

# Chronic Gallstone Disease Presenting as Cholecystoduodenal Fistula

Sajid Ali<sup>1</sup>, Mohammad Zarin<sup>2</sup>

<sup>1</sup> Post graduate Resident, Department of Surgery, Khyber Teaching Hospital Peshawar

<sup>2</sup> Associate Professor Department of Surgery Khyber Teaching Hospital Peshawar  
(Khyber Teaching Hospital Peshawar)

## ABSTRACT

Cholecystoduodenal fistula (CDF) is the most common cholecystoenteric fistula. It is a late complication of gallbladder disease with calculus and is mainly encountered in the elderly and females. We report the case of a 60 years' female patient with cholecystoduodenal fistula and gallstones. She had recurrent attacks of abdominal pain with anorexia and vomiting. Ultrasound abdomen demonstrated air in the biliary system. Computed tomography abdomen revealed pneumobilia and CDF tract. We did cholecystectomy and repair of CDH tract through Modified Graham's repair. This case report suggests the importance of knowing the biliary anatomy through pre-op Magnetic resonance cholangio pancreatography (MRCP) or MRI abdomen and planning definitive procedure for bilioenteric fistulas. The patient's clinical features and operative management are presented and discussed with current literature.

**Key Words:** Bilioenteric fistula, Cholecystoduodenal fistula, Chronic Cholecystitis.

Address of Correspondence

Sajid Ali

Email: dralisajid89@gmail.com

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## Introduction

Cholelithiasis is a common health condition and only few patients (around 1–3%) develop rare complications such as choledochoduodenal fistulas.<sup>1</sup> Chronic cholecystitis with gallstones is the primary etiology in as many as 75% of CDF patients.<sup>3</sup> The formation of bilioenteric fistula is initiated when the walls of the gallbladder and adjacent bowel are chronically inflamed and adherent. Increasing intraluminal pressure caused by obstruction leads to local ischemia and necrosis and ultimately communication.<sup>2</sup> Cholecystoduodenal fistula is a difficult problem usually diagnosed intra-operatively and is the most common indication of conversion from laparoscopic to open surgery. A high degree of suspicion is mandatory in difficult cases during surgery to prevent complications. The treatment for CDF is cholecystectomy and closure of fistulous communication. The laparoscopic stapling technique has been reported as feasible and safe methods to treat such fistula. Endostapler device is easy

to use and is effective. The fistulous tract should be dissected clearly to demonstrate all-around anatomy and create adequate space to apply the endostapler.<sup>3</sup>

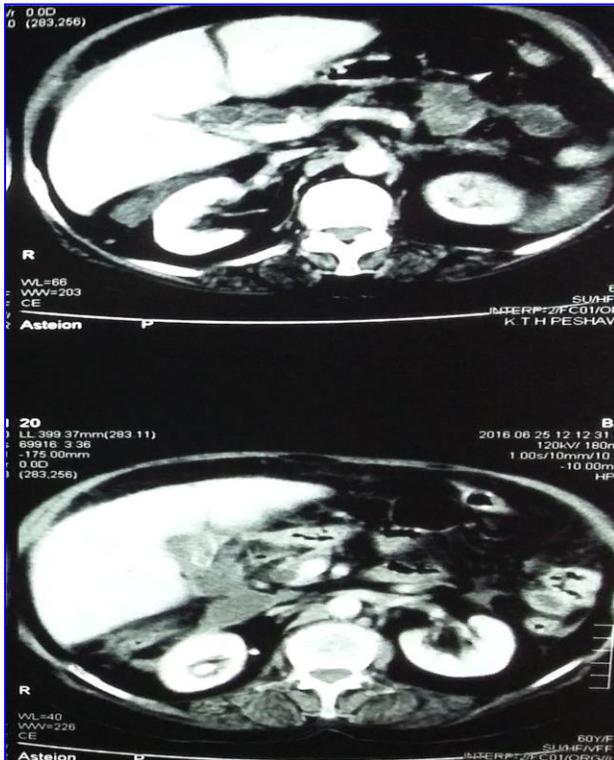
## Case Reports

A 60 years old non-diabetic non-hypertensive patient presented to our ward with 40 days' history of pain in abdomen associated with anorexia and vomiting. She also gave a history of chronic constipation for which she was using on/off sodium picosulfate. There was no history of fever, jaundice or weight loss. On examination, she was found to have tender right hypochondrium and epigastric region and distended abdomen. Vitals were BP: 130/80 mmHg, pulse 90/min, RR 18/min, and temperature: 99°F. Ultrasound Abdomen and pelvis showed thickened irregular gallbladder with a gallstone which was 7.8mm. Total leukocyte count was 11300/cmm, Hb 8.7gm/dl, platelets count 432000cmm, serum

amylase 50u/l, total bilirubin 0.47mg/dl, serum alkaline phosphatase 285u/l (up to 275), ALT 42u/l, urea 63.5mg/dl, creatinine 1.43mg/dl, albumin 1.61mg/dl (3.5-6.5),s globulin 3.08 (1.8-3.6), serum calcium 8.7mg/dl. ESR was 120mm 1<sup>st</sup> hour. She was started on conservative management with IV fluids, IV cefuroxime

- Gallbladder resected
- Duodenal defect closed with omentum (modified grahams repair)
- Thorough wash and suction done
- Two drains placed one in right side of subhepatic space and second in left side in pelvis

The patient was shifted to surgical intensive care unit for post-operative care. Where she spent 2 weeks before fully stabilized and then was shifted to parent surgical E ward where she spent another week and was discharged successfully. The patient had no complications during 6months of follow-up.



**Figure 1: Abdominal CT scan showing pneumobilia and fistulous communication between gallbladder and duodenum**

1.5gm B.D, painkillers and PPIs, but patient did not improve clinically and CT abdomen and pelvis was done which showed pneumobilia and fistulous communication. One day before surgery her investigations were: HB 11.5gm/dl after two units of blood transfusions. TLC 15500cmm, platlets count 361000cmm, S bilirubin 0.91mg/dl, SALPO<sub>4</sub> 265u/l (upto 275), ALT 20u/l (10-40), urea 19mg/dl, creatinine 0.96mg/dl, PT control: 13sec, patient: 15sec, APTT control 28sec, patient 28sec. Exploratory laparotomy was done through an upper midline incision and the following findings were noted

- Perforated gallbladder
- Cholecystoduodenal fistula
- And gross ascites

Procedure done was

## Discussion

Cholelithiasis is a common problem and Cholecystoduodenal fistula is a rare complication of chronic gallstone disease.<sup>1,3</sup> Cholecystoduodenal type accounts for as many as 80% of cholecystoenteric fistulas.<sup>4</sup> Cholecystoduodenal fistula is generally considered a relative contraindication to laparoscopic cholecystectomy because of difficulties in its management intra-operatively. They are of two types non-obstructive and obstructive type, the former can present with cholangitis, weight loss and malabsorption syndrome while the latter with gallstone ileus or Bouveret syndrome, hematemesis or melena. MRI abdomen and MRCP should be ordered pre-operatively to delineate anatomy of biliary channels. Diagnosis can be a challenge and pre-operative ultrasound, as well as CT scan of abdomen, may reveal pneumobilia.<sup>5-7</sup> A cholecystoduodenal fistula is generally considered to be a relative contraindication to laparoscopic cholecystectomy because of difficult anatomy and risk of injuries to the duodenum and surrounding structures intra-operatively but studies have shown that laparoscopic technique can be implied if expertise are available with same principles of the careful release of adhesions cholecystectomy and closure of fistulous track with endostapling device.<sup>8,9</sup> Careful preoperative workups for such patients should be done in order to plan definite treatment i.e. cholecystectomy and closure of fistulous tract.<sup>3,4</sup>

## Conclusion

A cholecystoduodenal fistula is a rare complication of chronic gallstone disease and therefore there should be a

high index of suspicion of biliary enteric fistula in chronic gallstone disease when patients present with the bizarre clinical picture.

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