Preoperative diagnosis of cholecystocolonic fistula on ERCP

John P Rice, Bret J Spier, Anurag Soni

Cholecystocolonic fistula (CCF) is usually an incidental finding found during surgical cholecystectomy. While diagnostic testing for CCF is often insensitive, its preoperative diagnosis would alter surgical management (partial colectomy and cholecystectomy versus cholecystectomy alone).

We describe a patient with cholecystitis, cholangitis and pneumobilia who had a CCF diagnosed by endoscopic retrograde cholangiopancreatography (ERCP).

Case report

A 70-year-old immune suppressed man, having recently completed treatment for recurrent large cell lymphoma, developed right-sided abdominal pain, profound diarrhoea and temperature to 103°F (39.5°C), but was otherwise stable haemodynamically. Total bilirubin was 1.6 mg/dL (reference range, 0.0–1.4 mg/dL) and alkaline phosphatase was 514 U/L (35–130 U/L). He was pancytopaenic with a platelet count of 23 K/uL (160–370 K/uL) and was receiving anticoagulation (INR 3.1) for atrial fibrillation and a deep vein thrombosis.

On admission, CT of the abdomen revealed air (white arrow) and stones (black arrowhead) within the gallbladder along with marked gallbladder wall thickening and possible common bile duct stone (black arrow) (Figure 1A). Pneumobilia was also identified (white arrow) (Figure 1B).

Figure 1A. Oral contrast abdominal CT revealing air (white arrow) and stones (black arrowhead) within the gallbladder along with marked gallbladder wall thickening and possible common bile duct stone (black arrow)
Given concern for biliary obstruction with associated cholangitis, an ERCP was performed on hospital day #1, revealing extravasation of contrast from the gallbladder into the colon, thus indicating the presence of a cholecystocolonic fistula (Figure 2). A biliary stent was placed.

By hospital day #3 his liver tests had normalised and fevers subsided. The patient subsequently underwent cholecystectomy and partial colectomy.

Figure 2. ERCP revealing extravasation of contrast from the gallbladder into the colon, a cholecystocolonic fistula
Discussion

Cholecystocolonic fistula (CCF) is the second most common cholecystoenteric fistula.\(^1-3\) In several large series of patients undergoing elective cholecystectomy, CCF is discovered in 0.06 to 0.14% of cases.\(^1-3\) The most common aetiology of CCF is acute cholecystitis, however it has also been described after gastric surgery, cholecystostomy tube placement, post-traumatic, gallbladder carcinoma and iatrogenic causes.\(^4\)

Many patients with CCF are asymptomatic and are only diagnosed during cholecystectomy. The classic symptomatic triad of diarrhoea, right upper quadrant abdominal pain, and cholangitis is uncommon. Diarrhoea is felt to be the most common complaint, occurring in 71 percent of cases.\(^5\) Pain and cholangitis occur less frequently. Other presentations include gallstone ileus/obstruction, liver abscess, and bleeding.\(^4\)

Preoperative diagnosis of CCF is difficult and is achieved in only about 7.9% of patients.\(^2\) A number of different imaging and endoscopic modalities have been described anecdotally including plain X-ray, CT scan, ultrasound, barium enema, colonoscopy, and ERCP.\(^4\) Currently, there is no gold standard, nor reliable method for the nonoperative diagnosis of CCF.

Treatment of CCF is almost always surgical. In uncomplicated cases of CCF, a laparoscopic approach may be feasible, but conversion to an open procedure is not uncommon.\(^6\) In addition, colostomy can generally be avoided. Patients with CCF complicated by bleeding or gallstone ileus often require a more “customised” and extensive surgery.\(^4\) Endoscopic therapy occasionally may be beneficial.\(^7,8\) In some cases of gallstone ileus, colonoscopy has been used to manually extract an impacted gallstone in the sigmoid colon.\(^7\)

In summary, cholecystocolonic fistula is a relatively uncommon complication of gallbladder disease and is most often found incidentally during cholecystectomy. CCF cannot be reliably diagnosed symptomatically, however most patients will complain of diarrhoea. Similarly, imaging and endoscopic procedures have low diagnostic sensitivity. The treatment for most cases of CCF is surgical and its presence may alter management.

Author information: John P Rice, Gastroenterology and Hepatology Fellow; Bret J Spier, Clinical Instructor; Anurag Soni, Clinical Assistant Professor; Section of Gastroenterology and Hepatology, University of Wisconsin School of Medicine and Public Health, Department of Medicine, Madison, Wisconsin, USA

Correspondence: Assistant Professor Anurag Soni, Gastroenterology and Hepatology, University of Wisconsin School of Medicine and Public Health, 600 Highland Ave, H6/516 CSC, Madison, WI 53792, USA. Email: asoni@medicine.wisc.edu

References:


