DIAGNOSTIC ADVANTAGES	DIAGNOSTIC LIMITATIONS	CONTRAINDICATIONS	COMPLICATIONS	COMMENT
Ultrasound				
Rapid Simultaneous scanning of GB, liver, bile ducts, pancreas Accurate identification of dilated bile ducts Not limited by jaundice, pregnancy Guidance for fine-needle biopsy	Bowel gas Massive obesity Ascites Barium Partial bile duct obstruction Poor visualization of distal CBD	None	None	Initial procedure of choice in investigating possible biliary tract obstruction
Computed Tomography				
Simultaneous scanning of GB, liver, bile ducts, pancreas Accurate identification of dilated bile ducts, masses Not limited by jaundice, gas, obesity, ascites High-resolution image Guidance for fine-needle biopsy	Extreme cachexia Movement artifact Ileus Partial bile duct obstruction	Pregnancy	Reaction to iodinated contrast, if used	Indicated for evaluation of hepatic or pancreatic masses or for assessing for complications related to gallstones (pancreatitis) Procedure of choice in investigating possible biliary obstruction if diagnostic limitations limit US
Magnetic Resonance Cholangiopancreatography				
Noninvasive modality for visualizing pancreatic and biliary ducts Has excellent sensitivity for bile duct dilatation, biliary stricture, and intraductal abnormalities Can identify pancreatic duct dilatation or stricture, pancreatic duct stenosis, and pancreas divisum	Cannot offer therapeutic intervention High cost	Claustrophobia Certain metals (iron)	None	First choice to assess for choledocholithiasis given comparable sensitivity and specificity to ERCP
Endoscopic Retrograde Cholangiopancreatography				
Simultaneous pancreatography Best visualization of distal biliary tract Bile or pancreatic cytology Endoscopic sphincterotomy and stone removal Biliary manometry	Gastroduodenal obstruction Roux-en-Y biliary-enteric anastomosis	Pregnancy Acute pancreatitis Severe cardiopulmonary disease	Pancreatitis Cholangitis, sepsis Infected pancreatic pseudocyst Perforation (rare) Hypoxemia, aspiration	Cholangiogram of choice if there is believed to be a need for intervention: Diagnosed or high clinical probability of choledocholithiasis Biliary stricture requiring sampling and stenting Need for sphincterotomy such as Sphincter of Oddi dysfunction
Percutaneous Transhepatic Cholangiogram				
Best when bile ducts dilated Best visualization of proximal biliary tract May be used to obtain bile cytology/culture Allows for percutaneous transhepatic drainage	Nondilated or sclerosed ducts	Pregnancy Uncorrectable coagulopathy Massive ascites Hepatic abscess	Bleeding Hemobilia Bile peritonitis Bacteremia, sepsis	Indicated for the drainage of obstructed and infected ducts when ERCP is contraindicated or failed
Endoscopic Ultrasound				
Most sensitive method to detect ampullary stones and exclude pathology in the head of the pancreas				Excellent for detecting choledocholithiasis

Abbreviations: CBD, common bile duct; ERCP, endoscopic retrograde cholangiopancreatography; GB, gallbladder; US, hepatobiliary ultrasound.

The widespread use of laparoscopic cholecystectomy and ERCP has decreased the incidence of complicated biliary tract disease and the need for choledocholithotomy and T-tube drainage of the bile ducts. EBS followed by spontaneous passage or stone extraction is the treatment of choice in the management of patients with common duct stones, especially in elderly or poor-risk patients.