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A rare encounter with cholecysto-colonic fistula: A comprehensive case study

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Abstract

Cholecysto-colonic fistula is a rare complication of calculous cholecystitis. It can also occur following previous surgeries, or in association with gallbladder carcinoma. Although the majority of patients remain asymptomatic, some may present with symptoms such as abdominal pain, vomiting, fever, jaundice, diarrhea, lower gastrointestinal bleeding, or sepsis. Diagnosis is challenging and typically requires a comprehensive diagnostic work-up or is incidentally made during surgery. This report presents a case involving an 84-year-old man with diabetes and hypertension, diagnosed with a spontaneous cholecysto-colonic fistula that mimicked acute cholecystitis. Diagnostic confirmation was achieved through imaging studies, including computed tomography and contrast-enhanced computed tomography. The patient underwent surgery which required conversion from a laparoscopic to an open approach due to extensive adhesions. The fistula was surgically removed, and the colonic defect was repaired. The patient's postoperative course was complicated by paralytic ileus and surgical site infection, but he recovered well and was discharged without further complications. Histopathological examination confirmed acute necrotizing cholecystitis. Cholecysto-colonic fistula remains a significant consideration in patients with recurrent cholecystitis and gastrointestinal symptoms. Early diagnosis and appropriate surgical intervention are crucial to prevent serious complications.

Keywords: cholecysto-enteric fistula, gallbladder, Mirrizzi syndrome, recurrent cholecystitis

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Informed Consent
The authors stated that the written consent was obtained from the patient presented with images in the study.

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Introduction

A cholecysto-enteric fistula is an uncommon complication of calculous cholecystitis, previous surgery, and gallbladder carcinoma [1]. Among all cholecysto-enteric fistulas, cholecysto-colonic fistula accounts for 8–26.5%, second only to cholecystoduodenal fistula, which makes up 75% [2]. Most patients show no symptoms and diagnosis is typically challenging. For symptomatic cases, surgical intervention is required [3]. Herein, we report a case of spontaneous cholecysto-colonic fistula, with clinical manifestations resembling acute cholecystitis.

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Case presentation

An 84-year-old gentleman, a known diabetic and hypertensive, with no history of cholelithiasis, presented with a 10-day history of right upper abdominal pain, multiple episodes of nonbilious vomiting, and fever. He was not jaundiced and was hemodynamically stable. His physical examination revealed a distended abdomen and marked tenderness in the right hypochondrium without peritonitis. Routine blood investigations were insignificant. Initial evaluation with a plain computed tomography of the abdomen showed features of acute cholecystitis and a suspicious cholecysto-colonic fistula with hepatic flexure. These findings were then confirmed with a contrast enhanced computed tomography of the abdomen (Figure 1).

During surgery, the initial laparoscopic approach had to be converted into a right subcostal laparotomy due to extensive adhesions involving the gallbladder, hepatic flexure, and the greater omentum. Pericholecystic omental adhesions were separated through blunt dissection. A fistulous tract, which established a connection between the fundus of the gallbladder and the hepatic flexure was observed, and divided via blunt dissection. A difficult retrograde cholecystectomy was carried out. The defect in the hepatic flexure was primarily sealed in two layers (Figure 2A, 2B) using 3-0 PDS, following the excision of the defect margins (Figure 3).

Postoperatively, he was administered five days of parenteral antibiotics, which covered both aerobic and anaerobic organisms. He subsequently developed paralytic ileus and a surgical site infection, both of which were managed appropriately. On the eighth day following surgery, he was discharged without experiencing any complications. His histopathological report indicated acute necrotizing cholecystitis. He displayed no symptoms at his postoperative review, which took place two weeks after the surgery.

Figure 1: Contrast enhanced computed tomography abdomen showing pneumogallbladder (arrow mark).

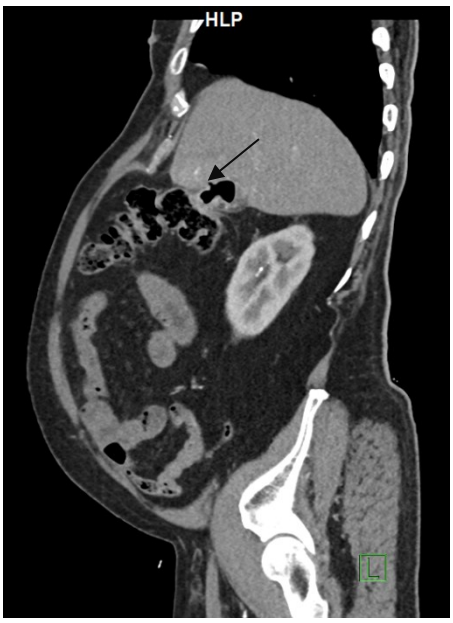


Figure 3: Excised fistula margin from the hepatic flexure.

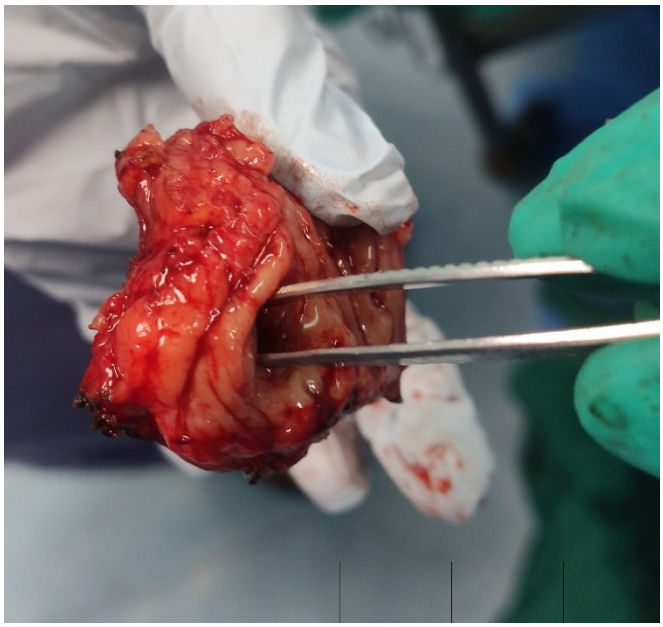
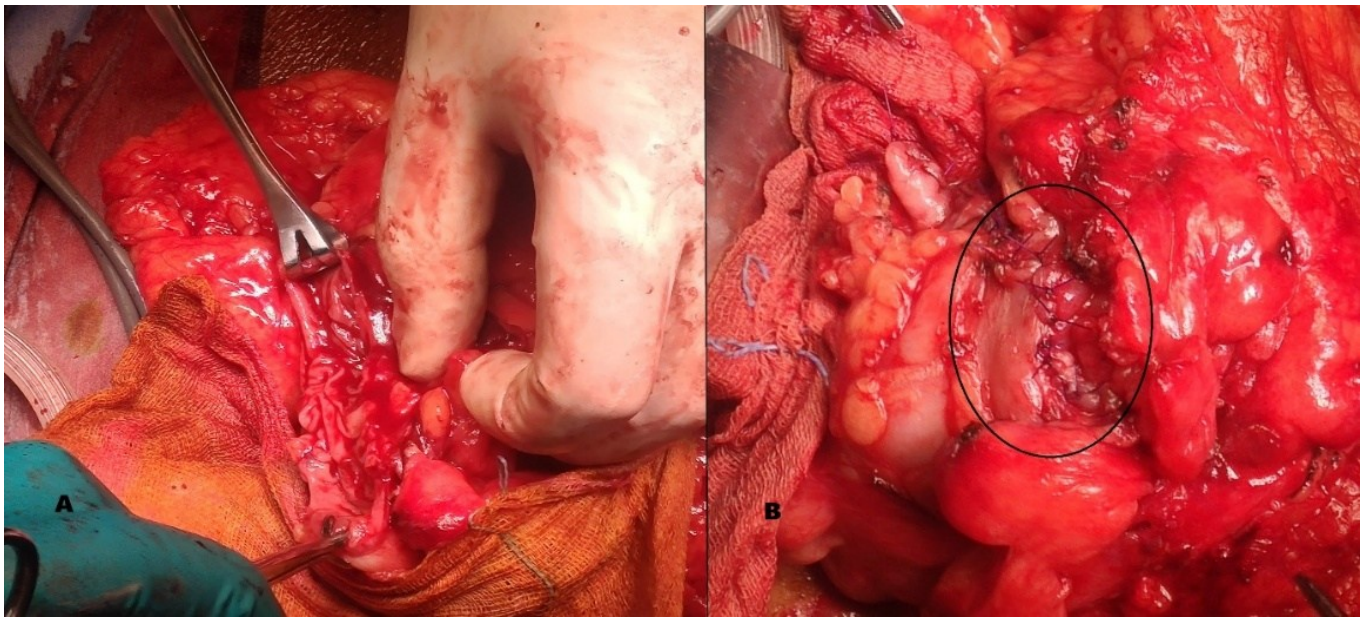


Figure 2: A: Defect in the hepatic flexure after excising fistula margin. B: Defect closed horizontally.



Discussion

Cholecysto-colonic fistula is an exceedingly rare outcome of calculous cholecystitis, with an incidence of 0.13% [4]. It is believed that the compression of the gallbladder wall by large gallstones, coupled with regular bouts of cholecystitis, can lead to dense adhesions. These, in turn, can result in erosion between the gallbladder and the adjacent viscus, thereby forming a fistula [5].

The preoperative diagnosis of cholecysto-colonic fistula is also difficult. Huang et al. [5] reported a preoperative diagnostic accuracy of 58.6%. Computed tomography is considered more accurate than ultrasonogram, while magnetic resonance cholangio-pancreatography is particularly beneficial if associated with choledocholithiasis or Mirrizzi syndrome. The following circumstances should raise suspicions of a cholecysto-colonic fistula presence: Repeated attacks of cholecystitis and suspicious imaging findings (thick-walled gallbladder, ill-defined border between gallbladder & bowel loops, pneumobilia, pneumogallbladder).

The surgical treatment usually involves cholecystectomy, followed by fistula closure and, occasionally, bowel resection. The surgery can be conducted using both laparoscopic and open methods. However, laparoscopic approaches are generally challenging due to dense adhesions and inflammation around the gallbladder. Therefore, a conventional open cholecystectomy with fistula excision often serves as the best option in challenging cases. Moreover, it is essential to include the fistulous part of the colonic wall in the resected specimen to rule out colonic carcinoma at the fistula site.

Therefore, patients diagnosed with cholecystitis, along with non-specific gastrointestinal symptoms such as diarrhea and lower gastrointestinal bleeding, should be suspected of having a cholecysto-enteric fistula, necessitating a thorough work-up.

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