

Vanderbilt University Medical Center
Emergency General Surgery Service
Surgical Residency Rotation and Curriculum

UNIT 11 ABDOMINAL SURGERY

UNIT OBJECTIVES:

1. Demonstrate an understanding of the anatomy, physiology, pathophysiology, and presentation of emergency diseases of the abdominal cavity and pelvis.
2. Demonstrate the ability to formulate and implement a diagnostic and treatment plan for diseases of the abdomen and pelvis that are amenable to emergent surgical intervention.

COMPETENCY-BASED KNOWLEDGE OBJECTIVES:

Junior Level:

1. Assess the following signs associated with the acute abdomen and describe their pathophysiology:
 - a. Referred pain
 - b. Rebound tenderness
 - c. Guarding
 - d. Rigidity
2. Specify characteristics of the history, physical examination findings, and mechanism of visceral and somatic pain for the following processes:
 - a. Acute appendicitis
 - b. Bowel obstruction
 - c. Perforated ulcer
 - d. Ureteral colic
 - e. Diffuse peritonitis
3. List possible distinctions in the presentation and examination of the elderly patient with the following causes of acute abdomen:
 - a. Gastric/duodenal ulcer
 - b. Cholecystitis
 - c. Perforated viscus (ulcer, diverticulitis, appendicitis)
4. Discuss the differences in the physiologic response to stress in the geriatric patient.
5. Explain the mechanism of referred pain in:
 - a. Ruptured spleen
 - b. Biliary colic
 - c. Basilar pneumonia
 - d. Renal colic
 - e. Pancreatitis
 - f. Inguinal hernia
6. Discuss the following causes of paralytic ileus:
 - a. Postoperative electrolyte imbalance
 - b. Retroperitoneal pathology
 - c. Extraperitoneal disease (central nervous system, lung)
7. When considering the possibility of wound complications:
 - a. What are the risk factors for abdominal wound infection?
 - b. What are the contributing factors for abdominal wound dehiscence and evisceration?
 - c. What are the usual clinical presentations?
 - d. What is the incidence of wound infection in surgeries involving the biliary tree, upper GI tract, and colon?

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- e. List wound complications that are more problematic in the elderly.
- 8. Identify the anatomic locations for the following intra-abdominal abscesses; name disease process(es) associated with each:
 - a. Left subphrenic space
 - b. Right subphrenic space
 - c. Subhepatic space
 - d. Lesser sac
 - e. Interloop
 - f. Pelvis
 - g. Left paracolic gutter
 - h. Right paracolic gutter
 - i. Psoas muscle
- 9. Differentiate between the conditions favoring percutaneous drainage versus operative drainage for each of the abscesses in #8. Describe the safest and most effective approach using each technique.
- 10. Differentiate between the following intestinal fistulas and the organs to which they most often communicate:
 - a. Esophageal
 - b. Gastric
 - c. Enteric (including duodenal)
 - d. Colonic
- 12. Explain the formation of fistulas in each of the following disease processes or factors:
 - a. Operative complications (bowel injury with abscess formation)
 - b. Inflammatory bowel disease
 - c. Acute pancreatitis
 - d. Foreign body or prosthetic material
 - e. Malignancy
- 13. Explain the role of a fistulogram in the diagnosis of intra-abdominal fistulas and abscesses.
- 14. List the factors that prevent healing of a fistula.
- 15. Summarize the conditions favoring operative versus non-operative treatment for fistulas listed in #12.
- 16. Describe the anatomy, clinical presentation, and complications of non-operative management for these hernias:
 - a. Direct, indirect, inguinal, and femoral
 - b. Sliding hiatal
 - c. Paraesophageal
 - d. Ventral
 - e. Umbilical
 - f. Spigelian
 - g. Paraduodenal
 - h. Obturator
 - i. Lumbar
 - j. Parastomal
 - k. Diaphragmatic
 - (1) Posterolateral (Bochdalek)
 - (2) Anterior (Morgagni)
 - (3) Traumatic
 - l. Internal
 - m. Petit

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16. Define a Richter's hernia and describe its clinical presentation.
17. Define a sliding hernia and describe its repair.
18. Differentiate between incarceration and strangulation.

Senior Level:

1. Summarize the surgical procedures available for repair of the hernias listed in #15 above.
2. Outline the uses of prosthetic material and management of infection for incisional or recurrent hernias involving prosthetic material.
3. Explain the operative approaches (incisions) for each of the following, including laparoscopic:
 - a. Abdominal cavity: liver/biliary tract, spleen, small bowel, pelvis
 - b. Retroperitoneal organs: kidneys, adrenal glands, pancreas, duodenum
4. Describe the use and method of placement of retention sutures.
5. Describe the pathophysiology and treatment of ascites in:
 - a. Malignancy
 - b. Hepatic disease: cirrhosis, Budd-Chiari Syndrome
 - c. Chylous leak
 - d. Pancreatic leak
 - e. Cardiac disease
 - f. Renal disease
 - g. Bile leak
6. Describe the etiology, manifestations, and treatment of:
 - a. Desmoid tumors
 - b. Rectus sheath hematoma
 - c. Retroperitoneal fibrosis

COMPETENCY-BASED PERFORMANCE OBJECTIVES:

Junior Level:

1. Evaluate and diagnose the acute abdomen.
2. Assist with hernia repairs in the groin or umbilical regions, demonstrating a basic understanding of the anatomy and surgical repair.
3. Interpret the following in coordination with attending radiologists and staff:
 - a. Acute abdominal series (identify free air, small bowel obstruction, ileus, colonic pseudoobstruction, volvulus; the presence of ascites, atelectasis vs. pneumonia)
 - b. Upper GI series
 - c. Barium enema (identify neoplasms, signs of ischemia)
 - d. Abdominal ultrasound and CT scans
4. Evaluate and institute management of abdominal wound problems, including:
 - a. Infection
 - b. Evisceration

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- c. Fasciitis
 - d. Dehiscence
5. Coordinate pre- and post- operative care for the patient with the acute abdomen.
 6. Institute drainage for abdominal wall fistula and protection of surrounding structures, especially skin.
 7. Assist in closure of abdominal incisions; exhibit competency in suture technique.

Senior Level:

1. Open and close abdominal incisions of all varieties.
2. Treat wound complications such as infections and evisceration. Use retention sutures appropriately.
3. Perform laparotomy for acute abdomen, demonstrating a systematic approach for determination of the etiology of the process and appropriate measures for its management (e.g., acute appendicitis, small bowel obstruction, perforated peptic ulcer [the 5th year resident should be able to guide the more junior resident through the case]).
4. Perform more complex laparotomies involving diffuse peritonitis in the septic patient (e.g., a gangrenous or severely inflamed gallbladder or perforated diverticulitis requiring resection).
5. Coach a junior resident through the repair of simple hernia (indirect inguinal or umbilical). The chief resident should be able to perform repair of any of the hernias mentioned earlier in the text.
6. Provide appropriate surgical drainage for any intra-abdominal abscess.