

Cholecystogastric Fistula, a Rare Form of Cholecystoenteric Fistula: A Case Report

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Abstract

Cholecystogastric fistula is a rare and life-threatening complication of cholelithiasis that presents a difficult challenge to the surgeon. We present a case of 36 years old female with symptomatic long-standing uncomplicated gall stone disease diagnosed intraoperatively as cholecystogastric fistula. She underwent conversion of a laparoscopic cholecystectomy to an open cholecystectomy with primary repair of fistulous opening in the stomach with an uneventful postoperative period. Contrast enhanced CT (CECT) remains the preoperative investigation of choice to diagnose a suspected case of cholecystogastric fistula. Surgical management with single stage open approach remains the mainstay of treatment, although laparoscopic technique is also being widely used with the increasing success.

Keywords

Cholecystogastric fistula; Gallstones; Antrum of the stomach; Gall bladder

Introduction

Gallstones have a worldwide prevalence of between 5 and 20% [1]. In Nepal the overall prevalence of gallstone disease is around 2.44-6.45% [2]. Gallstones cause multiple sufferings to human beings. One of the rare complications is the biliary enteric fistula [3]. It occurs in 3-5% of patients with gallstones [4]. The most common type of biliary enteric fistula is cholecystoduodenal fistula (77-90%) followed by cholecystocolonic (8-26.5%), choledochoduodenal (5%), and cholecystogastric fistula (2%) [5]. Cholecystogastric fistula is rare among all forms of cholecystoenteric fistula it has been reported as far back as 1968 [6]. Although well described in literature there remains some debate as to optimal surgical management of these complex problems [7]. We describe an interesting case of this rare presentation in 36 years old female who was diagnosed intraoperatively and was successfully managed with single-stage laparoscopic converted to open surgery involving cholecystectomy with fistula repair.

Case Report

A 36 years old female with type 2 diabetes mellitus and dyslipidemia under medications including metformin, glimepiride, and atorvastatin presented with epigastric discomfort and intolerance to fatty meals was planned for elective laparoscopic cholecystectomy for symptomatic cholelithiasis. She had a past history of acute moderate calculus cholecystitis managed conservatively 8 months back. She was preoperatively evaluated for surgery. On examination, she had normal vitals and abdominal examination findings. Her laboratory investigations were within the normal limits. Ultrasound of abdomen and pelvis revealed normal-sized thickened gall bladder with 2x2 cm calculus without any signs of inflammation. Intraoperatively, the gall bladder wall was thickened with adhesion to the stomach, transverse colon, omentum. On further dissection, dense adhesion between the fundus of the gall bladder and the antrum of the stomach was found, and a provisional diagnosis of cholecystogastric fistula was made. Due to technical difficulty to dissect, laparoscopic surgery was converted to open by giving the right sub-costal incision. Gradual and careful dissection was made and confirmation of diagnosis was made with the finding of a fistula between the fundus of gall bladder and gastric antrum. The fistula was divided; cystic artery and cystic duct were identified, ligated, and divided and cholecystectomy was done. Fistulous opening in the gastric antrum measured approximately 5x5 mm in size [Figure 1,2].



Figure 1: Fistulous opening in antrum of stomach.



Figure 2: Fistulous opening in fundus of gall bladder.

Which was trimmed and primary repair was done in 2 layers using vicryl (2, 0) suture. This area was further covered by an omental patch to re-enforce the repair. Approximately 3x2 cm stone was retrieved from the gall bladder [Figure 3].

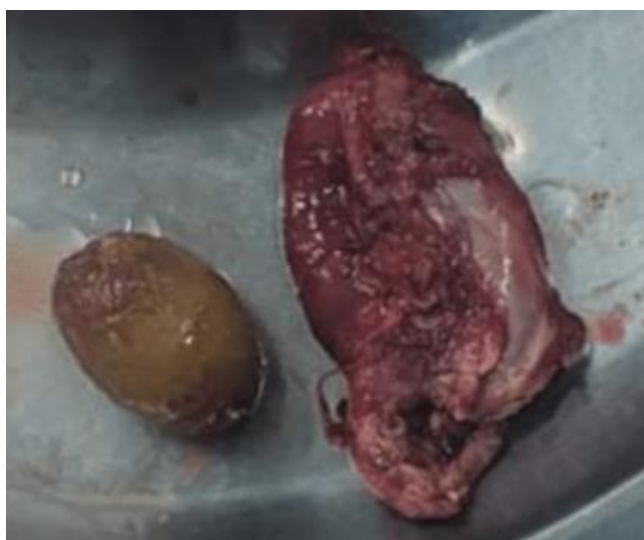


Figure 3: Stone retrieved from gall bladder.

A drain was placed in the Morrison's pouch. The post-operative period was uneventful, the drain was removed on the 4th day, and the patient was discharged on the 5th post-operative day. She was reviewed in OPD after 2 weeks. She had recovered completely without any post-operative complications. Biopsy revealed features suggestive of chronic cholecystitis.

Discussions

Cholecystoenteric fistula is a rare and late complication of cholelithiasis and is defined as a spontaneous tract formation between an inflamed gall bladder and one or more parts of the surrounding gastrointestinal tract [8]. Glenn et al. suggested that following stone formation in the gall bladder, an acute inflammatory process occurs secondary to obstruction of the cystic duct. This is followed by the development of adhesion with the contiguous viscus. Recurrent episodes of such inflammation results in

the destruction of the wall of the gall bladder and adjacent viscus ultimately resulting in erosion of tissues and fistulization [9]. An alternate theory is that the fistula develops secondary to mechanical pressure from gall bladder stone resulting in erosion of tissue in the gall bladder wall with necrosis until a fistula form with contiguous viscus [10].

Patients with cholecystogastric fistula usually present with features of uncomplicated gall stone disease with symptoms such as nausea, vomiting, backache, flatulence, and intolerance to fatty meals [11]. Rarely they present as gastric outlet obstruction termed Bouverie's syndrome [12]. Most of these cases are rarely diagnosed pre-operatively due to a lack of clue to the diagnosis [10]. Ultrasound of the abdomen and pelvis is the basic investigation for these patients who presented with right hypochondriac pain and long-standing dyspepsia but may not reveal definite diagnosis [10]. In suspected cases CECT abdomen and pelvis remains the investigation of choice which can give idea of pneumobilia, stone in the gastrointestinal tract, or atrophied gall bladder suggesting the diagnosis pre-operatively [13]. The presence of gas in the biliary system on MRCP indicates the possibility of cholecystoenteric fistula [14]. Many reports have appeared in the literature supporting the efficacy of ERCP in documenting spontaneous biliary fistula formation [15].

In the past, some surgeons advised against surgery in uncomplicated cholecystoenteric fistula except for cholecystogastric and cholecystokinic fistula because of possibility of spontaneous closure [16]. In the early years, cases where adhesions were extremely dense required conversion to an open procedure. However, with increasing experience and surgical skills, these are now treated by an advanced laparoscopic technique such as intra-corporeal suturing and the use of staplers with only a 6.3% conversion rate [11]. There is debate on one stage versus two-stage operation. Two-stage operation includes transection of the fistula and repair in the first operation followed by cholecystectomy while one-stage operation includes doing both interventions in same settings. The patient's comorbidity, clinical condition the patient presented with, anatomical feasibility (adhesion and inflammation), and local expertise are the factors determining the selection of approach [7]. Many still argue that one-stage surgery remains the only effective means of treatment [17]. There is also increasing evidence for use of interval cholecystectomy in patients where the removal of the gall bladder at the time of first surgery is deemed inappropriate [18]. Endoscopic treatment of cholecystogastric fistula often proffers a secure and more prudent solution to the problem given the patient group and likely associated co-morbidities [19].

Conclusion

Cholecystogastric perforation is rare complication of long-standing gallstone disease. It is difficult to make the preoperative diagnosis of this condition, with CECT abdomen and pelvis being the investigation of choice in suspected case. Single-stage open surgery involving cholecystectomy with the repair of the fistulous opening is a viable treatment option for these patients, although the laparoscopic approach is increasingly being used.

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