

CASE REPORT

Operative management of cholecystogastric fistula: case report and literature review

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Abstract

We present a patient who was managed surgically for cholecystogastric fistula. The patient was presented with nonspecific symptoms (upper abdominal pain, belching) and, after being investigated, was proceeded for laparoscopic cholecystectomy for gallbladder stones. Unexpectedly, intraoperative, she was found to have cholecystogastric fistula, which was operated with open single-stage approach. We highlight the incidence of these cases, the difficult preoperative clinical presentation and possible diagnostic imaging; explain further about the different surgical approaches to manage these cases and finally review the literature regarding the presentation and the management of bilioenteric fistulas.

INTRODUCTION

Gallstones have a worldwide prevalence that varies between 5 and 25%. In the UK, 15% of the population are thought to have gallstones [1]. One of the rarer, more life-threatening complications that can result from gallstones is cholecystogastric fistulas. They form due to gradual erosion from a chronic cholelithiasis with cholecystitis with subsequent fistula formation [2]. The mechanism is from impaction of the gallstones usually in the Hartmann's pouch. The majority of cholecystogastric fistulas are diagnosed during surgery (92.1%) because of the non-specific presentations [3]. The incidence of the bilioenteric fistulas with gallstones has ranged between 0.15 and 8% [3, 4]. Studies have shown the following spread in incidence in relation to location cholecystoduodenal (77–90%), cholecystocolonic (8–26.5%), choledochoduodenal (5%) and cholecystogastric (2%) [4]. In regard to imaging, abdominal computerized tomography scan with signs of an atrophied gallbladder and pneumobilia can suggest the diagnosis [5]. Operative management with laparoscopic or open cholecystectomy and fistula repair is the commonly used approach [6–8]. The number of operations required has

been questioned where two-stage operations requiring cholecystectomy to be done later due to disease recurrence as opposed to doing cholecystectomy, fistula repair and stone removal in one sitting [9].

In this case, we report our experience of managing cholecystogastric fistulas and review the current literature.

CASE PRESENTATION

A 58-year-old woman presented with symptoms of indigestion, belching and heartburn for 6 months. Initially, symptoms were intermittent and non-specific but later become associated with eating and affected her lifestyle, with upper abdominal pain with no relieving factors. She also started to develop infrequent vomiting, which tended to occur for a few times a week.

She has a medical history of hypertension and hypercholesterolemia and an open appendicectomy for acutely inflamed appendix. An abdominal ultrasonography scan showed gallbladder stones with a thick-walled gallbladder, but no signs of acute inflammation of the gallbladder.

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The patient was subsequently seen in a general surgery clinic. She had an upper gastro-intestinal endoscopy to rule out any peptic ulcer disease, but it did not show any abnormality up to D2. The patient was offered a laparoscopic cholecystectomy to remove her gallbladder stones as a possible treatment for her symptoms and was booked as a day case.

The findings were a thick-walled gallbladder with adhesions to the omentum, transverse colon and stomach wall. On further dissection, we found that there was a dense adhesion between the gallbladder and the antrum of the stomach, and a provisional diagnosis of cholecystogastric fistula had been made.

Due to technical difficulty to dissect laparoscopically, the operation had to be converted to open and a subcostal (Kocher) incision was created. The diagnosis of cholecystogastric fistula was confirmed with the finding of a fistula between the fundus of the gallbladder and the stomach antrum. The fistula was divided, the gallbladder resected by antegrade dissection method, the cystic artery and ducts identified and ligated and gallbladder was removed. The stomach fistula site was 5 mm in size, which was trimmed and then primarily repaired with two layers of vicryl 2-0 suture. The area was further covered by an omental patch to re-enforce the repair area. The patient postoperatively had uneventful recovery and discharged home after three days.

The patient was reviewed in outpatient after 10 weeks, and she has recovered properly with no postoperative complications.

DISCUSSION

Cholecystoenteric fistula is one of the complications of chronic gallstone disease. They can happen because of chronic inflammation and erosion of the gallstones due to pressure effect into the nearby enteric lumen (stomach, duodenum or even colon). It has been mentioned in literature since 1968 [2]. Management has evolved widely since the first case reported in literature with the advances in surgery and the introduction of laparoscopic approach. One of the difficult aspects in the management of these cases is the non-specific features preoperatively and difficult diagnosis using conventional USS, which is the first modality in the diagnosis of gallstones. In the highly suspected cases, CT scan can demonstrate pneumobilia, stones in the GI tract or the atrophied gallbladder suggesting the diagnosis preoperatively. Since most cases are diagnosed intraoperatively, preoperative planning is difficult to achieve.

Surgical management still prove itself an area of dispute as many surgeons still prefer the conversion into open approach rather laparoscopic for better ability of tissue dissection due to the intense adhesions and inflammation that these cases usually have. Chowbey et al. have shown that management of these fistulas laparoscopically, laparoscopic cholecystectomy with transaction of fistula tract and laparoscopic repair of the fistula into the enteric wall, is possible with only 6.3% conversion rate. Hence, laparoscopic approach should be considered depending on patient comorbidities and local expertise [7]. Another aspect of surgery is the one-stage versus two-stage operation. In the latter, the first stage includes the transection of the fistula and repair in the first operation and delayed cholecystectomy versus doing both intervention in the same setting. Many factors to be included in the choice of which approach to be applied at the time of operation, patient

comorbidities, clinical condition the patient presented with and the anatomical feasibility at the time of the operation specifically the amount of adhesions and inflammation encountered [9]. In our case, the operation converted into open surgery due to the density of the adhesions specially at the Calot's triangle and the patient did have a good post-operative recovery with one stage approach.

In conclusion, early laparoscopic cholecystectomy for gallstones may prevent chronic cholelithiasis complications. The diagnosis of cholecystoenteric fistula must be kept in mind with chronicity of symptoms and non-specific presentation. In these cases, the elaborate use of CT as imaging modality should be considered to rule out the diagnosis and for proper preoperative planning for the best approach. Finally, the choice of laparoscopic versus open and one-stage versus two-stage approach should be guided by the patient's clinical condition, local expertise and the best postoperative outcome for the patient.

CONFLICT OF INTEREST

There is no conflict of interest to report.

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