

# Spontaneous Cholecystocutaneous Fistula Presenting with an Abscess Containing Multiple Gallstones: A Case Report

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## Abstract

Spontaneous cholecystocutaneous fistula is a rare complication of chronic calculous cholecystitis. This complication, a result of the natural history of gallbladder stones, was formerly common. Today it is rare, because of early diagnosis and treatment of biliary tract diseases. We report a case of spontaneous cholecystocutaneous fistula in a 70-year-old female patient who presented with an abscess formation in the right upper quadrant. After the incision of this infective focus, many gallstones were picked up. One-stage open cholecystectomy and excision of the fistula tract were carried out after control of the abdominal wall infection.

**Key Words:** Cholecystocutaneous fistula, cholelithiasis, biliary fistula.

## Case Report

A 70-YEAR-OLD WOMAN was admitted to our hospital with complaints of erythematous swelling and pain of the right upper quadrant for eight weeks. She had a history of abdominal tuberculosis 40 years earlier and had had gallstones for 8 years. At physical examination, no pathology was determined except for an 8x4 cm erythematous swelling and tenderness of the right upper quadrant. The ultrasonography and computed tomography (CT) identified a gallbladder full of small stones adhering to the abdominal wall. An abscess formation including calculi and phlegmon was detected in the abdominal wall. The CT showed subcutaneous edema of the abdominal wall radiating to the right iliac fossa, but the physical examination showed no related findings.

A small incision was performed to the fluctuating area of the abscess. At first, 2–3 cc purulent material and several small gallstones drained from the incision (Fig. 1). No evidence of tuberculosis or malignancy was detected in the microbiologic



**Fig. 1.** Draining small gallstones after incision of the abscess on right upper quadrant.

and histopathologic examination of this focus. Initial treatment included local control of septic focus and broad-spectrum antibiotics administration. The inflammation subsided within 12 days, and 80 small gallstones were removed from the fistulous tract. Laparotomy was performed on the 12th day, using a right subcostal incision far from the fistula tract. At laparotomy, the fistula formation between the abdominal wall and the fundus of the gallbladder was also exposed (Fig. 2). Cholecystectomy and excision of the fistula tract were performed. The total number of stones reached 549 after

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**Fig. 2.** At laparotomy, the fistula formation between the abdominal wall and fundus of gallbladder.

adding the stones remaining in the gallbladder. Postoperative recovery of the patient was uneventful.

### Discussion

Spontaneous cholecystocutaneous fistula was a common complication of chronic calculous cholecystitis until the beginning of the twentieth century. Thilesus was the first to report a case of external biliary fistula in 1670 (1). Courvoisier described 169 cases in 1890. In 1949, Henry and Orr collected a total of 205 cases of external biliary fistula, adding 36 new cases to Courvoisier's report. In the past 54 years, 21 additional cases were reported in the literature (1–8).

Spontaneous perforation of the calculous cholecystitis to the abdominal viscera (internal fistula) is a not uncommon complication. While the common sites are the duodenum (77%) and colon (15%), perforation is rarely seen in the bronchial tree, stomach or urinary tract (3). Cutaneous external fistula is a rare presentation of patients with cholelithiasis. A case of spontaneous cholecystocutaneous fistula due to acalculous cholecystitis was reported by Chang et al. (5). Another case which was uncomplicated by gallstones was reported by Birch. It was suggested that the associated circumstances or conditions, such as steroids, polyarteritis nodosa, typhoid, bacterial dissemination and

trauma, may be predisposing factors (8). Urban et al. reported a case of spontaneous cholecystocolonic and cholecystocutaneous fistula in association with stones and gliomatosis of the gallbladder (3). Internal and external fistula formation are a result of chronic perforation of the gallbladder. However, obstruction of the cystic duct, with (frequently) a calculus or (uncommonly) a carcinoma plays an important role in the pathophysiology of perforation. The adherence to the abdominal wall and necrosis of the gallbladder wall lead to fistula (2, 3). We considered that a history of abdominal tuberculosis diagnosed 40 years ago might have been the initial factor for the cholecystocutaneous fistula formation in our patient, but there was no evidence of tuberculosis in preoperative investigations.

The clinical presentation of cutaneous biliary fistula is variable and depends on its anatomical course. The external fistulas more frequently drain to the right superior quadrant and right flank or to the umbilicus. The opening of the fistula tract in the left-side costal margin, right-side iliac fossa, right groin and right gluteal region have also been reported (3). A painless draining sinus tract is the most common finding in these patients. Most of the patients are older than 50 years old, are women, and have a history of chronic biliary tract disease symptoms. The erythematous skin lesion in the right upper quadrant may be a patient's only presentation. However, skin lesions may lead to misdiagnosis (e.g., as a simple cellulites) or late diagnosis (5). In our patients, a soft tissue swelling and abscess formation in the right upper quadrant of the abdomen had been undiagnosed for eight weeks.

Ultrasonography and CT can be used for diagnosis of biliary tract pathologies and associated skin lesions. In the presence of a fistula opening, a fistulogram is necessary for the confirmation of communication with gallbladder or biliary tract. However, we did not need to perform a fistulogram on our patient, because the ultrasonography revealed gallbladder adherence to the abdominal wall and a tract between the gallbladder and right upper quadrant full of microcalculi. We also observed that the characteristic biliary calculi drained after incision of the abscess (Fig. 1). Eighty calculi were picked up during the treatment of this septic focus. The total number of biliary calculi in our patient was 549.

These fistulas are like a cholecystostomy. In high-risk patients, percutaneous removal of the stones and spontaneous closing of the fistula can be considered (9). Laparoscopic cholecystectomy was suggested as a feasible procedure by Mathonet et al., but it has a high conversion rate (6).

After the control of acute inflammation in the abdominal wall, an elective open cholecystectomy with the excision of the fistulous tract appears to be the standard approach for efficient treatment today. If there is an unusual skin lesion in patients, especially older women with a long-standing history of calculous cholecystitis, external fistula formation must be considered as a possibility.

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