

Symptomatic Gallstones and Biliary Colic

Symptomatic cholelithiasis is defined by gallbladder pain in the presence of gallstones. *Biliary colic* refers to the constellation of symptoms experienced when the gallbladder contracts against outlet obstruction. Classically, biliary colic starts as a steady ache in the epigastrium or right upper quadrant; it has a sudden onset, reaches a plateau of intensity over a few minutes, and then subsides gradually over 30 minutes to several hours. Referred pain may be felt at the tip of the scapula or right shoulder. Nausea and vomiting may occur, but fever and a palpable mass (signs of acute cholecystitis) are not evident. Other symptoms, such as dyspepsia, fatty food intolerance, bloating and flatulence, heartburn, and belching, may occur in patients with gallstones; however, these symptoms are nonspecific and frequently occur in individuals with normal gallbladders.

Gallstones are best demonstrated by transabdominal ultrasonography, which has become the initial test to evaluate cholelithiasis. The sensitivity and specificity of ultrasound are greater than 90%, but accuracy drops to 20% for visualization of stones within the common bile duct. This limitation has been overcome by endoscopic ultrasonography (EUS) (Video 44-1) and magnetic resonance cholangiopancreatography (MRCP), both of which have an accuracy of 90% to 95% for detecting cholelithiasis and common bile duct stones. Oral cholecystography is no longer used for the routine evaluation of gallstones.

If gallbladder removal is indicated, laparoscopic cholecystectomy has replaced open cholecystectomy as the treatment of choice for recurrent biliary pain. Open cholecystectomy is typically reserved for selected high-risk patients (e.g., prior abdominal surgery with adhesions, obesity, cirrhosis). Laparoscopic cholecystectomy may be accompanied by intraoperative endoscopic retrograde cholangiopancreatography (ERCP) (see Fig. 44-1 and Chapter 34) or transoperative radiologic examination of the common bile duct if concomitant choledocholithiasis is suspected. Factors that may predict the presence of choledocholithiasis include jaundice, pancreatitis, abnormal liver test results, and bile duct dilation.

Cholecystectomy relieves biliary pain in virtually all patients with gallstone disease and prevents the development of future complications. Dissolution of cholesterol gallstones by orally administered chenodeoxycholic acid or ursodeoxycholic acid is successful in highly selected patients but is slow and costly and requires lifelong administration. Alternative methods to eliminate gallstones, including contact dissolution and fragmentation of stones, are used rarely.

Acute Cholecystitis

Acute cholecystitis refers to distention, edema, ischemia, inflammation, and secondary infection of the gallbladder. This typically results from obstruction of the cystic duct by gallstones or, less commonly, from gallbladder cancer or sludge. The clinical hallmark of acute cholecystitis is the acute onset of upper abdominal pain that lasts for several hours. The pain gradually increases in severity and typically localizes to the epigastrium or right hypochondrium with radiation to the right lumbar, scapular, and shoulder area. Nausea and vomiting, anorexia, and low-grade fever are common. Unlike biliary pain, the pain of acute

cholecystitis does not subside spontaneously. The findings on physical examination in patients with acute cholecystitis may include inspiratory arrest on palpation of the right upper quadrant (Murphy's sign), fever, and, less commonly, mild jaundice or a palpable gallbladder.

Complications of acute cholecystitis include emphysematous cholecystitis (in people with diabetes, older adults, and individuals who are immunosuppressed), empyema, gangrene, and perforation of the gallbladder. Gallbladder perforation may occur directly into the peritoneum ("free") or through a cholecystenteric fistula with gallstone migration and bowel obstruction (gallstone ileus). Mirizzi syndrome is the occurrence of profound jaundice resulting from extrinsic compression of the bile duct by an impacted stone in the cystic duct at the gallbladder neck.

The diagnostic approach for suspected acute cholecystitis is similar to that for biliary pain. A transabdominal ultrasound study that demonstrates gallstones, along with pericholecystic fluid, gallbladder wall thickening, and localized tenderness over the gallbladder (ultrasonographic Murphy's sign), provides strong supportive evidence for acute cholecystitis. Ultrasound is safe and widely available and has emerged as the initial test of choice. Radionuclide scanning after intravenous administration of technetium-99m-labeled diisopropyl iminodiacetic acid (DISIDA) or hepatobiliary iminodiacetic acid (HIDA) is also accurate. If the gallbladder fills with the isotope, acute cholecystitis is highly unlikely; if contrast material enters the bile duct and duodenum without gallbladder visualization, acute cholecystitis is strongly supported.

Because of the high risk for recurrent acute cholecystitis, most patients need to undergo cholecystectomy, which is often performed within the first 24 to 48 hours after presentation or, less often, 4 to 8 weeks after an acute episode (Fig. 44-3).

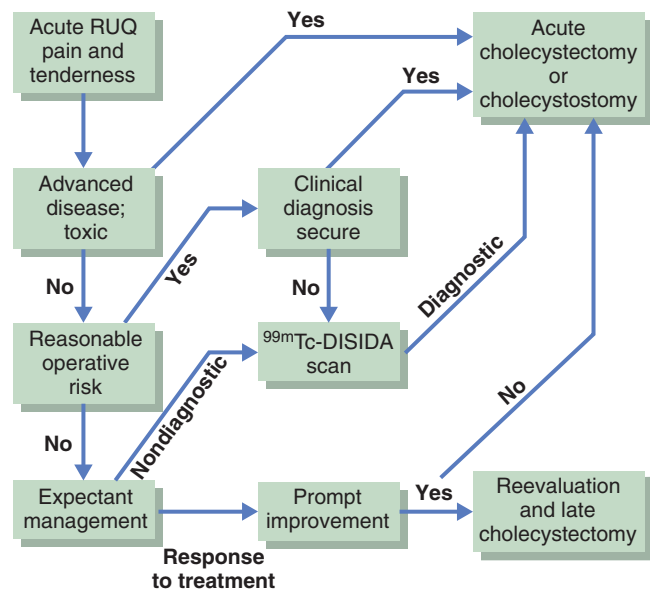


FIGURE 44-3 Algorithm for management of right upper quadrant (RUQ) pain and tenderness in patients with suspected acute cholecystitis. This scheme is based on a policy of early operation (conventional or laparoscopic) for appropriate patients and use of cholecystostomy (operative or percutaneous) for patients who are poor operative risks. ^{99m}Tc-DISIDA, Technetium-99m-labeled diisopropyl iminodiacetic acid.