Clinical Question
When is surgery indicated in patients with asymptomatic cholelithiasis?

Evidence-Based Answer
Surgery should not be offered to patients with asymptomatic cholelithiasis. (Strength of Recommendation [SOR]: C, based on decision analysis, observational studies, and expert opinion.) Cholecystectomy may be beneficial for patients who are at high risk of biliary cancer, infection, or other complications, including younger patients and those with choledocholithiasis, sickle cell disease, gallstones larger than 3 cm, or significant immunosuppression. (SOR: C, based on cohort studies, observational studies, and expert opinion.)

Evidence Summary
Most patients with gallstones (50% to 70%) have asymptomatic cholelithiasis, defined as the detection of gallstones without related symptoms or sequelae such as colic, cholecystitis, cholangitis, or pancreatitis.1 There are no randomized clinical trials of surgical treatment of asymptomatic cholelithiasis. Family physicians should balance the risks of surgery with those of expectant management, which are derived from observational studies.2

A prospective study followed 298 patients with asymptomatic or minimally symptomatic (occasional transient pain or nausea) cholelithiasis in a large health maintenance organization for 25 years.3 Patients developed symptoms at a rate of approximately 1% to 2% per year. Complications were rare (approximately 4% over 25 years) except when preceded by biliary colic. Complications typically include acute cholecystitis (0.3% per year), obstructive jaundice (0.2% per year), acute pancreatitis (0.04% to 1.5% per year), and gallstone ileus (rare).4 A study of 1,274 patients from Scandinavia with asymptomatic gallstones followed participants for 24 years and confirmed that monitoring without surgery is a reasonable option.5

Case reports and cohort studies show mortality rates from laparoscopic cholecystectomy of 0.14% to 0.5%, depending on patients’ age and fitness.6 Compared with emergent cholecystectomy, elective laparoscopic cholecystectomy has lower rates of complications and conversion to open cholecystectomy. Case series and cohort studies indicate that complications of laparoscopic cholecystectomy—although rare—include potentially severe bleeding (0.11% to 1.97%), abscess (0.14% to 0.3%), bile leak (0.3% to 0.9%), common bile duct injury (0.26% to 0.6%), and bowel injury (0.14% to 0.35%).67

A decision analysis using operative mortality rates and cost data from 12 studies was performed to compare prophylactic surgery with expectant management in patients with asymptomatic cholelithiasis.8 It predicted higher costs and increased mortality across all adult age groups and in both sexes with prophylactic surgery. For example, the prophylactic surgery strategy predicted a mortality rate of 540 per 100,000 men 50 years of age vs. 383 for expectant management. The cost of prophylactic surgery was four times that of watchful waiting. Sensitivity analyses indicated only minor differences in outcomes across a variety of probability assumptions, supporting these results. In other words, changing the underlying assumptions and probabilities in the predictive model did not substantially alter the outcome.
Patients who are at high risk of biliary cancer and other operative or disease-related complications may be offered prophylactic cholecystectomy if the benefits of surgery outweigh the risks of observation (Table 1).\(^1\),\(^5\),\(^9\) Patients with asymptomatic cholelithiasis have a much higher risk of severe complications (up to 50%) and should be offered prophylactic cholecystectomy.\(^1\) All patients should be counseled about the symptoms of biliary colic, because most severe gallstone-related complications are preceded by these symptoms.\(^1\)

**Recommendations from Others**

A 1992 consensus statement from the National Institutes of Health,\(^9\) updated by the Society of American Gastrointestinal and Endoscopic Surgeons in 2010,\(^10\) recommends that almost no asymptomatic patients undergo cholecystectomy. Those at high risk of gallbladder cancer, myocardial infarction, and other complications—especially patients with sickle cell disease or hereditary spherocytosis, children, and those receiving immunosuppressive therapy or undergoing transplant—may benefit from surgery.

**REFERENCES**


