Gastrointestinal Causes of Abdominal Pain

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KEYWORDS

• Abdominal pain • Epigastric pain • RUQ pain • LUQ pain • RLQ pain • LLQ pain
• Nausea • Vomiting

KEY POINTS

- Gastrointestinal (GI) causes of abdominal pain are numerous.
- GI causes of abdominal pain can be divided into acute abdominal pain and chronic abdominal pain.
- Subcategorization by location of pain as it pertains to the abdomen can aid in understanding root causes.

INTRODUCTION

A complaint of abdominal pain remains among the most common symptoms that bring a patient to medical attention. The differential diagnosis varies greatly between acute abdominal pain and chronic abdominal pain. Significant overlap exists between GI and gynecologic causes of pain. This review outlines the most common of these disorders and includes some of the lesser common causes that, when missed, may result in poor patient outcomes.

ACUTE ABDOMINAL PAIN

Right Upper Quadrant

Acute cholecystitis

Definition: Acute inflammation of the gallbladder, usually as a result of obstruction of the cystic duct by a gallstone.

The obstruction of the cystic duct results in distension of the gallbladder, leading to visceral pain. The pain is typically described as a severe, steady ache, located predominantly in the right upper quadrant (RUQ) but can present with epigastrium. Radiation to the right subscapular area is common. Patients often report associated

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symptoms of nausea and vomiting. Most patients report having similar pain transiently in the past, especially after a meal high in fat.[1,2] This condition is known as biliary colic.

Providers should worry that their patient has developed acute cholecystitis when this pain has lasted greater than 4 to 6 hours and, especially, when associated with fever.

Symptoms
- RUQ pain
- Fever
- Nausea/vomiting (>50%)

Physical examination of the patient is useful, as diagnosis of acute cholecystitis is largely clinical and based on history. Findings of RUQ pain, fever, and leukocytosis strongly suggest acute cholecystitis. Jaundice, when present, suggests obstruction of the common bile duct either with a stone or from compression by the gallbladder (Mirizzi syndrome). A patient often has increased pain and inspiratory pause during palpation of the RUQ; this is known as Murphy sign. In 25% to 50% of patients, a large, distended gallbladder can also be palpated.[2]

Laboratory testing includes a complete blood count (CBC), assessment of liver chemistry (aspartate aminotransferase [AST], alanine aminotransferase [ALT], alkaline phosphatase, and total bilirubin), and determination of levels of amylase and lipase (both these to exclude coexistent pancreatitis). Mild elevations in the levels of serum bilirubin and alkaline phosphatase can be found in addition to an elevated white blood cell (WBC) count. Unlike cholangitis or common bile duct obstruction (choledocholithiasis), levels of AST and ALT are not commonly elevated.

Gallstones are demonstrated 90% to 95% on ultrasound (US) imaging in patients with acute cholecystitis; the additional findings of pericholecystic fluid, gallbladder wall thickening, and pain on compression of the gallbladder with the US probe (sonographic Murphy sign) are essentially diagnostic. A hepatobiliary iminodiacetic acid (HIDA) scan is rarely needed but can be used if the aforementioned workup is equivocal and there remains a high clinical suspicion or if acalculous cholecystitis is suspected. US imaging is preferred to computed tomographic (CT) scans, which more commonly miss the presence of gallstones. Further testing, including endoscopic US imaging, magnetic resonance cholangiopancreatography (MRCP), or endoscopic retrograde cholangiopancreatography (ERCP), are rarely necessary and reserved for when choledocholithiasis is suspected and not seen on other imaging procedures.[2,3]

Patients with acute cholecystitis should receive intravenous fluids, bowel rest, and symptomatic treatment of pain and nausea. When acute cholecystitis is confirmed, early surgical intervention (within 48–72 hours) remains the treatment of choice for patients with uncomplicated disease. Although debated in the past, early surgical intervention is preferred over delayed (after 6–8 weeks), as it decreases total length of hospitalization, morbidity, and mortality without increasing major risks of cholecystectomy.[4–6] If a patient's clinical condition does not allow surgical intervention, gallbladder drainage should be accomplished by endoscopic US-directed drainage, endoscopic placement of a drainage tube into the gallbladder via the cystic duct, or percutaneous drainage.

Broad-spectrum antibiotics are commonly given in acute cholecystitis. For suspected complicated cholecystitis, coverage with piperacillin/tazobactam, ampicillin/sulbactam, or a third-generation cephalosporin is used. Coverage of anaerobic organisms should be considered in sepsis and if gangrenous or emphysematous cholecystitis is suspected (along with urgent surgery or decompression).[2]

Complications of acute cholecystitis include emphysema, gangrene, perforation, fistulous formation (to duodenum, stomach, jejunum, colon, or abdominal wall), and gallstone ileus.