vary in severity
   2. Localized pain provides a clue to the problem.
   3. Tenderness may be minimal or great.

F. Tenseness of the abdominal muscles over the irritated area
   1. Board-like muscle spasm called guarding, which accompanies major problems
   2. Patients comfortable only when lying in one particular position, which relaxes muscles and lessens the pain.

G. Distention
   1. Gauging distention
      a. Look at the abdomen.
      b. Distention begins shortly after muscle contractions have ceased.
      c. Pulse and blood pressure may or may not change.
      d. Findings usually reflect the severity of the process, duration, and amount of fluid lost in the abdomen.
   2. Patients with distention caused by peritonitis usually have abdominal pain, even when lying quietly.
   3. Patients may take rapid, shallow breaths because of pain.
   4. Tenderness on palpation of the abdomen or when patient moves
   5. Degree of pain and tenderness is usually related to the severity of peritoneal inflammation.

H. Common signs and symptoms of acute abdomen
   1. Local or diffuse pain and/or tenderness
   2. A quiet patient who is guarding the abdomen (in shock)
   3. Rapid and shallow breathing
   4. Referred (distant) pain
   5. Anorexia, nausea, vomiting
   6. Tense, often distended, abdomen
   7. Sudden constipation or bloody diarrhea
   8. Tachycardia
   9. Hypotension
   10. Fever
   11. Rebound tenderness (less pain when direct pressure is applied, but very painful when pressure is released)

I. Examining the abdomen
   1. Explain to the patient what you are about to do.
   2. Position patient supine with the legs drawn up and flexed at the knees.
   3. Evaluate and inspect for restlessness or quietness; whether motion causes pain; any characteristic position; distention; or obvious abnormalities.
   4. Palpate the four quadrants of the abdomen gently to determine whether it is tense (guarded) or soft.
   5. Determine whether the patient can relax the abdominal wall on command.
   6. Determine whether the abdomen is tender when palpated.
IV. Causes of Abdominal Pain

- **A. Gastrointestinal and urinary tract**
  1. Nearly every kind of abdominal problem can cause an acute abdomen.
  2. Any condition that allows pus, blood, feces, urine, gastric juice, intestinal contents, bile, pancreatic juice, amniotic fluid, or other foreign material to lie within or adjacent to the abdominal cavity can cause an acute abdomen.
  3. Technically, organs such as kidneys, ovaries, and other genitourinary structures are retroperitoneal but because they lie next to the peritoneum, problems in these organs can lead to an acute abdomen.
  4. Common abdominal conditions
     a. Acute appendicitis
     b. Perforated gastric ulcer
     c. Cholecystitis
     d. Diverticulitis

- **B. Uterus and ovaries**
  1. Problems with ovaries, fallopian tubes, and uterus are common causes of acute abdominal pain in women.
  2. Always consider the possibility that a woman with lower abdominal pain and tenderness may have a gynecological problem.
  3. Pain may also be related to normal menstrual cycle.
  4. Common cause of an acute abdomen in women is pelvic inflammatory disease (PID), an infection of the fallopian tubes and tissues of the pelvis.
  5. Ectopic pregnancy
     a. Fertilized egg is implanted outside the uterus, usually in a fallopian tube.
     b. Fallopian tube is not large enough to support the growth for more than about 6 to 8 weeks.
     c. When the tube ruptures, it produces massive internal hemorrhage and abrupt abdominal pain.
     d. Patient needs immediate transport to the hospital.

- **C. Other organ systems**
  1. Aneurysm
     a. Wall of the aorta sometimes develops weak areas that swell to form an aneurysm.
     b. Ruptured aneurysms can cause massive hemorrhage.
     c. May also cause severe back pain
     d. The bleeding usually leads to profound shock.
     e. Patient needs immediate transport.
     f. Avoid unnecessary or vigorous palpation of the abdomen.
     g. Handle gently.
  2. Pneumonia, especially in the lower parts of the lungs, may cause ileus and abdominal pain.
  3. Hernia: Protrusion of an organ or tissue through a hole in the body wall.
     a. Causes
        1. Congenital defect
        2. Surgical wound that has failed to heal properly
        3. Natural weakness in an area such as in the groin
     b. Produces a mass or lump that will be noticeable to the patient.
     c. Incarcerated hernia
1. Mass that cannot be pushed back within the body
2. Contents of incarcerated hernias may become compressed by surrounding tissue.
3. Eventually compromises the blood supply
4. This is strangulation, a serious medical emergency.
5. Patient may experience pain, tenderness, red or blue skin discoloration over the hernia.
6. Prompt transport needed.

V. Emergency Medical Care

| Time: 5 Minutes |
| Slides: 12-14 |
| Lecture/Discussion |

A. Do not delay transport.

B. Carry out the following steps as quickly as possible before transport:
   1. Do not attempt to diagnose the cause of the acute abdomen.
   2. Clear and maintain the airway.
   3. Anticipate vomiting.
   4. Administer oxygen.
   5. Do not give the patient anything by mouth.
   7. Anticipate the development of hypovolemic shock.
   8. Make the patient as comfortable as possible.
   9. Monitor vital signs.

C. Geriatric patients
   1. May have decreased pain perception
   2. May not have fever with infection
   3. May delay seeking care because pain is minimal
   4. Assess carefully.

Post-Lecture

I. Prep Kit Activities

| Time: 60 Minutes |
| Small Group/Individual Activity/Discussion |

Note: The Prep Kit contains various student-centered end-of-chapter activities designed as enhancement to the instructor’s presentation. As time permits, these activities may be presented in class. They are also designed to be used as outside/homework activities.

A. Assessment in Action
This activity is designed to assist the student in gaining a further understanding of issues surrounding the patient with acute abdominal pain. The activity incorporates both critical thinking and application of basic EMT-B knowledge.
Purpose
This activity allows the student to analyze an emergency care scenario and develop responses to critical thinking questions.

Instructor Directions
1. Direct students to read the “Assessment in Action” scenario located in the Prep Kit at the end of Chapter 14.
2. For the quiz questions, direct students to read and individually answer the quiz questions at the end of the scenario. Allow approximately 10 minutes for this part of the activity. Facilitate a class review and dialogue of the answers, allowing students to correct responses as needed. Use the quiz question answers noted below to assist in building this review. Allow approximately 10 minutes for this part of the activity.
3. You may also use these as individual activities and ask students to turn in their comments on a separate piece of paper.

Answers to Multiple-Choice Questions
1. Answer: B  The priority of care is airway and breathing, with application of oxygen the first step. Next, place the patient in a supine position, elevate his legs, and keep him warm.
2. Answer: D  The normal pulse rate for an adult is between 60 and 100 beats/min.
3. Answer: C  Testing for capillary refill evaluates the ability of the circulatory system to restore blood to the capillary system, which is a reflection of the patient’s perfusion. Breath sounds helps assess the respiratory system. Pedal edema indicates that the body is retaining fluids. Checking the pupils evaluates the function of the brain or the presence of an eye injury.
4. Answer: A  When it started (onset), what makes it better or worse (provoke), describing the pain (quality), does the pain appear anywhere else (radiation), how bad is it (severity), and has this ever occurred before (time) will provide the most useful information about this patient’s abdominal pain.
5. Answer: B  Pain that occurs at some distance from the original location of pain is termed “referred” pain. Diffuse pain is pain that is difficult to localize. Focal pain is pain that is in a single place. Severe pain is non-specific to a location.
6. Answer: D  Food or fluid may aggravate any abdominal problem he may have and may cause vomiting. Asking him to wait does not inform him of the possible risks involved.
7. Answer: D  Vomitus that looks like coffee-grounds is classic for the appearance of blood after blood has come into contact with digestive enzymes. This condition is not specific for alcohol abuse. Hemorrhoids are located in the rectum. Well-digested food contains shreds of identifiable food.
8. Answer: A  Cool, clammy skin in the presence of a rapid heart rate and low normal blood pressure is highly suggestive of a patient that is in shock, most likely due to a gastrointestinal bleeding (from the character of his vomitus). Alcohol withdrawal syndrome and vomiting due to a food-related illness do not commonly result in upper gastrointestinal bleeding. A ruptured liver does not result in gastrointestinal bleeding.

Challenging Questions Answers
9. Answer: The onset of dizziness when a patient gets up is important because it suggests inadequate fluid volume, especially when the patient is cool, sweaty, and has a fast pulse.
10. Answer: What do his stools look like? The answer to this question will tell you if he also has lower gastrointestinal bleeding, which increases the seriousness of the situation. Additional questions include: When and what did you last eat? Has this ever happened to you before? If so, what was the problem then? Do you take any medications? If so, did you take it?

B. Points to Ponder
This activity will allow you to help your students probe the more difficult situations that they may face. Use this as an opportunity to allow them to express differences of opinion and approach, while directing them to be thorough and decisive in their answers. Encourage challenges.

Purpose
To allow students an opportunity to apply critical thinking analysis to a given case study.

Instructor Directions
1. Direct students to read the “Points to Ponder” scenario found in the Prep Kit at the end of Chapter 14.
2. You may wish to assign students a partner or group and direct them to review the discussion question at the end of the scenario and prepare a response. Allow approximately 10 minutes for this part of the activity.

3. Facilitate a class dialogue centered on the discussion point. Allow approximately 10 minutes for this part of the activity. You may also use this as an individual activity and ask students to turn in their comments on a separate piece of paper.

4. Personally review the scenario and discussion question based on your experience and knowledge as an emergency care worker. Develop your own key points for guiding this discussion.

Scenario
You respond to a 13 year-old girl with severe abdominal pain. You find the pain to be generalized throughout the abdomen and the abdomen is rigid. Both of her parents are present and confirm that she has no history of abdominal problems. You ask the girl if there is any chance she could be pregnant. Her father becomes quite upset and yells that she is only 13. You notice a change in both the girl’s and the father’s behavior and an unwillingness to answer questions. You are ready to transport and when the parents go to get their coats, the girl tells you that her father has been “raping” her and that she thinks she may be pregnant. She is afraid that if her father finds out she is pregnant or if she tells anyone what is happening that he will beat her, like he did before. She asks you not to tell anyone. How do you deal with this information? Do you report this and if so, to whom? Would you allow the father to go with her in the ambulance? Do you tell the staff in the hospital even though she asked you not to?

Issues to Consider
• Reporting Requirements
• Reporting Procedures
• Patient Confidentiality
• Sexual Abuse
• Well-Being of the EMT-B

C. Online Outlook
This activity requires students to have access to the Internet. This may be accomplished through personal access, employer access, or through a local educational institution. Some community colleges, universities, or adult education centers may have classrooms with Internet capability that will allow for this activity to be completed in class. Check out local access points and encourage students to complete this activity as part of their ongoing reinforcement of basic EMT-B knowledge and skills.

Purpose
To provide students an opportunity to reinforce chapter material through use of online Internet activities.

Instructor Directions
1. Use the Internet and go to www.emtb.com. Follow the directions on the web site to access the exercises for Chapter 14.
2. Review the chapter activities and take note of desired or correct student responses.
3. As time allows, conduct an in-class review of the Internet activity and provide feedback to students as may be needed.
4. Be sure to check the web site before assigning this activity, as specific chapter-related activities may change from time to time.

II. Lesson Review

Time: 10 Minutes

Discussion

Note: Facilitate a review of this lesson’s major topics using the review questions as direct or overhead questions. Answers are found throughout this lesson plan with IRK references listed for each question.

A. Describe and explain referred pain. (Lecture II-C)
B. Describe the signs and symptoms of acute abdomen. (Lecture III-A-I)
C. List the causes of abdominal pain. (Lecture IV)
D. What body systems outside the abdominal cavity can cause peritonitis? (Lecture IV)
E. What is the basic emergency care for a patient complaining of abdominal pain? (Lecture V)

III. Assignments

<table>
<thead>
<tr>
<th>Time: 5 Minutes</th>
<th>Lecture</th>
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<tbody>
<tr>
<td>A. Review all materials from this lesson and be prepared for a lesson quiz to be administered (date to be determined by instructor).</td>
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<tr>
<td>B. Read Chapter 15: <em>Diabetic Emergencies</em> for the next class session.</td>
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