

## Cholecystoenteric fistula

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**Section:** Abdominal imaging

**Area of Interest:** Abdomen

**Imaging Technique:** CT

**Imaging Technique:** Nuclear medicine conventional

Case Type: Clinical Cases

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**Patient:** 65 years, male

### Clinical History:

A 65-year-old patient presented with right-sided upper abdominal pain, nausea, loss of appetite and weight for several months. He was admitted for further investigation and evaluation.

### Imaging Findings:

CT abdomen: Portal venous phase showed an inflammation, ill-defined fluid collections adjacent to the gallbladder (GB) and anterior to the liver. Air in the gallbladder fossa and in the duodenum raised the suspicion for a cholecystoduodenal fistula.

ERCP: Difficulty in cannulation of the common bile duct, pancreatic duct stent placed.

Post ERCP CT: Inflamed GB with air in the GB fossa with severe pericholecystic inflammatory changes.

Percutaneous transhepatic cholangiogram (PTC): Confirmed a communication between the gallbladder and the duodenum.

### Discussion:

#### Background

Cholecystoenteric fistula is an uncommon complication of gallbladder disease, occurring in 0.06% - 0.14% of patients with biliary disorders [1]. The most common type of cholecystoenteric fistula is the cholecystoduodenal fistula followed by cholecystocolonic fistula [2]. These fistulas are believed to occur as a result of inflammation in the gallbladder, particularly due to chronic cholecystitis [3]. However, they can also occur as a consequence of cancer, trauma, peptic ulcers and diverticulitis [4].

#### Clinical Perspective

The patients usually present with a vague abdominal pain, diarrhoea, jaundice, weight loss, nausea and vomiting [2] as was seen in our patient which prompted investigations.

### Imaging Perspective

None of the imaging modalities have proven to be highly sensitive for the detection of cholecystoenteric fistula [2]. However, the initial diagnostic evaluation is done with abdominal ultrasound or CT scan as for any abdominal pain. Endoscopic retrograde cholangiopancreatography (ERCP) is performed if a cholecystoenteric fistula is suspected. Percutaneous transhepatic cholangiography (PTC) is typically reserved for the patients who are not candidates for ERCP or those who fail ERCP.

### Outcome

The cholecystoenteric fistula is treated with fistulectomy, cholecystectomy and if necessary common bile duct exploration [1]. Our patient underwent a satisfactory PTC placement of a cholecystostomy drain and 8 weeks later underwent cholecystectomy which confirmed chronic cholecystitis and perforation without any evidence of cancer.

### Take Home Message

The cholecystoenteric fistula is a rare entity. The physicians should always have a high index of suspicion as severe cases may result in complications like perforation of the colon, and faecal peritonitis progressing to sepsis and death.

Written informed patient consent for publication was obtained.

**Differential Diagnosis List:** Cholecystoenteric fistula, Chronic cholecystitis, Gangrenous cholecystitis, Cholangiocarcinoma

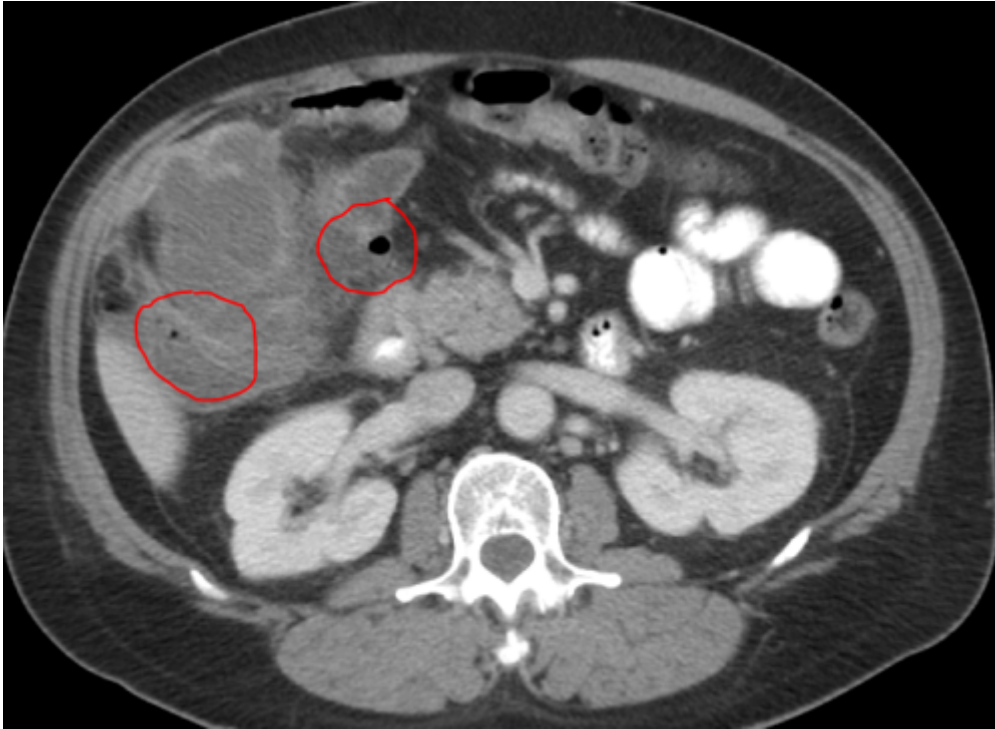
**Final Diagnosis:** Cholecystoenteric fistula

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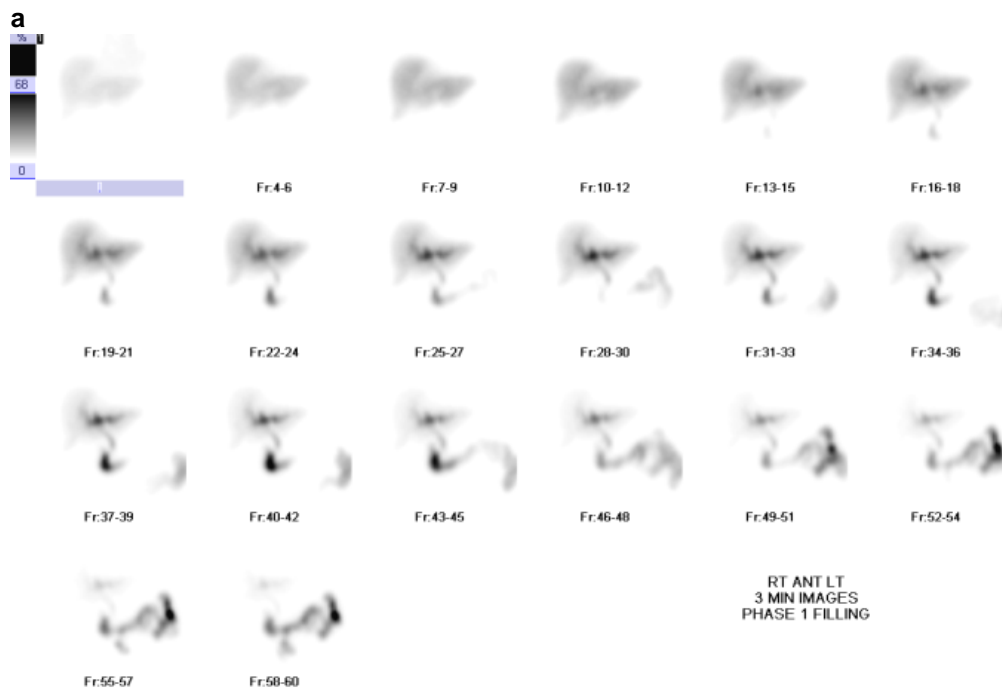
**Figure 1**

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**Description:** CT in portal venous phase showed an inflammation, ill-defined fluid collections adjacent to the GB and anterior to the liver with inflammatory changes in the ascending colon, hepatic flexure and duodenum. The presence of air in the GB fossa and in the duodenum raised suspicion for cholecystoenteric fistula. **Origin:** © Department of Radiology, US Department of Veteran Affairs, Augusta, Georgia 2019.

Figure 2



**Description:** Hepatobiliary scan showed no uptake of radioactive tracer into the GB suggesting cystic duct obstruction. The tracer is flowing normally into the duodenum without a biliary leak. **Origin:** © Department of Radiology, US Department of Veteran Affairs, Augusta, Georgia 2019.

**Figure 3**

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**Description:** Post ERCP-CT scan showed an inflamed GB, the presence of air in the GB fossa with severe pericholecystic inflammatory changes. Differential diagnosis include gangrenous cholecystitis with cholecystoenteric fistula. This was confirmed on PTC performed subsequently. **Origin:** © Department of Radiology, US Department of Veteran Affairs, Augusta, Georgia 2019.

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