

## A CASE OF AN UNHEARD TRIO OF COMPLICATIONS OF CHRONIC DUODENAL ULCER FROM GASTRIC OUTLET OBSTRUCTION, CHOLEDOCHODUODENAL FISTULA AND COMMON BILE DUCT STRICTURE

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### ABSTRACT

Commonly encountered complications of duodenal ulcer [DU] are bleeding and perforation, while gastric outlet obstruction [GOO] is uncommon. Penetrating duodenal ulcer leading to Choledochoduodenal Fistula [CDF] or Common Bile Duct [CBD] Stricture, or pancreatic duct obstruction are as such extremely rare. We report a case of an unheard trio of complications of chronic duodenal ulcer gastric outlet obstruction, Choledochoduodenal fistula and common bile duct stricture [Thatte Syndrome] successfully treated with a symptom-free 12 years' follow-up, with a brief review of literature.

**KEYWORDS :** Biliary Enteric Fistula, Choledochoduodenal Fistula, Complications of Duodenal Ulcer, Pneumobilia

With the advent of advances in endoscopic surgery and investigative tools, especially imaging techniques, pancreatico-biliary surgery has unbelievably metamorphosed over past 2 decades. Yet, not uncommonly, making difficult treatment decisions, perplexing situations and diagnostic dilemma keep on haunting the clinician. With inflow of newer and better medications, the last couple of decades have witnessed a rapid decline in the incidence of complications of duodenal ulcer which were so common once upon a time. Commonly encountered complications are bleeding and perforation, while gastric outlet obstruction is uncommon. Penetrating duodenal ulcer leading to CDF or choledochal stricture or pancreatic duct obstruction are per se extremely rare let alone their concurrence with gastric outlet obstruction.

CDF due to Cholelithiasis or Choledocholithiasis or iatrogenic (instrumentation of biliary tract) biliary-enteric fistula are not uncommon. However, only 5% of cases of CDF are consequent to complicated duodenal ulcer disease. Although CDF usually goes asymptomatic and may be incidentally picked up on GI radiography or endoscopy, in some cases it may present with recurrent cholangitis and complications of duodenal ulcer disease. Routine availability of Endoscopic Cholangio-Pancreaticography[ERCP] has led to increase in detection CDF. The trio "Thatte syndrome" gastric outlet obstruction, CDF, cbd stricture is being reported here for the first time in literature.

### Case Report

Our patient was a 40 years old female who came

with the complaints of progressive weight loss, colicky abdominal pain especially after meals, followed by projectile vomiting throwing out undigested food material, reduced appetite, epigastric fullness and epigastric lump moving from left to right for 2-3 months. She did not have history of jaundice, tuberculosis, fever with chills. She was investigated 5 years ago for chronic acid peptic disease when upper GI endoscopy had revealed "deformed pylorus with pyloric channel ulcer extending on anterior wall of first part of duodenum, edema and petechiae, normal posterior wall, stenosed apex, second part of duodenum could be entered easily". She was medically treated for the same. On examination, she was an emaciated, anaemic lady, weighing 32 kg , without icterus , lymphadenopathy, pedal edema. Abdominal examination revealed strong visible peristalsis from left to right in epigastrium, borborygmi and distended stomach.[ stomach that could be seen, heard, felt]. Upper GI endoscopy showed dilated stomach, gastritis, gastric stasis, deformed and scarred first part of duodenum, mucosal thickening, stenosis at apex and endoscope could not be entered in second part of duodenum. Impression was that of a healed chronic duodenal ulcer with tight gastric outlet obstruction. Mucosal biopsy was taken to rule out Tuberculosis, malignancy, Chron's disease. Apart from low[9.5 gm%] Haemoglobin, Haemogram, urine routine, Blood sugar, renal function tests, Serum Gastrin were within normal range. Barring higher Serum Alkaline Phosphatase[192] and lower Serum Albumin [2.9gm%], rest of the liver functions were within normal limits. Abdominal Xray showed pneumobilia (Figure 1).

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Figure 1 : Pneumobilia [Aerobilia] Raises Suspicion of Choledochoduodenal Fistula

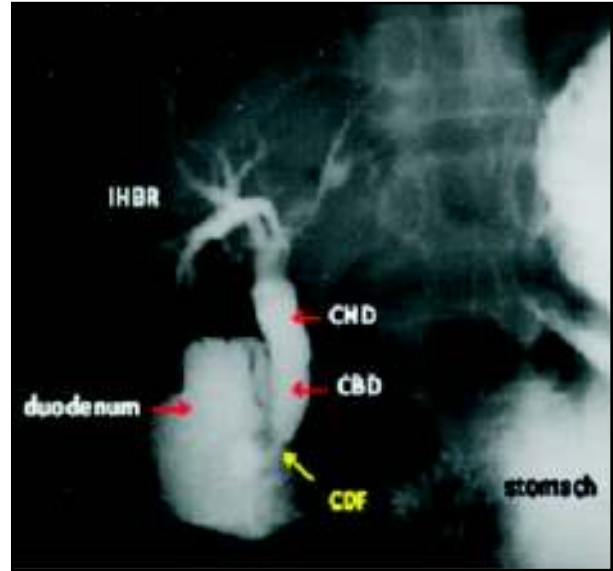


Figure 2 : Barium Meal Study Delineated the Intra and Extrahepatic Biliary Tree



Figure 3 : Barium Meal Study Delineated the Extrahepatic Biliary Tree and Choledochoduodenal Fistula [CDF], Dilated CBD, Stricture of Distal CBD [Red Arrows]

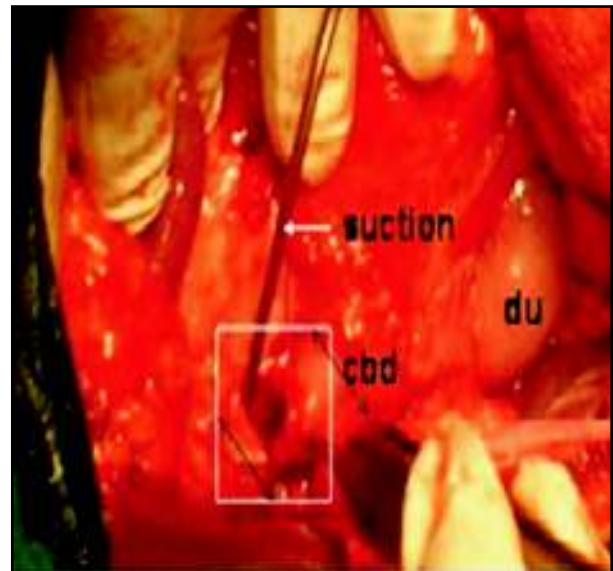
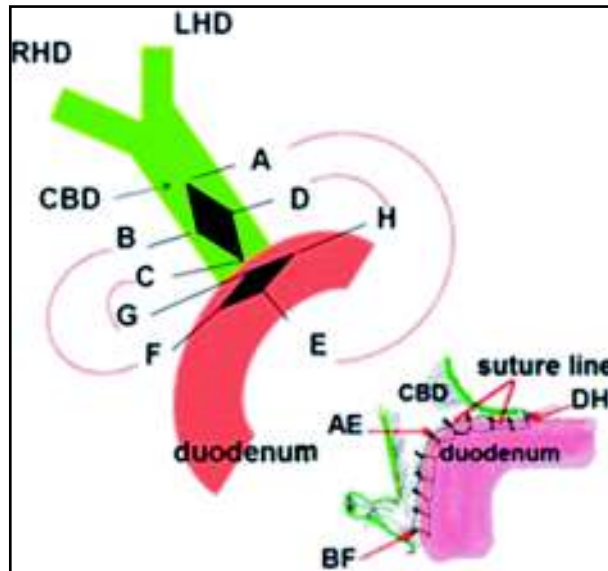


Figure 4 : Dilated Common Bile Duct [CBD] Seen Opened Up [Within the White Square], With a Hole [Looks Darker] on the Opposite Wall [CDF]

Abdominal sonography showed pneumobilia, air bubble in gall bladder with minimal sludge, dilated CBD [14 mm] with air bubble, dilated intrahepatic biliary radicals. Barium meal study detected gastric outlet obstruction with CDF, distal CBD stricture (Figure 2 and 3). A clinical diagnosis of gastric outlet obstruction, CDF, cbd stricture was made.

Surgery was planned. Purpose was to relieve gastric outlet obstruction and tackle dilated CBD. Intra operative pathology findings were - scarred first part of duodenum, dilated thick walled proximal CBD [14mm] with distal stricture, chronic cholecystitis with calculi, CDF with fistulous opening on medial wall of CBD distal to strictured



**Figure 5 : Gliedman Gold Technique of Performing Choledochoduodenostomy A Longitudinal Incision on the Common Bile Duct [CBD] [Depicted Green] and 1st Part of Duodenum [Incisions are Depicted as Black Diamonds]. Points 'A,B,C,D' on the Common Bile Duct are Anastomosed to the Points 'E,F,G,H' on the Duodenum**

bulb. (Figure 4) Truncal Vagotomy, antrectomy, gastrojejunostomy, jejunojunctionostomy were fashioned. Difficult duodenal stump closure [multiple interrupted sutures] was tackled with Bancroft technique. Cholecystectomy with CBD exploration and side to side choledochoduodenostomy [Gliedman and Gold technique] (Figure 5) after Kocherisation of duodenum was performed, which assured a wide anastomotic stoma [that ensures excellent free bile flow, thus preventing ascending cholangitis]. Postoperative recovery was uneventful. The patient remains asymptomatic at 12 years' follow up.

## DISCUSSION

Bartholin first described biliary enteric fistula in 1654, but duodenal ulcer as a causative communicating mechanism was first recognized and published by Long in 1840. (Long, 1840)

There are several aetiologies of biliary-enteric fistula, usually incidental findings as they seldom produce significant symptoms.

It has been postulated that sudden disappearance of peptic ulcer symptoms may herald formation of CDF due to bathing of ulcer by alkaline bile. Some of them are found only during surgery thus forcing surgeon to change planned procedure. CDF is an uncommon complication of penetrating DU, cholelithiasis, choledocholithiasis or instrumentation of biliary tract [iatrogenic]. Only 5% of CDF are consequent to complicated DU. (Jain, Myelavagnam, Allarakhia, 1980) .Only 200 cases were documented in world literature till 1991. (Dubois et al., 1985) (Naga and Magawer 1991). Until 1986, only 8 cases have been reported of CDF, as a complication of DU in Indian literature. (Singh and Sarkar, 1986). In the decade from 1984 to 1994, in English literature, not even a single case of CDF was documented.

(Mohammad et al., 1994). The rarity of CDF stems from the fact that DU typically occurs within 4 cm distal to pylorus where as CBD is about 7 cm distal to pylorus. (Shah and Ramakantan, 1990). A study of 81 patients over a period of 50 years noted the incidence of various types of spontaneous biliary enteric fistula - cholecysto-duodenal [68%][usually due to gall stones], cholecysto-colonic [13.6%], Choledochoduodenal [8.6%], cholecysto-gastric [4.9%], duodeno-left hepatic [4.9%]. (Stagnitti et al., 2000) CDF due to penetrating DU is more common in males. Till 1967 only 3 cases were females. (Hutchings et al., 1956). Diagnosis is an incidental one, on barium meal or plain radiograph or CT scan or ERCP that shows CDF or pneumobilia. However, Pneumobilia is an inconsistent finding present only in 14-58% of patients. (Elham and Hossain, 2012).

An indirect sign suggesting fistula is described during ERCP where biliary tree dilatation subsides when patient is placed in anti-Trendelenberg position. The treatment of uncomplicated CDF is unnecessary as healing of ulcer leads to healing of fistula. Hence, presence of CDF per se does not immediately equate to necessity for surgery. When surgery is warranted, Truncal Vagotomy with Antrectomy and Biliojejunostomy is preferred, leaving the CDF untouched. (Dubois and Levard, 1985) Cholecystectomy, CBD exploration, bilioenteric reconstruction is reserved for those rare cases of concomitant biliary structure.

Benign non-traumatic stricture of the CBD: Once upon a time, penetrating DU was the leading cause of benign non-traumatic stricture of the CBD. (Glick , 1971) With the advent of laparoscopic Cholecystectomy [ increased iatrogenic strictures] and better diagnostic modalities, benign strictures of CBD are on rise than ever before; whereas, with better medical treatment, penetrating duodenal ulcer as the cause of these strictures is extremely rare. Such strictures, preoperatively mimic malignant tumour [cholangiocarcinoma], eventually turning out to be inflammatory ones due to penetrating DU(Ho et al., 2004). Obviously, such strictures require to be treated surgically.

#### Highlights of this Case

1. Female patient with CDF of DU origin [females are rarely affected] (Hutchings ,wheeler , Puestow 1956)
2. ERCP was not possible due to gastric outlet obstruction.
3. Per se, individually, gastric outlet obstruction, Choledochoduodenal fistula and common bile duct stricture are vanishing complications of DU.
4. Here was a case of healed DU resulting into gastric outlet obstruction. Recurrent penetrating DU in post-bulbar area resulted into Choledochoduodenal fistula and common bile duct stricture. This is the first case of these “three complications of DU concurrently affecting a patient.”
5. During surgery, difficult duodenal stump closure was tackled with Bancroft technique. Dilated CBD answered the dilemma as to whether or not to tackle CBD & fistula.

#### CONCLUSION

A trio of rare and vanishing complications of penetrating or recurrent chronic duodenal ulcer, namely, gastric outlet obstruction, Choledochoduodenal fistula and common bile duct stricture [Thatte Syndrome] successfully treated, with a 12 years' long follow up is reported.

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