

CASE REPORT

A RARE COMPLICATION OF CHOLELITHIASIS: CHOLECYSTOCOLIC FISTULA – CASE REPORT

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**ABSTRACT**

Although the pre-operative diagnosis of the cholecystocolic fistula has been reported, yet it is not a common finding. Cholecystocolic fistula is the second-most type of biliary enteric fistula after cholecystoduodenal fistula. Cholecystogastric fistula is least commonly reported. We report our experience with cholecystocolic fistula discovered on imaging which was subsequently confirmed through surgery. The standard treatment for cholecystocolic fistula is open cholecystectomy and closure of the fistula. Failure to identify preoperatively or intra-operatively can lead to various complications.

Keywords: Cholecystocolic; Cholecystocolonic; fistula; management

INTRODUCTION

The cholecystocolic (cholecystocolonic) fistula (CCF) is an uncommon but pertinent complication of gallbladder (GB) disease, occurring in 0.06%–0.14% of patients with the biliary disease.^{1–4} The CCF is the second most type of biliary enteric fistula after cholecystoduodenal fistula. Of all the cholecystoenteric fistula 15% to 30% are cholecystocolic.^{1–4} Most of the CCF is an incidental finding during cholecystectomy. The pre-operative diagnosis of CCF is very challenging and rare.¹ We report our experience with a rare pre-operatively diagnosed CCF and its management.

CASE REPORT

A 43 years old male presented to the emergency department of Chitwan Medical College Teaching Hospital with a complaint of severe dull aching epigastric pain, which was recurrent, radiated to the right flank and shoulder, and was accompanied by chronic diarrhea and flatulent dyspepsia. It was associated with non-projectile, non-bilious, non-blood mixed vomiting. It was

aggravated by the intake of food and was not relieved by any analgesics which he got from the local pharmacy. There was no history of any medical illness and also no history of any previous abdominal and other surgery. He was a non-smoker and occasionally consumes alcohol. On examination, he was afebrile, icterus was absent, and had mild tenderness in the right hypochondrium on deep palpation. The findings of the routine blood chemistry test were normal. The complete blood count showed mild leukocytosis.

Ultrasonography revealed a single gallstone, chronic cholecystitis, abnormal-looking GB wall, and a suspicious mass lesion in the fundus of the GB. So computed tomography (CT) was done to further investigate the suspicious mass in the fundus. CT scan reported dense adhesion between hepatic flexure and GB with suspected fistulous communication between GB and colon. Pneumobilia was also noted. The reporting radiologist advised for rectal contrast. On rectal contrast, CT revealed a defect measuring 8 mm *7 mm in the colon

at the hepatic flexure through which colonic content was entering the GB. GB, common bile duct (CBD), and intra-hepatic bile ducts (IHBDs) were opacified with contrast material. Air foci are also seen in the GB, IHBDs, and CBD (Figure 1). Colonoscopy was not performed as no colonic mass was suspected. Our pre-operative diagnosis was cholelithiasis with CCF and we planned for cholecystectomy with excision of the fistula tract.

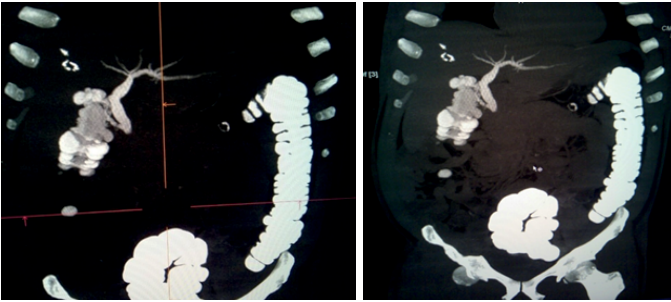


Figure 1. CT scan revealing fistula tract between gallbladder and colon at the transverse colon.

Routine diagnostic laparoscopy was performed. Due to the dense adhesion between the liver and GB, it was converted to open surgery. Laparoscopic converted to open cholecystectomy, fistulectomy with primary repair of the fistula orifice was done. There was a dense adhesion between the liver and GB and it was carefully dissected. A CCF with size 10 mm* 8 mm was found and the fistulectomy was done (Figure 2). The cystic duct was in a normal position, above the second part of the duodenum. Cholecystectomy was done and the fistula orifice was repaired primarily with vicryl 2'0 in a double layer. The GB contained a single stone of size 20 mm * 15 mm and there was no intra-operative bile spillage (Figure 3). The drain was placed at the right sub-hepatic space.



Figure 2. The forceps revealing the fistula tract from the gallbladder.

Post-operatively 3 courses of intravenous ceftriaxone were ordered. Analgesic was administered via the epidural catheter and the catheter was withdrawn on second post-operative day (POD). Sips was started on the first POD, liquid diet was tolerated on the second POD and a soft diet was started on the third POD. The postoperative course was uneventful. The drain was removed on the second POD and the patient was discharged on the fifth POD. Histopathological examination of the specimen revealed chronic calculus cholecystitis and no evidence of malignancy.

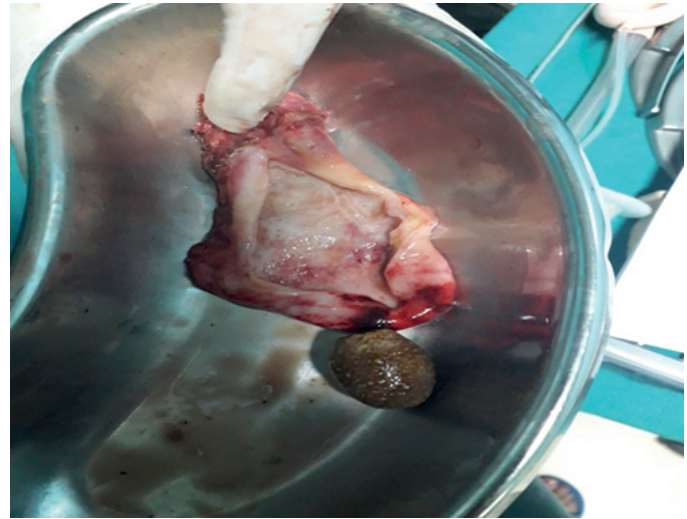


Figure 3. Cut-section of gallbladder specimen containing a single stone.

DISCUSSION

The CCF was first described by Courvoisier in 1890. CCF is a late complication of the chronic inflammatory processes in the GB caused by gallstones.³ It is the second most common cholecystoenteric fistula after cholecystoduodenal fistula.¹ CCF is a two-way communication and this carries a significant risk of biliary sepsis development.⁵ In the review of 231 published CCF cases, Costi et al, reported that the incidence of CCFs was higher among females (female/male ratio: 2.47/1) and was observed in various age groups, but was rarely observed in patients who were <50 years.¹ The pathognomonic triad of symptoms CCF includes chronic diarrhea, pneumobilia, and vitamin K malabsorption.⁶ Our case presented with typical pathognomonic symptoms of chronic diarrhea and pneumobilia. As the preoperative diagnosis of CCF is rare, our case was diagnosed pre-operatively. The early preoperative diagnosis of the CCF lead to early treatment which prevented complications like cholangitis, large bowel obstruction and gallbladder cancer. CCF may also present with large bowel obstruction with stone obstructing in the sigmoid colon.^{7,8} Had our patient presented as large bowel obstruction then the patient's prognosis would have been poor due to complications

related to large bowel obstructions. These stones causing CCF tend to be >2.5 cm in diameter with smaller stones presumed to pass through to the colon. Pre-operative imaging may include plain x-ray, ultrasound, CT scan, magnetic resonance imaging, endoscopic retrograde cholangiopancreatography and barium enema. Our case was diagnosed with a CT scan with rectal contrast.

Surgery is the mainstay of treatment of CCF. The standard treatment for CCF is open cholecystectomy and closure of the fistula. Surgery prevents various complications like chronic diarrhea, cholangitis, liver abscess, gallstone ileus, massive lower gastro-intestinal bleeding, and malignancy. Laparoscopic surgical treatment of CCFs has also been reported.^{2,8} Large bowel obstruction may be treated with enterolithotomy, followed by primary repair or colostomy, or resection with anastomosis depending on the site of the colon. All the complicated CCF should be urgently intervened. Operative intervention in the setting of biliary obstruction after failed decompression should be performed urgently to avoid biliary sepsis.⁵

CONCLUSION

The CCF is a rare entity, it is one that health care providers should be aware of. From our experience, we suggest that if CCF is incidentally discovered it should be resected to prevent cholecystitis, cholangitis, and malignancy. The standard treatment for CCF is open cholecystectomy and closure of the fistula. Failure to identify preoperatively or intra-operatively can lead to various complications.

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