CHOLECYSTOCUTANEOUS FISTULA: A RARE COMPLICATION OF GALLBLADDER DISEASE - A CASE REPORT

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ABSTRACT

Spontaneous cholecystocutaneous abscess or fistula is an exceptionally rare consequence of gallbladder disease, with fewer than 100 cases reported in the literature. The condition was first described by Thelisus in 1670, and later, Courvoisier documented 169 occurrences of biliary fistulas in the 19th century[1]. Biliary fistulas, which can be internal or external, often arise as a complication of acute calculus cholecystitis.[2] From suppurative cholecystitis with spontaneous rupture to surgical external drainage of an abscess, the disease's natural course has changed due to medical and surgical interventions have significantly altered its course[3]. The primary underlying mechanism involves obstruction of bile outflow due to gallstones, which increases intra gallbladder pressure, disrupts lymphatic drainage, and compromises gallbladder wall circulation. These pathophysiological changes contribute to necrosis and subsequent fistula formation. If perforation occurs, bile leakage may lead to a localized peritoneal abscess or extend externally through the abdominal wall[4] .Early and effective management of biliary tract disease is critical to preventing this uncommon but severe complication.

Key Words: Cholecystocutaneous fistula, Gallbladder disease, Cholecystitis, Surgery

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Spontaneous Cholecystocutaneous fistula (CCF) is a rare entity with less than 100 cases described in literature.[1,2] It is a complication of acute cholecystitis in which there is an abnormal communication between the gallbladder and the skin, leading to the drainage of gallbladder contents onto the skin surface. Cholecystocutaneous fistula usually results from untreated calculus cholecystitis, though it can also happen in conjunction with gallbladder cancer or calculus cholecystitis. It is rarely seen now days because of better diagnostic facilities and early surgical intervention.[3]

While cholecystitis and gallstones are common causes of gallbladder pathology, the formation of a fistulous tract to the skin is an unusual complication.[4] Many patients with this illness may not have a significant history of gallbladder disease and present with nonspecific symptoms. If treatment is not received, the condition worsens, and the inflamed gallbladder wall necrotizes. Bile starts to seep into the surrounding tissues as the wall totally collapses. The abdominal wall is one possible location for this leakage, which may eventually spread through the skin to form a cholecystocutaneous fistula here; we describe a case of CCF and discuss its diagnosis and management.

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Case Presentation:

A 66-year-old male presented to the outpatient clinic with a three-month history of intermittent right upper quadrant pain and purulent discharge from a sinus tract near the right costal margin. He reported a prior diagnosis of cholecystitis but had not sought medical attention until the development of skin changes.

Physical examination revealed tenderness over the right upper quadrant with a small, erythematous opening near the costal margin, from which purulent material was draining. Laboratory investigations showed marked leukocytosis with normal liver enzymes. Abdominal ultrasound demonstrated a multiseptated debrinous collection measuring 86*113*95mm having volume of about 486cc in noted in subcutaneous tissue of right side of upper abdomen.

Abdominal CT was performed that showed thick walled peripherally enhancing lobulated collection measuring 89 x 107 x 110mm extending from right hypochondrium to lower pole of right kidney ,radio dense gall stones noted . Based on clinical and radiological findings, a diagnosis of cholecystocutaneous fistula was established

The patient was started on antibiotics and scheduled for diagnostic laparoscopy and proceed. Intraoperative findings included extensive adhesions of gallbladder, with overlying abdominal wall with evidence of chronic inflammation and a fistulous tract extending from the gallbladder to the skin. Laparoscopic Cholecystectomy was performed, and the fistulous tract was excised.

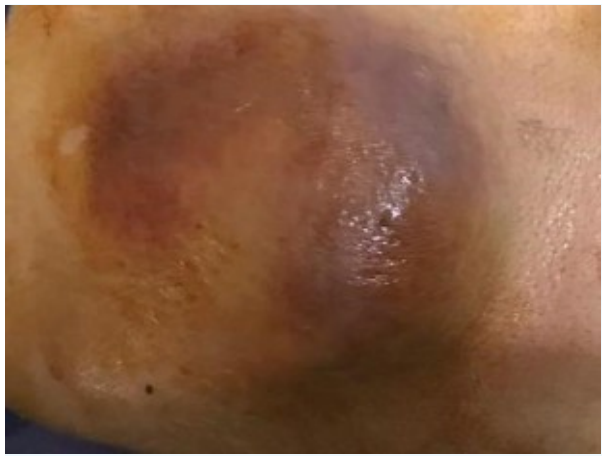


Figure-1: *Clinical Presentation of Cholecystocutaneous Fistula.*

Purulent discharge observed at the sinus opening near the right subcostal margin, corresponding to the external drainage site of the cholecystocutaneous fistula. The surrounding skin appears erythematous and inflamed, consistent with chronic low-grade infection.

Figure-2: *CT Findings*

CT showing a multiseptated, debrinous hypoechoic collection in the right subcutaneous plane, measuring 86 x 113 x 95 mm (volume ~486 cc), indicative of a chronic abscess secondary to gallbladder perforation.

Figure-3: *CT Scan Axial View*

Contrast-enhanced CT scan (axial section) demonstrating a peripherally enhancing, thick-walled lobulated collection extending from the right hypochondrium .High-attenuation gallstones are visible, confirming chronic calculous cholecystitis with fistula formation.

Figure-4: *CT Scan Coronal View*

Coronal reconstruction highlighting the extent of the abscess cavity tracking anteriorly through the abdominal wall musculature, terminating subcutaneously. This confirms the diagnosis of a cholecystocutaneous fistula communicating with the skin surface.

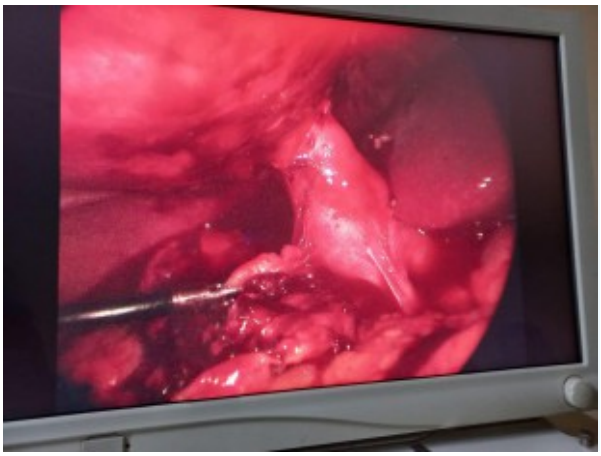
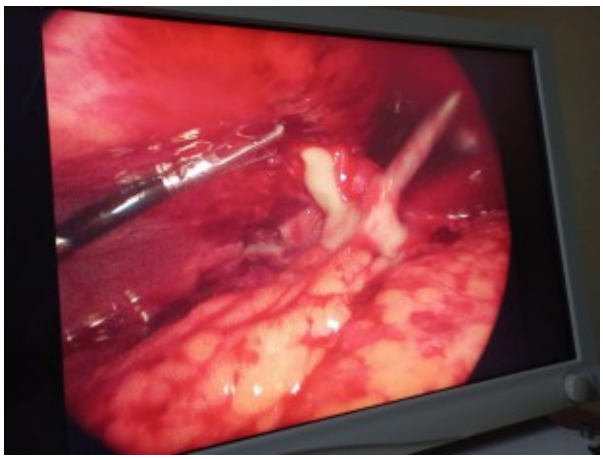


Figure-5: *Intraoperative Findings*

Laparoscopic view showing dense adhesions between the gallbladder and anterior abdominal wall. The fistulous tract is visualized extending from the inflamed gallbladder dome to the subcutaneous tissue.



Discussion

Cholecystocutaneous fistula is a rare complication of gallbladder disease in which there is abnormal communication between gall bladder and adjacent skin. The incidence of CCF is rare, most patients are elderly females, with the mean age of 72.8 years old. Most studies show that cases present late because of either delay in diagnosis or who had underwent subtotal Cholecystectomy due to difficult gall bladder surgery.[5] Cholecystocutaneous fistula is thought to develop due to increased pressure in the gallbladder following calculus cholecystitis, ultimately leading to fistula formation. While most cases of CCF are associated with bacterial infections in the gallbladder, some instances arise from gallbladder adenocarcinoma. Additionally, retained stones after laparoscopic Cholecystectomy and traumatic rupture of the gallbladder are recognized as predisposing factors for this condition.[6,7] Usual presentation is visible swelling with either pus or bilious discharge from skin with a preceding history of pain right hypochondrium.[8] However our patient was a 66 years old male with 3 months old history of intermittent right upper quadrant pain and purulent discharge from a sinus tract near the right costal margin. He reported a prior diagnosis of cholecystitis but had not sought medical attention until the development of skin changes.

Common diagnostic modalities used for diagnosis are ultrasound abdomen, CT scan, fitulogram and MRI. Ultrasound is a good initial test to detect stones, gall bladder distension, increased wall thickness and can guide about the presence of pericholecystic collection. But it has limitation in diagnosing fistula. In a few cases, Ultrasound was able to demonstrate the track of CCF.[9] CT confirmed the diagnosis by identifying the track between the gallbladder and the skin in several cases. Furthermore, CT fitulogram can also show the track of CCF which confirm the diagnosis.[10,11] We performed initial ultrasound that demonstrated a multiseptated debrinous collection measuring 86*113*95mm having volume of about 486cc in noted in subcutaneous tissue of right side of upper abdomen. CT scan was performed that confirmed the diagnosis of pericholecystic collection passing through the abdominal wall muscles into the skin of right sub costal region. Diagnosis is usually confirmed through a combination of clinical evaluation, imaging studies, and sometimes, intraoperative findings as was in our case.

Treatment of cholecystocutaneous fistula depends upon presentation. Sometimes it is managed conservatively by percutaneous drainage, giving intravenous antibiotics according to culture and sensitivity and definitive surgery is planned later after control of sepsis.[12] Open Cholecystectomy with excision of the fistulous tract is considered the standard management option and is curative in most cases. However, laparoscopic Cholecystectomy with excision of the tract is an acceptable and preferable option for experienced laparoscopic surgeons [13].Our case presented with large abscess and history of documented gall bladder stone disease, so laparoscopic exploration was performed. Patient responded well to treatment and post operative complications were noted.

Conclusion

Cholecystocutaneous fistula is a rare but important complication of gallbladder disease that requires prompt diagnosis and appropriate management. Surgical intervention, including laparoscopic Cholecystectomy with fistula excision and leaving the wound open for secondary healing is an acceptable modality. Close follow-up is essential to monitor for complications and ensure optimal outcomes.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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Authour's Contribution

Mohsin Gillani: Conceptualization of study design, Literature search

Ghazia Qasmi: Data collection and Interpretation

Imran Abbas: Manuscript drafting

Rida Fatima: Manuscript review

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