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Perforation of the gallbladder into the abdominal wall: A rare manifestation of biliary disease

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A 54-year-old man was admitted to our surgery department complaining of right upper quadrant abdominal pain. The working diagnosis of acute cholecystitis was based on the clinical picture, laboratory tests, and ultrasound findings. Because of the uncommon course of the disease, computed abdominal tomography was performed, showing multiple stones in the anterior abdominal wall. On surgery, the fistula, containing stones and pus connecting the gallbladder and the abdominal wall muscles, was found.

Case report

A 54-year-old man was admitted to our surgery department complaining of right-upper-quadrant (RUQ) abdominal pain. He also reported fatigue, fever, chills, and a 10-kg weight loss throughout the last two months. Other than for the current disease, he was healthy and was not taking any medication. On admission, his temperature was 37.6 Celsius. Abdominal fullness and tenderness were palpated in the RUQ without any further peritoneal irritation signs. The rest of his physical examination was unremarkable.

Laboratory exams demonstrated elevated white-blood-cell account (16,800) with left shift (84.5% neutrophils). Total bilirubin was 2,7, most of which was direct. Other liver function tests were only mildly elevated. Abdominal ultrasound revealed stones within the gallbladder. The gallbladder had thickened walls. The extrahepatic bile ducts were mildly dilated. Due to the uncommon history and the mass effect, a CT was ordered. This revealed a gallbladder with thickened walls and multiple gallbladder stones within the abdominal wall (Fig. 1).

Figure 1. Cholecystocutaneous fistula with multiple stones in the abdominal wall.

The patient was admitted to surgery. He was started on NPO, intravenous fluids, and broad-spectrum antibiotics. Under this treatment, the abdominal pain and tenderness resolved, and temperature and white-blood-cell counts normalized. An endoscopic ultrasound demonstrated a thickened gallbladder filled with stones, as well as thickness and irregularities in the tissue surrounding the gallbladder. The pancreas was enlarged, and there were several calcifications in its head, a picture corresponding to

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chronic pancreatitis. The common bile duct was dilated (10 millimeters).

Choledocholithiasis was not identified. An endoscopic retrograde cholangiopancreatography (ERCP) was ordered. This revealed dilated extrahepatic bile ducts. However, the intrahepatic ducts were not dilated. There was no evidence of choledocholithiasis. The gallbladder could not be demonstrated. The procedure was completed with papillotomy. The patient was scheduled for laparotomy. Surgery revealed the gallbladder to be severely inflamed. There was a fistula connecting the gallbladder and the abdominal wall muscles; it contained gallbladder stones and pus. A cholecystectomy was performed, and the fistula was excised. E. coli, enterococcus pneumonia, and enterobacter cloacae were grown on cultures taken from the fistula's contents. There was no evidence of malignancy. The patient was discharged home 8 days after surgery.

Discussion

Asymptomatic cholelithiasis is a common disease affecting 10-20% of the adult population (1). Only 1-2% of these people will suffer from acute cholecystitis (2). Gallbladder perforation is a dreaded complication of acute cholecystitis (3, 4). It is associated with increased morbidity and mortality. Risk factors for gallbladder perforation are old age, male gender, and cardiovascular comorbidity (5).

In 50% of the patients (6, 7), the perforation leads to an abscess that is contained within the subhepatic space. In most other cases, the gallbladder perforates into adjacent bowel such as the colon or duodenum, creating a fistula. In rare cases, the gallbladder perforates to the peritoneal cavity, resulting in generalized peritonitis.

The diagnosis of gallbladder perforation is very difficult. The similarities to acute cholecystitis in the complaints, symptoms, and imaging findings make surgery the method for most perforations to be discovered. Both CT and ultrasound can show gallbladder defects on the wall, which is considered a reliable sign for perforation. Other signs, such as free intraperitoneal fluid, pericholecystic fluids, and abscess, can mostly be found on a CT scan (8). That is why most preoperative diagnoses of gallbladder perforation are made by CT. The delay in the diagnosis caused by these difficulties is the main reason for the increase in morbidity and mortality.

This case demonstrates a very rare presentation of gallbladder perforation that created a fistula between the gallbladder and the abdominal wall muscles. The diagnosis was made on the CT scan, which presented a unique finding of gallbladder stones in the abdominal wall. We didn't find any late consequences of this rare biliary disease manifestation in the relevant medical literature. The clinical significance of such a fistula remains unknown.

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