

COMMON MEDICAL CONDITIONS IN GENERAL SURGERY: A COMPREHENSIVE CLINICAL REVIEW

Azimova Gulnoza Ravshanovna

Senior Lecturer, PhD, Department of General Surgery, FMIOPH, Fergana, Uzbekistan
E-mail: ravshanovnagulnoza@gmail.com

Abstract

General surgery encompasses the diagnosis and operative management of a broad spectrum of diseases affecting the gastrointestinal tract, hepatobiliary system, abdominal wall, endocrine organs, and soft tissues. Many of these conditions present frequently in emergency and elective surgical practice and require prompt recognition, accurate diagnosis, and timely intervention to reduce morbidity and mortality. This review provides a structured overview of the most commonly encountered general surgical conditions, focusing on clinical presentation, diagnostic approaches, treatment strategies, and potential complications. The aim is to offer a concise yet thorough reference for medical students, surgical trainees, and practicing clinicians seeking a comprehensive understanding of core general surgery pathology.

Keywords: General surgery, acute abdomen, appendicitis, hernia, gallstone disease, colorectal cancer, surgical indications, complications

1. Acute Appendicitis

Clinical Presentation

Acute appendicitis is one of the most frequent causes of acute abdomen requiring emergency surgery. Patients typically present with periumbilical pain that later localizes to the right lower quadrant, often accompanied by anorexia, nausea, vomiting, and low-grade fever. Physical findings include localized tenderness, rebound pain, and guarding.

Diagnosis

Diagnosis is primarily clinical, supported by laboratory findings such as leukocytosis and elevated inflammatory markers. Imaging—especially abdominal ultrasonography or computed tomography—is widely used to confirm diagnosis and identify complications such as perforation or abscess formation.

Treatment

Standard treatment is surgical removal of the appendix, either by open or laparoscopic appendectomy. In selected uncomplicated cases, non-operative management with antibiotics may be considered under close supervision.

Complications

Delayed treatment may lead to perforation, peritonitis, intra-abdominal abscess, and sepsis.

2. Gallstone Disease and Acute Cholecystitis

Clinical Presentation

Gallstone disease may be asymptomatic or present with biliary colic—episodic right upper quadrant pain often triggered by fatty meals. Acute cholecystitis is characterized by persistent pain, fever, nausea, vomiting, and a positive Murphy’s sign.

Diagnosis

Abdominal ultrasonography is the diagnostic modality of choice, demonstrating gallstones, gallbladder wall thickening, and pericholecystic fluid. Laboratory tests may reveal leukocytosis and mild liver enzyme elevation.

Treatment

Laparoscopic cholecystectomy is the definitive treatment for symptomatic gallstones and acute cholecystitis. Conservative management with antibiotics and supportive care may be used temporarily in high-risk patients.

Complications

Potential complications include gallbladder perforation, empyema, choledocholithiasis, and pancreatitis.

3. Abdominal Hernias**Clinical Presentation**

Abdominal wall hernias commonly present as reducible or irreducible bulges associated with discomfort or pain, particularly during physical activity. Incarcerated or strangulated hernias may present with severe pain, bowel obstruction, and systemic symptoms.

Diagnosis

Diagnosis is often clinical. Imaging, particularly ultrasonography or CT scan, is useful in uncertain cases or suspected complications.

Treatment

Surgical repair is the definitive treatment, using open or laparoscopic techniques with or without mesh reinforcement.

Complications

Untreated hernias may progress to incarceration, strangulation, bowel ischemia, and perforation.

4. Intestinal Obstruction**Clinical Presentation**

Patients typically present with abdominal distension, colicky pain, vomiting, and failure to pass stool or flatus. Common causes include postoperative adhesions, hernias, tumors, and volvulus.

Diagnosis

Plain abdominal radiographs may show dilated bowel loops and air-fluid levels. Computed tomography is essential for determining the cause, level, and severity of obstruction.

Treatment

Initial management includes fluid resuscitation, nasogastric decompression, and electrolyte correction. Surgical intervention is indicated for complete obstruction, strangulation, or failure of conservative management.

Complications

Delayed treatment can result in bowel ischemia, perforation, peritonitis, and septic shock.

5. Colorectal Cancer

Clinical Presentation

Colorectal cancer may present with altered bowel habits, rectal bleeding, anemia, weight loss, or intestinal obstruction. Early stages are often asymptomatic.

Diagnosis

Colonoscopy with biopsy is the gold standard for diagnosis. Staging involves imaging studies such as CT scans and, in selected cases, MRI.

Treatment

Surgical resection remains the cornerstone of treatment, often combined with chemotherapy or radiotherapy depending on stage and tumor location.

Complications

Complications include bowel obstruction, perforation, metastatic disease, and postoperative morbidity.

6. Acute Pancreatitis

Clinical Presentation

Acute pancreatitis typically presents with severe epigastric pain radiating to the back, nausea, vomiting, and abdominal tenderness. Gallstones and alcohol use are the most common etiologies.

Diagnosis

Diagnosis is based on clinical features, elevated serum amylase or lipase levels, and imaging findings on CT scan.

Treatment

Management is primarily supportive, including aggressive fluid resuscitation, pain control, and nutritional support. Surgical or endoscopic intervention may be required for complications.

Complications

Severe cases may lead to pancreatic necrosis, abscess formation, organ failure, and death.

7. Peritonitis

Clinical Presentation

Peritonitis presents with severe abdominal pain, rigidity, guarding, fever, and systemic toxicity. It often results from perforation of a hollow viscus or postoperative infection.

Diagnosis

Diagnosis is clinical, supported by laboratory markers of infection and imaging demonstrating free air or fluid in the abdominal cavity.

Treatment

Management requires prompt surgical intervention, broad-spectrum antibiotics, and intensive supportive care.

Complications

If untreated, peritonitis rapidly progresses to sepsis, multi-organ failure, and death.

Conclusion

General surgery encompasses a wide range of common yet potentially life-threatening conditions that demand a strong foundation in clinical assessment, diagnostic reasoning, and surgical decision-making. Diseases such as appendicitis, gallstone pathology, hernias, intestinal obstruction, and colorectal cancer form the core workload of general surgical practice, while conditions like pancreatitis and peritonitis represent critical emergencies. Early recognition, appropriate diagnostic strategies, and timely surgical or conservative management are essential for optimal patient outcomes. A comprehensive understanding of these conditions not only improves surgical proficiency but also enhances multidisciplinary collaboration and patient safety in both emergency and elective care settings.

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