



A RARE CASE OF CYSTIC DUCT- DUODENAL FISTULA - A CASE REPORT

General Surgery

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ABSTRACT

The gallbladder lies on the underside of the liver in the main liver scissura at the junction of the right and left lobes of the liver. The cystic duct is about 3 cm in length but the length is variable. The lumen is usually 1–3 mm in diameter. [1]

The cystic duct joins the supraduodenal segment of the common hepatic duct in 80% of cases, however the anatomy may vary and the junction may be much lower in the retroduodenal or even retropancreatic part of the bile duct. [1]

In this report, a fistula between cystic duct and duodenum was noted during open cholecystectomy with cbd exploration surgery.

KEYWORDS

Case Report

A 50-year old female patient presented to our General Surgery department with the complaints of pain in right hypochondrium since 1 month with associated nausea and vomiting. She was otherwise healthy, without any co-morbid ailments. On examination, she was afebrile and without jaundice. The abdominal examination revealed mild tenderness in the right hypochondrium and epigastrium. A biochemical evaluation revealed normal liver function tests.

An abdominal ultrasound showed a contracted gall bladder with wall echo shadow complex suggestive of cholelithiasis. There were prominent central intra hepatic biliary radicals with common bile duct measuring 5mm. Magnetic Resonance Cholangio Pancreatography was undertaken and it reported cholelithiasis with dilatation of intra and extrahepatic biliary tract with common bile duct measuring about 9.4mm. A calculus measuring about 9.5mm is seen in cystic duct with mild prominence of adjacent walls (Figure 1) The endoscopic retrograde cholangio pancreatography (ERCP) was undertaken and it suggested pyloric stenosis with choledocolithiasis and cbd stenting was done.

During surgery extra hepatic biliary tree was explored, calot's triangle was identified along with cystic duct and cystic artery. Gall bladder was grasped from fundus and was opened (Fundus first approach). Absence of bile was noted in gall bladder. A tract originating from cystic duct and going to the 2nd part of duodenum was noted (Figure 2). Tract was probed and a clear passage was appreciated between cystic duct and duodenum. Furthermore, common bile duct was opened and stones were removed. Complete clearance of cbd was done and free flow of bile was noted. T-tube was placed in common bile duct. Bile flow was present. CBD was repaired over T-tube. A drain placed in Morrison's pouch and abdomen was closed. Gallbladder was sent for histology. T- tube cholangiogram was done on 9th post-op day which showed free flow of bile going in duodenum with minimal leakage.

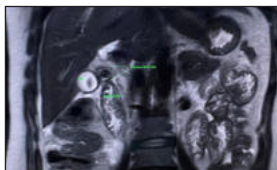


Figure 1(a)- Magnetic Resonance Pancreatography showing cystic duct stone.



Figure 2(a)- Intra-op photo showing Kocher's forceps holding fistulous tract.

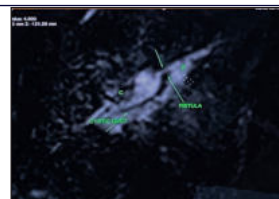


Figure 1(b)- MRCP image showing patent fistulous tract between cystic duct and 2nd part of duodenum.

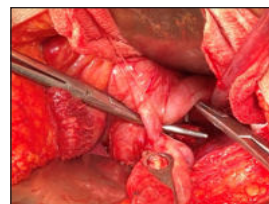


Figure 2(b)- Intra-op photo showing a patent tract connection between cystic duct and 2nd part of duodenum. GB grasped by sponge holding forceps.

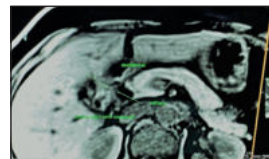


Figure 1(c)- MRCP showing normal anatomical relations between gallbladder and duodenum.



Figure 2(c)- Intra-op photo showing probing in common bile duct.

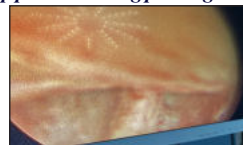


Figure 3- Nephroscopic image showing clearance of cbd of stones.



Figure 4- Intra op photo showing stump after closure of fistulous tract.

DISCUSSION

The gall bladder develops during the fifth to sixth week of the gestation, when the connection between the hepatic diverticulum and the foregut (duodenum) narrows, forming the bile duct. A small ventral outgrowth (primordium) is formed by the bile duct. This primordium gives rise to cystic duct and gall bladder.

When a large gallstone compresses the CBD it causes pressure necrosis which further gets adherent to CBD wall. It eventually causes compression and later occasionally leads into cholecystocholedochal fistula. It occurs either from Hartmann's pouch into CBD (common) or from fundus of gallbladder into the CBD. This is known as Mirizzi's syndrome. It is suspected on CT scan, but usually identified on table. It needs cholecystectomy; on table cholangiogram; and exploration of CBD. It often needs choledochojunostomy.[4]

There are various anomalies which are documented related with the extra hepatic biliary tree. There can be Absence of cystic duct. It is usually pathological and indicates the recent passage of stone at the lower end of cystic duct. This leads to ulceration in the common bile duct due to compression. This is one of the cause of Mirizzi's Syndrome.

Another anomaly is Low Insertion of Cystic Duct which opens into the common bile duct near the ampulla. Variations of this anomaly can occur. They can be (a) Lateral angular insertion of cystic duct (b) Anterior spiral course of cystic duct (c) Posterior spiral course of cystic duct (d) Parallel course with CBD with common sheath [14-23%] (e) Insertion into Ampulla of Vater (f) High insertion of cystic duct (g) Insertion into right hepatic duct [0.006-0.01%] (h) Insertion into left hepatic duct (i) Cystohepatic duct [1-2%] (j) Double cystic duct (k) Absent cystic duct. [2]

Bilioenteric (Cholecystoduodenal) fistulas are the abnormal communication between the bile duct system and the gastrointestinal tract that occurs spontaneously and is a rare complication of an untreated gallstone in the majority of cases. These fistulas can cause diverse clinical consequences and in some cases be life-threatening to the patient. These fistulas can occur due to large impacted stones in mid or distal part of CBD. Due to the large size of stones they erode the duct mucosa and form a fistulous tract between common bile duct and duodenum. [3]

CONCLUSION

This is a very rare anomaly where a fistula is noted between cystic duct and duodenum and not between CBD and duodenum. It's not been documented presently in any medical or surgical literature worldwide. The management protocol remains same for both the fistulas i.e. cholecystectomy with the exploration of fistula and closure of fistula tract.

Conflict Of Interest

There was no conflict of interest with respect to this study.

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