

Which to Choose: ERCP vs. Laparoscopic Cholecystectomy?

Maria Shepherd • Data Decision Group

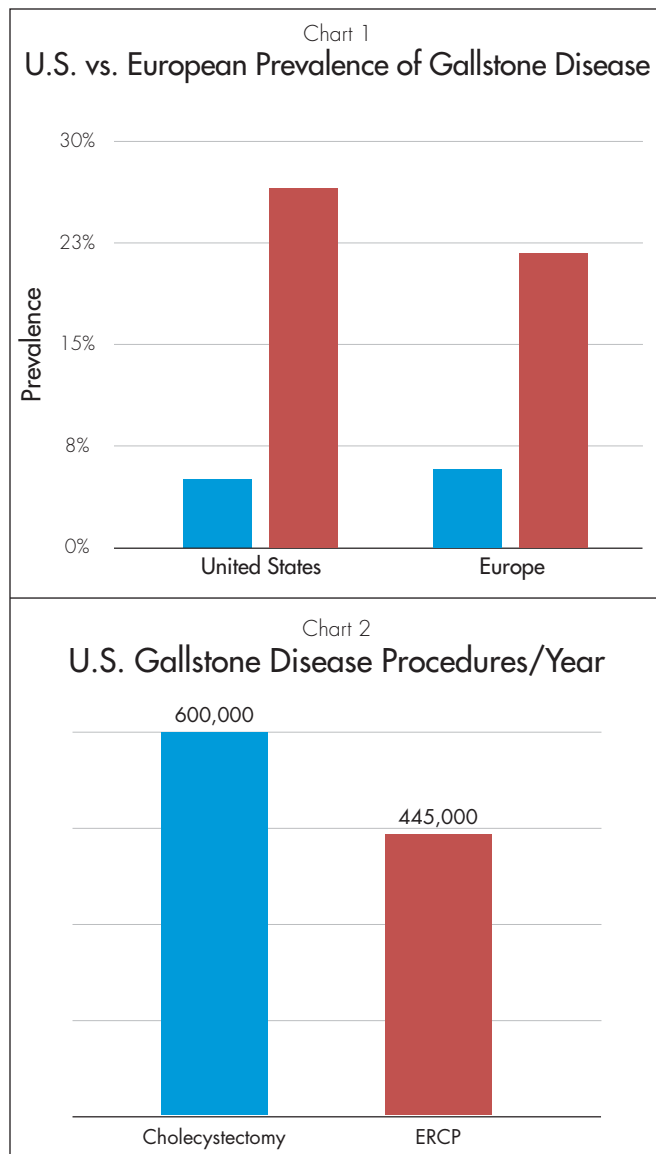
While not for good reasons, gastrointestinal (GI) endoscopes are in the news. As such, now is a good time to examine GI endoscopy vs. laparoscopic procedures for the treatment of common bile duct stones (BDS), also called lithiasis. In the United States, the prevalence of gall bladder disease is approximately 20.5 million (6.3 million men and 14.2 million women), and varies from 5.3 percent to 26.7 percent of the population, depending on gender and ethnicity.¹ Ethnic differences in gallbladder disease prevalence differ according to sex and were only partly explained by known risk factors.² In Europe, prevalence is reported to vary between 5.9 percent and 21.9 percent of the general population.³

Why It's Important

In a recent journal article, "Diagnosis and Management of Choledocholithiasis in the Golden Age of Imaging, Endoscopy and Laparoscopy," it was reported that 11 to 21 percent of patients with cholelithiasis have BDS at the time of surgery.^{4,5,6,7} Ideally, once in the common bile duct, BDS will flow to the duodenum. If the stones are larger than the diameter of the papilla, they may remain in the common bile duct. BDS are mostly asymptomatic, (as many as 50 percent of cases) but can obstruct bile flow, potentially causing jaundice, cholangitis or acute biliary pancreatitis.^{8,9} Cholelithiasis involves the presence of gallstones, which are concretions that form in the biliary tract, usually in the gallbladder. Choledocholithiasis refers to the presence of one or more gallstones in the common bile duct.

The diagnosis and treatment of BDS has changed dramatically over the last quarter century due to technology advances. In the 1990s, laparoscopic cholecystectomy (a procedure in which the gallbladder is removed by laparoscopic techniques) changed the treatment of gallstone diseases.^{10,11,12} Other techniques for BDS treatment were introduced, including lithotripsy, which uses ultrasonic shock waves to break up stones in the kidney, bladder, or ureter (the tube that carries urine from your kidneys to your bladder). As technologies advanced, medical societies developed more individualized treatments.¹³ Endoscopic retrograde cholangiopancreatography (ERCP) has changed options for the treatment of patients affected by BDS. ERCP is a technique that combines the use of endoscopy and fluoroscopy to diagnose and treat problems of the biliary or pancreatic ductal systems. Now, more than 600,000 cholecystectomy procedures per year are performed in the United States as compared to 445,000 ERCP procedures.^{14,15}

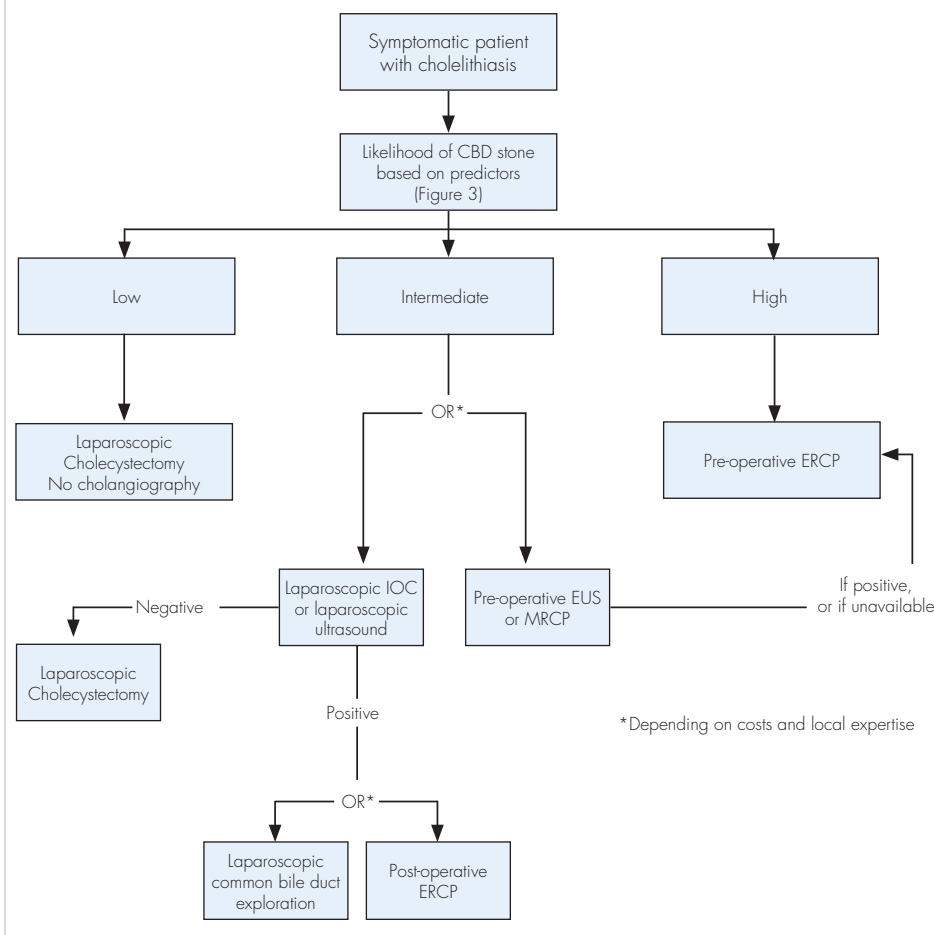
Symptoms, serology and ultrasound define the risk of carrying BDS to categorize low risk patients (sent directly to laparoscopic cholecystectomy). For patients diagnosed with intermediate to high risk of having BDS, there are two treatment pathways: the "laparoscopy-first" approach, and "endoscopy-first" attitude. Patients at high risk for BDS may be managed by ERCP, laparoscopic or open surgery.¹⁷



Technology Prevails

Open surgery is invasive, and BDS laparoscopic procedures are time consuming and technically demanding. The authors of "Diagnosis and Management of Choledocholithiasis in the Golden age of Imaging, Endoscopy and Laparoscopy" conclude that BDS management by ERCP often depends on the availability of instrumentation, personnel and skills.¹⁸ In addition, the authors indicate that while there is no consensus about therapeutic BDS management, accuracy, invasiveness, potential therapeutic use and costs of imaging techniques used to diagnose BDS are minimal and the therapeutic implications for ERCP are non-negligible for morbidity and mortality.¹⁹ ❖

Chart 3. ASGE Algorithm for the Management of Patients with Symptomatic Cholelithiasis Based on the Degree of Probability for Choledocholithiasis¹⁶



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Editor's note: Readers are invited to submit market data and trend questions to Maria Shepherd. Periodically, selected questions will be presented in this column, with answers from Maria.

Maria Shepherd has 20 years of leadership experience in medical device/life-science marketing in small startups and top-tier companies. Following a career including roles as vice president of marketing for Oridion Medical (acquired by Covidien), director of marketing for Philips Medical and senior management roles at Boston Scientific Corp., she founded Data Decision Group. Shepherd recently was appointed to the board of the ALIGO Healthcare Investment Committee. She can be reached at (617) 548-9892, mshpherd@dddecisiongroup.com, www.dddecisiongroup.com, or followed on Twitter @MedTechResearch.

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