Acute Inflammatory Surgical Disease

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KEYWORDS

- Appendicitis Cholecystitis Cholangitis Pancreatitis Diverticulitis
- Clostridium difficile
 Colitis

KEY POINTS

- Computed tomography is the most accurate way to diagnose appendicitis and its complications. Abscesses should be percutaneously drained, phlegmon treated with antibiotics, and appendectomy performed in most other cases.
- Immediate laparoscopic cholecystectomy is standard treatment for acute cholecystitis, though percutaneous cholecystostomy is effective in high risk patients. Cholangitis should be treated with endoscopic retrograde cholangiography and sphincterotomy.
- Infected pancreatic necrosis is the primary indication for intervention in pancreatitis. A "step-up" approach beginning with percutaneous or endoscopic drainage and proceeding to surgical debridement when necessary should be used.
- Diverticulitis without abscess or with small abscess should be treated with antibiotics alone. Large diverticular abscesses should be percutaneously drained. In cases of free perforation with peritonitis mandating surgery, primary anastomosis with or without proximal diversion should be considered.
- Subtotal colectomy with end ileostomy is standard surgical therapy for medically refractory Clostridium difficile colitis. There may be a role for ileostomy with antegrade colonic lavage.

Infectious and inflammatory diseases comprise some of the most common gastrointestinal disorders resulting in hospitalization in the United States. Accordingly, they occupy a significant proportion of the workload of the acute care surgeon.

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APPENDICITIS

Key points

- Young men with a typical clinical presentation do not require imaging.
- Computed tomography with intravenous contrast is the imaging modality of choice when required.
- Perforated appendicitis with abscess should be treated with percutaneous drainage.
- Perforated appendicitis with phlegmon should be treated with antibiotics alone.
- Laparoscopic appendectomy results in fewer surgical infections than open appendectomy.

In 1886, Reginald Fitz of Boston, in his monograph "Diseases of the Vermiform Appendix," correctly identified the appendix as the primary cause of right lower quadrant inflammation and coined the term appendicitis. Appendicitis is the most common problem of the colon, affecting approximately 300,000 patients a year and some estimate 8% of the Western country population will face appendicitis some time in their lives.¹ In the past, reliance on physical examination and laboratory findings have been the mainstay of diagnosis but in the era of computed tomography and ultrasound imaging, studies are increasingly accepted to assess for appendicitis. The standard treatment has traditionally been open appendectomy, but the number of laparoscopic appendectomies has now surpassed the number of open appendectomies in the United States. Even more recently, there has been a growing debate regarding the nonoperative approach to appendicitis, namely treatment with antibiotics. We review the basic diagnostic options and describe treatment options for acute appendicitis, including the treatment of the perforated appendicitis or delayed presentations.

Clinical History and Physical Examination

Appendicitis typically occurs as a result of the obstruction of the appendiceal lumen that subsequently results in ischemia and inflammation. This ischemia and inflammation evolves over several hours and is the cause of early visceral pain that then localizes to the right lower quadrant. The obstruction is typically the result of a fecolith or adenitis.² These processes lead to necrosis and perforation of the appendix, which occur usually after at least 48 hours of symptoms. The bacteriology of appendicitis is a mixed enteral flora, including *Escherichia coli*, *Streptococcus viridans*, and *Bacteroides* species.

The clinical history of appendicitis typically includes a 24-hour to 48-hour progression of vague periumbilical pain that migrates and becomes more localized to the right lower quadrant. The tenderness is usually a localized peritonitis with additional manifestations of pain on coughing (Dunphy sign), pain with flexion and internal rotation of the right hip (obturator sign), pain with passive extension of the right hip (psoas sign), or pain in the right lower quadrant during palpation of the left lower quadrant (Rovsing sign). In addition, patients may have tenderness with rectal examination.

The typical laboratory findings include a mild to moderate leukocytosis with a left shift, a urinalysis showing a few white blood cells, and other laboratory findings of inflammation, such as elevated C-reactive protein. The differential diagnosis of right lower quadrant tenderness includes sigmoid diverticulitis (secondary to a redundant sigmoid that reaches across the midline), cecal diverticulitis, retroperitoneal or rectus sheath hematoma, viral enteritis, Crohn disease, perforating colonic carcinoma, and, in women, a number of gynecologic pathologies. A meta-analysis done by Andersen³

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