Firefighter Pre-Hospital Care Program
Module 19

Abdominal Injuries
Firefighter Pre-Hospital Care Program

Module 19

At the end of the lesson and upon completion of the post test quiz, the participant will demonstrate an understanding of:

• how to accurately assess a patient experiencing an abdominal injury.
• how to determine priorities related to an abdominal injury.
• how to provided emergency patient care in a safe manner, consistent with local standards and Base Hospital direction.
• how to perform ongoing assessments and interventions in response to the patient’s presentation, changing treatment requirements and environmental variables.
• how to evaluate the effectiveness of treatment measures.
The Abdomen

- The abdomen is a major body cavity.
- It contains the organs of digestion and excretion.
- It is separated into 4 quadrants
- Pain in a particular quadrant provides important clues to certain injuries or diseases
Hollow Organs in the Abdominal Cavity

- Gallbladder
- Bile Duct
- Urinary Bladder
- Appendix
- Stomach
- Large Intestine
- Small Intestine
- Rectum
Solid Organs in the Abdominal Cavity

Liver

Pancreas

Spleen
Anatomy of the Genitourinary System

- Kidney
- Ureter
- Urinary bladder
- Urethra
- Retroperitoneal plane
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Injuries to Abdomen
Blunt Force Abdominal Injuries

- Severe bruises of the abdominal wall
- Laceration of the liver and spleen
- Rupture of the intestine
- Tears in the mesentery (this is the network of blood vessels that leads to the intestine)
- Rupture or tearing of the kidneys
- Rupture of the bladder
- Severe intra-abdominal hemorrhage
- Bleeding or leakage of intestinal contents from injuries can cause internal irritation and inflammation (this manifests as pain or tenderness on palpation)
Referred Pain

• The body doesn’t always sense which organ is injured

• Referred pain is when an injured or diseased organ “fools” the brain into sensing pain at a distant location

Examples include:

• Shoulder pain caused by internal bleeding or gallstone attack

• Arm or jaw pain due to a heart attack
Acute Abdomen

- Refers to a sudden, severe abdominal pain that is less than 24 hours in duration. It is in many cases an emergent condition requiring urgent and specific diagnosis. Several causes need surgical treatment.
Acute Abdomen

- Nearly every kind of abdominal problem can cause an acute abdomen
- Many of these will result in emergency surgery and/or hospital admission
Examples of Acute Abdomen

• Perforation of an ulcer

• Gallstones that lead to inflammation (cholecystitis)

• Inflammation of the pancreas (pancreatitis)

• Inflammation or infection of appendix (appendicitis)

• Inflammation of pouches in large intestine (diverticulitis)

• Bowel Obstruction

• Gynecological Emergencies (ectopic pregnancy – implantation of a fetus in an abnormal location outside the uterus)
Signs and Symptoms of an Acute Abdomen

“Acute abdomen” means there is a serious abdominal condition/disease or injury.

Patients may have some or all of these findings:

- Severe pain
- When palpating the abdomen with increasing pressure, the abdomen will be firm or hard
- Pain will increase as pressure from palpation is released
- Low blood pressure (hypotension), fast heart rate (tachycardia), high fever (febrile)
Closed Abdominal Injuries

- Caused by blunt force trauma such as striking the steering wheel or improper wearing of a seatbelt
- Involves injury to the abdomen without breaking the skin
- Serious injuries may be hidden inside
Closed Abdominal Injuries

Possible Injuries:

- Laceration of the liver or spleen
- Rupture of the intestine
- Rupture or avulsion of the kidneys
- Rupture of the bladder, especially if the patient had a full or distended abdomen at the time of injury
- Internal bleeding

Compression of abdominal organs by seatbelts can cause closed abdominal injuries
Open Abdominal Injuries

- Also known as penetrating injuries

- Identified when a foreign object enters the abdomen and opens the peritoneal cavity to the outside

- Always maintain a high level of suspicion for unseen injuries such as spinal cord injuries and damage to internal organs

Evisceration is when abdominal organs protrude through a wound
Injuries of the Kidney

Suspect kidney damage if patient has a history or physical evidence of:

- Abrasion, laceration, or contusion in the flank
- A penetrating wound in the region of the lower rib cage or upper abdomen
- Fractures on either side of the lower rib cage or of the lower thoracic or lumbar vertebrae
- History of a blunt force injury in the flank region
Injury of the Urinary Bladder

- Fractures of the pelvis can result in a laceration of the bladder.

- Either a blunt or penetrating injury can rupture the bladder.

- Urine will spill into the surrounding tissues.

- Suspect if there are physical signs of trauma on the lower abdomen, pelvis, or perineum (around genitals).
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Treatment for Abdominal Emergencies
Treatment for Abdominal Emergencies

• Complete a full primary assessment
• Administer supplemental oxygen at 10 L/min via non-rebreathing mask.
• Place patient in a position of comfort
• Obtain a detailed history including SAMPLE and OPQRST assessments
• Consider both Mechanisms of Injury (MOI) and Nature of Illness (NOI) while doing your assessment
The Question of a SAMPLE History

• **S**igns and Symptoms
  – What things you see and what the patient complains of
  – Changes from onset, to assessment, to treatment?

• **A**llergies
  – Is the patient allergic to medications, foods, or other?

• **M**edications
  – What medications is the patient taking?
  – Gather them and their health card
The Question of a SAMPLE History

• **P**ertinent past history
  – Does the patient have any medical history?
  – For a female patient, is there a chance she could be pregnant?

• **L**ast oral intake
  – When did the patient last eat or drink?

• **E**vents leading to injury or illness
  – What was happening when the this incident began?
The Question of O P Q R S T

• **Onset**
  – When did the problem first start?

• **Provoxing factors**
  – What creates or makes the problem worse?

• **Quality of pain**
  – ‘Describe how the pain feels.’
The Question of O P Q R S T

• **R**adiation of pain or discomfort
  – Do you feel any discomfort anywhere else?

• **S**everity
  – Intensity of pain on scale of 1-to-10
  – Remember this is a relative rating!

• **T**ime
  – How long has the patient had this problem?
Focused Assessment

- Explain what you are about to do

- Determine if movement causes pain and if distention is present

- Palpate the four quadrants of the patient’s abdomen gently
Focused Assessment

- Determine whether patient can relax abdomen on command
- Determine whether abdomen is tender when palpated
- Palpate gently—rough palpation could cause further damage
Emergency Medical Care for an Acute Abdomen

- Take steps to provide comfort and lessen effects of shock; reassure patient
- Anticipate vomiting
- Position patients who are vomiting to maintain airway
- Be sure to use full P.P.E.
- If not trauma, position the patient in a comfortable position
Emergency Medical Care for Penetrating Injuries

- Inspect patient’s back and sides for exit wounds.

- Apply a dry, sterile dressing to all open wounds.

- If the penetrating object is still in place, apply a stabilizing bandage around it to control bleeding and minimize movement.
Emergency Medical Care for an Evisceration

- Never replace the organs
- Cover with a sterile dressing moistened with sterile water (saline!!)
Emergency Medical Care for an Evisceration

- Cover moistened dressing with an occlusive (will not allow air to penetrate) dressing

- Tape dressing on all four sides; consider using your foil blanket, opened large enough to cover the wound – it could be wrapped around the abdominal region
Emergency Medical Care for an Injury to the External Male Genitalia

- These injuries are painful. Make the patient comfortable.
- Use sterile, moist compresses to cover areas stripped of skin.
- Apply direct pressure to control bleeding.
- Never manipulate any impaled objects.
- Identify and be sure avulsed parts go to the hospital with the patient.
Emergency Medical Care for Injuries of the Female Genitalia

- Female internal genitalia is well protected and usually not injured.

- The exception is the pregnant uterus which is vulnerable to both blunt and penetrating injuries.
  - Keep in mind that the unborn child is also at risk.
  - Expect to see signs and symptoms of shock.
  - Provide all necessary support.
  - Consider ectopic pregnancy in a woman with abdominal pain.
For All Questions Pertaining to this Module,

Contact Your E.M.S. Command Coordinator.

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