A 37-year-old woman was initially seen in the emergency department complaining of lower abdominal pain, nausea, and vomiting of 3 days' duration. She described previous episodes of right upper quadrant abdominal pain. On physical examination, she was febrile and tachycardic with lower abdominal tenderness, and her rectal examination results were Hemoccult negative. The laboratory evaluation was significant only for an elevated white blood cell count, and an abdominal radiograph revealed distended large-bowel loops. A computed tomographic scan revealed a large mass in the sigmoid colon (Figure 1).

What Is the Diagnosis?
A. Diverticulitis
B. Colon cancer
C. Cholecystocolonic fistula
D. Foreign body

From the Department of Surgery, Uniformed Services University of the Health Sciences, Bethesda, Md (Dr Mittendorf); and the Department of Surgery, Case Western Reserve University, Cleveland, Ohio (Drs Goel and Seaman).
Answer

Cholecystocolonic Fistula

Figure 1. Computed tomographic scan showing a hyperdense, rounded lesion with a hypodense center in the sigmoid colon.

Figure 2. Specimen photograph revealing a large gallstone identified in the sigmoid colon.

Cholecystoenteric fistula is a rare complication of biliary disease. The fistula usually results from inflammation associated with acute cholecystitis and occurs between the gallbladder and an adjacent hollow viscus. A second mechanism for fistulization is pressure necrosis from a large stone within the gallbladder lumen.1 The duodenum is the most commonly involved portion of the intestinal tract, accounting for approximately 75% of these communications.2 Once gallstones gain access to the small bowel, the majority are not large enough to cause an obstruction. Larger stones (>2.5 cm in diameter), however, can become impacted in the terminal ileum where there is a narrowing of the bowel lumen. The result is a gallstone ileus, which is accompanied by symptoms classic for a small-bowel obstruction.

Communication to the colon, most commonly the hepatic flexure, accounts for approximately 15% of cholecystoenteric fistulas.3 In these patients, larger stones may become impacted in the sigmoid colon, which is the narrowest portion of the large intestine. In such patients, symptoms develop more slowly, and abdominal distension and pain are the predominant features.1 Patients with a cholecystocolonic fistula may also develop choleic enteropathy, an infrequent complication marked by severe diarrhea.1

Like treatment of a gallstone ileus, treatment of a symptomatic cholecystocolonic fistula involves therapy of 2 distinct processes: the stone in the intestinal tract and the cholecystocolonic fistula, which may be associated with an acute phlegmon in the right upper quadrant. Frequently, as was the case with our patient, this pathologic feature is unknown at the time of operation. Our patient underwent a partial sigmoidectomy with creation of an end colostomy and Hartmann pouch, and the specimen contained a large gallstone (Figure 2). Inspection of the right upper quadrant at that time revealed significant inflammation; therefore, no further investigation of the gallbladder or suspected fistulous tract was undertaken.

The patient recovered uneventfully from the initial operation and across the next several months underwent an extensive workup attempting to delineate the fistula. Colonoscopy, barium enema, and hepatobiliary scintigraphy results were all negative. Spontaneous closure of a cholecystoenteric fistula occurs in many patients particularly when no distal obstruction is present, stones are no longer present in the gallbladder, and the acute inflammation has resolved.1

In general, the decision to remove the gallbladder electively at a later date is determined by the condition of the patient. Asymptomatic patients in whom no persistent cholecystoenteric fistula is demonstrated by contrast study do not require elective cholecystectomy. Persistence of biliary symptoms or failure of fistula closure suggest additional stones in the gallbladder; therefore, exploration with cholecystectomy, division of the fistula, and closure of the colon are indicated.

Our patient returned to the operating room approximately 4 months after her initial surgery, at which time her Hartmann pouch was reversed. Inspection of the right upper quadrant at that time revealed resolution of the inflammation; therefore, cholecystectomy was performed. The patient’s recovery was again uneventful.

Accepted for publication March 16, 2003.
Correspondence: Elizabeth A. Mittendorf, MD, Department of Surgery, Malcolm Grow Medical Center, 1050 W Perimeter Rd, Andrews Air Force Base, MD 20762 (elizabeth.mittendorf@mgmc.af.mil).

REFERENCES


Due to the overwhelmingly positive response to the “Image of the Month,” the Archives of Surgery has temporarily discontinued accepting submissions for this feature. It is anticipated that requests for submissions will resume in mid 2004. Thank you.