

Cholecystocolic Fistula in a 52-Year-Old Male with Biliary Pancreatitis and Complex Surgical Management: Case Report

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ABSTRACT

Introduction: This report presents a case of a cholecystocolic fistula in a 52-years-old male with chronic cholecystitis.

Objective: This case report aimed to identify rare complications of chronic cholecystitis and its effective management.

Methods: The patient underwent elective laparoscopic cholecystectomy, which was converted to open surgery due to extensive adhesions and a cholecystocolic fistula.

Results: A cholecystocolic fistula and an impacted gallstone were identified, and the colon was repaired surgically.

Conclusion: This case highlighted the importance of identifying rare complications like cholecystocolic fistulas in chronic cholecystitis for effective management.

Keywords: Cholecystocolic Fistula, Biliary Pancreatitis, Complex Surgical Management.

INTRODUCTION

Cholecystocolic fistula is a condition that occurs when there is a connection between the gallbladder and the colon due to long term inflammation known as chronic cholecystitis and subsequent erosion of the surrounding tissues by gallstones getting stuck in place ⁽¹⁾. Due to its rarity diagnosing fistula before surgery can be quite tricky because it doesn't happen often ⁽²⁾. It is usually diagnosed by presence of pneumobilia in the plain x-ray when it is full established but can be picked before it is fully formed through the colon ⁽³⁾.

Surgery is usually needed for treatment when dealing with fistulas ⁽⁴⁾. However, how complicated the procedure gets depends on each individual's anatomy and the level of tissue adhesion present ⁽⁵⁾. This report details the patient's journey including surgery findings and treatment before the full formation of the fistula.

CLINICAL PRESENTATION

A 52-years-old male with no significant past medical history presented with recurrent episodes of biliary pain following an endoscopic retrograde cholangiopancreatography (ERCP) performed for biliary pancreatitis. The pain was characterized as mild to moderate, radiating to the right shoulder and scapula, and was accompanied by nausea without vomiting. The patient remained afebrile throughout his presentations. Due to multiple episodes of pain exacerbated by fatty meals, an elective laparoscopic cholecystectomy was scheduled as a day-case procedure on May 19, 2024.

SURGICAL FINDINGS

During laparoscopy, significant adhesions were observed between the stomach, transverse colon and gallbladder complicating the dissection process ⁽⁶⁾. Multiple attempts using blunt and hydrostatic techniques were unsuccessful in isolating the gallbladder due to these dense adhesions. Consequently, the procedure was converted to an open cholecystectomy via a Kocher incision.

Intraoperatively, a cholecystocolic fistula was identified, involving the fundus of the gallbladder and

the seromuscular layer of the proximal transverse colon ⁽⁷⁾. An impacted gallstone measuring 2 cm x 1 cm was noted within the fistula (Figure 1).

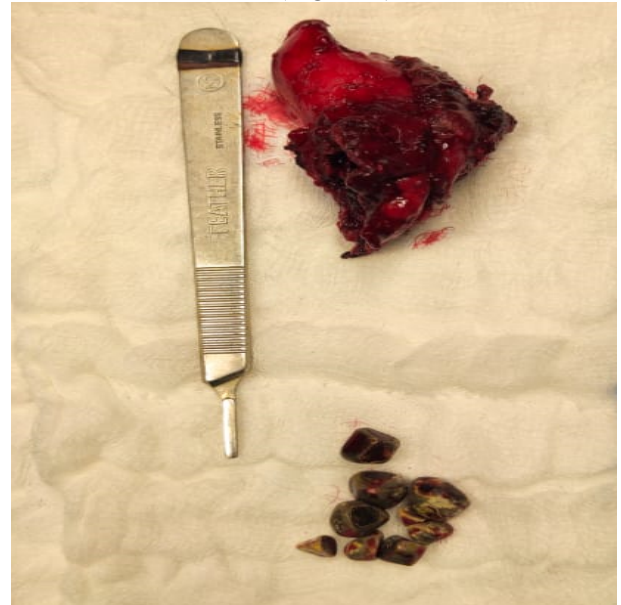


Figure (1): Gall stone.

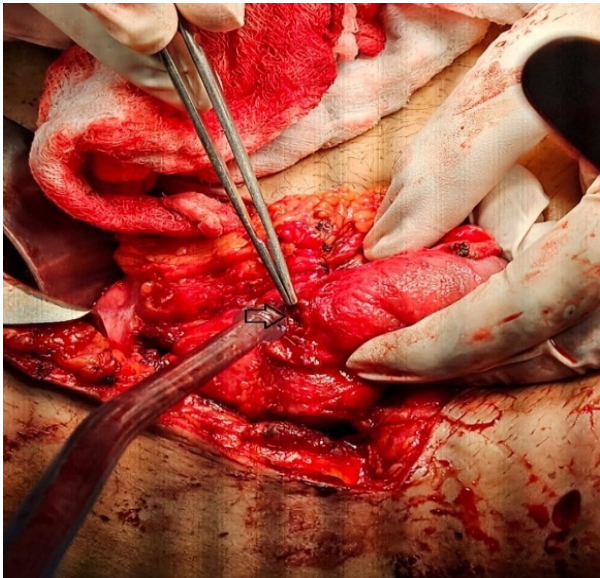


Figure (2): Dissection of the gall bladder.

Additional findings included:

- Gallbladder wall thickness of 1 cm.
- Narrow lumen of the gallbladder.
- Obstructing stone at the gallbladder neck measuring 1.5 cm x 1 cm.
- Dense adhesion between gallbladder and the transverse colon.

After careful dissection, we realized that there was a well-established fistula between both organs. After detaching both organs from each other, we observed that the fistula of the gallbladder had eroded through the wall of the colon deep to the level of the submucosa, sparing only the mucosa (Figure 2) with a 5 mm diameter. It was evident that it was only a matter of time until the fistula would break through the mucosa to become fully established ⁽¹⁾.

The transverse colon was meticulously repaired with four stitches of PDS 3.0. A retrograde dissection technique was employed to complete the cholecystectomy. A subhepatic drain was placed to monitor postoperative fluid output ⁽⁴⁾.

POSTOPERATIVE COURSE

Postoperatively, the patient tolerated oral intake without complications and exhibited minimal tenderness at the surgical site. Drain output was monitored, recording 30 ml on Day 1, 20 ml on Day 2, and 40 ml on Day 3. The patient passed flatus on the first postoperative day, indicating the return of bowel function. He was discharged home on May 22, 2024 in a good condition.

Histopathology

Histopathological examination of the gallbladder revealed:

- Marked smooth muscle hyperplasia.
- Neuronal hyperplasia with vascular congestion, hemorrhage, and edema.

- Diffuse infiltration of acute and chronic inflammatory cells with lymphoid follicle formation.
- Fibrosis extending to the adherent liver tissue.

These findings were consistent with acute on chronic cholecystitis.

DIAGNOSIS

The final diagnosis was acute on chronic cholecystitis complicated by an impending cholecystocolic fistula.

DISCUSSION

Cholecystocolic fistulas represent a rare but significant complication of chronic cholecystitis, occurring in approximately 0.06%–0.14% of cholecystectomy cases ⁽⁸⁾. The pathogenesis showed chronic inflammation leading to adhesions and erosion between the gallbladder and adjacent colonic structures, often facilitated by gallstone impaction. Clinical manifestations were nonspecific, frequently presenting as biliary pain, gastrointestinal symptoms, or complications such as bowel obstruction.

Preoperative diagnosis of cholecystocolic fistula is challenging due to its rarity and nonspecific symptoms ⁽⁴⁾. Imaging modalities like ultrasound, CT scans, and MRCP can aid in diagnosis, but definitive identification is often made intraoperatively. In this case, the presence of significant adhesions necessitated the conversion from laparoscopic to open surgery, highlighting the potential need for surgical flexibility in managing complex cases.

Management of cholecystocolic fistulas involves surgical intervention to address the fistula and underlying cholecystitis. Repairing the colon and performing a cholecystectomy are essential steps. In some cases, endoscopic or minimally invasive techniques may be considered, but open surgery remains the standard, especially in the presence of extensive adhesions or anatomical distortions ⁽⁹⁾.

Early recognition and appropriate surgical management are crucial to prevent complications such as bowel obstruction, perforation, or sepsis. This case underscored the importance of surgeons being prepared to convert to open procedures when laparoscopic approaches are insufficient due to anatomical challenges.

CONCLUSION

Cholecystocolic fistulas, though rare, should be considered in patients with chronic cholecystitis presenting with atypical biliary or gastrointestinal symptoms. Surgeons must be vigilant during cholecystectomy procedures for potential fistulas, especially in the presence of dense adhesions. Prompt surgical intervention, tailored to the individual patient's anatomy and pathological findings, is essential to minimize morbidity and ensure optimal outcomes.

REFERENCES

1. **Creedon L, Boyd-Carson H, Lund J (2018):** A curious case of cololithiasis. *Annals of the Royal College of Surgeons of England*, 100 (7): e188-e190. <https://doi.org/10.1308/rcsann.2018.0116>
2. **Kobayashi K, Kobara H, Ougi T, Akaiwa Y, Nomura T, Ougi M, Ishikawa K, Ono M, Kamada H, Masaki T (2022):** Cholecystocolic fistula closed using endoscopic therapy alone: A case report. *Medicine (Baltimore)*, 101 (29): e29680. <https://doi.org/10.1097/MD.00000000000029680>
3. **Correia M, Amonkar D, Nayak S, Menezes J (2009):** Cholecystocolic fistula: a diagnostic enigma. *Saudi Journal of Gastroenterology*, 15 (1): 42-44. <https://doi.org/10.4103/1319-3767.45054>
4. **Zhou H (2018):** Cholecystocolic Fistula Misdiagnosed as Colon Cancer: A Case Report. *American Journal of Case Reports*, 19: 1370-1372. <https://doi.org/10.12659/AJCR.911767>
5. **Osman N, Subar D, Loh MY, Goscimski A (2010):** Gallstone ileus of the sigmoid colon: an unusual cause of large-bowel obstruction. *HPB Surgery*, 2010: 153740. <https://doi.org/10.1155/2010/153740>
6. **Kalu U, Ansari A, Maheshwari G, Joshi S (2025):** Double Large Gallstones Ileus: An Unusual Cause of Mechanical Large Bowel Obstruction. *Cureus*, 17(3):e81020. <https://doi.org/10.7759/cureus.81020>
7. **Toh JW, Balasuriya H, Stewart P (2016):** An Unusual Cause of Large-Bowel Obstruction: Cholecystocolonic Fistula and Gallstone Ileus. *Clinical Gastroenterology and Hepatology*, 14 (9): e107-e108. <https://doi.org/10.1016/j.cgh.2016.03.028>
8. **Balent E, Plackett TP, Lin-Hurtubise K (2012):** Cholecystocolonic fistula. *Hawai'i Journal of Medicine & Public Health*, 71 (6): 155-157.
9. **Bonventre G, Di Buono G, Buscemi S, Romano G, Agrusa A (2020):** Laparoscopic management of cholecystocolonic fistula: A case report and a brief literature review. *International Journal of Surgery Case Reports*, 68: 218-220. <https://doi.org/10.1016/j.ijscr.2020.02.052>