

## Case Report

### Cystic Duct Absence

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**Abstract:** Biliary tract operations are the most common GI tract surgery performed worldwide and injury to the bile duct leads to both acute and chronic complications. The incidence of bile duct injury is increased in the presence of severe inflammation and is compounded by congenital abnormalities of the biliary tree. Congenitally absent cystic duct is one such rare anomaly with significant surgical implications. So far, only nine clear cases of congenitally absent cystic duct have been reported.

**Keywords:** Cystic Duct; Congenital Absence; Absent Cystic Duct

#### INTRODUCTION

The preoperative diagnosis of this rare condition is difficult to make. However, with advances in biliary tract imaging and with heightened awareness of this anomaly, fewer patients will need to undergo unnecessary operative intervention. The authors review the different imaging modalities available to help diagnose this condition and highlight the importance of being aware of this rare anomaly to avoid an operation that carries a high risk of iatrogenic injury.

#### CASE REPORT

The initial presentation of the patient was made on 25.07.2016 on the internal medical emergency with right upper quadrant abdominal pain since 23.07.2016. No fever, no jaundice, mild nausea, vomiting, diarrhea once. Since the last episode of cholecystitis six months earlier, the patient was free of symptoms after antibiotic therapy and have deliberately reduced their weight by 25 kg. After consultation, recourse to our hospital an early - elective cholecystectomy for appointment has been agreed in the absence of emergency excessive surgical indication to which woman Tacke on 8/8/2016 schedule envisioned. 09.08.2016 the above mentioned minimally invasive procedure in uncomplicated general anesthesia. Intraoperative turned the disposal of the cystic duct in Gall bladder infundibulum completely obliterated represent; there were a total recovered four large concretions. The gallbladder fundus was only filled with whitish- clear secretions. The surgical procedure was generally uneventful, so that the patient after brief monitoring in the recovery could be transferred to our visceral surgical Normal station again. Here Ms. Tacke was always hemodynamically stable. Despite initial nor billowing and painful abdomen, the patient mobilized

on the first postoperative day even out of bed, by which it came to an early decline in pain symptoms and the abdominal pressure feeling. For further complications, we can see the patient on 12/08/2016 in your outpatient treatment

#### Ultrasound-findings

Liver: Organ Size: normal, right lobe: MCL: 16.1 cm, midline 9.3 cm, regular shape, surface / contour: not ideally smooth, right lower margin: pointed, left lower edge: rounded texture brightness: bright, texture pattern: compacted, Leb-damping: increase Duplex / color Doppler: hepatic vein center: open vein, triphasic, V.portae portal vein right: V.portae open river orthograde, TAmx 26.1 cm / sec Gallbladder: easy to assess, sober (> 8h), painful on GallBladder-palpation, normal shape, increased filling, 112 x 41 x 30.4 mm, volume: 69.8 mL, normal position, thickened wall locally, to 5.3 mm, layered, Fluid secretion, Silhouette: smooth, lumen: anechoic, extended, large concretion, there also pressure sensitivity, multiple concretions, max size: D.cysticus: 20x15 mm mm, total noise cancellation, location: 1 large concretion in D. Cystic and mind. Three large concretions in the fundus biliary tract: sufficiently assessable, extrahepatic and intrahepatic not expanded, proximal third: 1.8 mm; Bladder: bladder little filled. Stomach / intestine: Clear liquid: Location: Morrison Pouch, between intestinal loops, Quantity: trace ascites, small intestine: regular peristalsis, lumen sections increasingly filled with liquid (terminal ileum), wall: not thickened, normal vascularized No secure evidence of appendicitis. Ultrasound pressure painful gallbladder in the neck region in the sense of a beginning cholecystitis with calculus in cystic duct.

## DISCUSSION

Congenital anatomical variants of the cystic duct are common, occurring in 18%-23% of cases. Among those cases, the cystic duct inserts into the middle third of the extrahepatic bile duct in 75% of cases and into the distal third in 10% of cases. Five types of cystic duct anomaly have been described: a long cystic duct with low fusion with the CHD, abnormally high fusion between a cystic duct and the CHD, accessory hepatic duct, cystic duct entering the right hepatic duct, and cholecystohepatic duct [1]. Divided cystic duct anomalies into three types, and the very low-sited confluence was found in nine (13.8%) cases among anomalous cystic ducts. Another study of 50 patients reported a single case (2%) of intrapancreatic confluence [2] in diagnostic imaging; developmental anomalies of gallbladder are usually an incidental finding. Duplication anomalies are quite rare and are characterized by a large variety of configuration depending upon the size and degree of fusion of the two lobes and on the number and disposition of the cystic ducts [3]. Francis Glisson first described cystic duct anatomy in 1654 [7]. The mean cystic duct length is 30 mm (range 4 mm to 65 mm) and the diameter ranges from three to 9 mm [8]. The cystic duct is considered part of the extrahepatic biliary apparatus, which includes the right and left hepatic ducts, the CHD and the CBD. Although these folds are referred to as valves of Heister, they have no valvular function [9]. Embryologically, the gallbladder and cystic duct develop from the caudal part of the hepatic diverticulum, which is a ventral outgrowth from the distal foregut whose maturation is influenced by fibroblast growth factor secreted from the fetal heart [10]. Failed development of the proximal part of the gallbladder diverticulum results in agenesis of the cystic duct [5-6]. Complete agenesis of the gallbladder and cystic duct is a well known entity [11-13], but an isolated congenitally absent cystic duct is rare and only 11 cases have been reported. Other congenital variations of the cystic duct are seen in 18% to 23% of individuals [14], and relate to its entry point and mode of union with the CHD. In cases of congenitally absent cystic duct the gallbladder is directly attached to the common duct with a wide mouth [7], permitting free flow of gallstones into the CBD which may result in recurrent pain, jaundice and gallstone pancreatitis. In our case, there is no connection between Gall bladder and the biliary tree. Due to these anatomical variations, complications seen were bleeding in 3.67% of cases and biliary leak from drain in 1.67% of cases. Three patients were re-explored one for bleeding and other two for biliary leak giving rise to morbidity of 1%. No mortality was seen in this series. However, morbidity assessed by Leghari AA *et al.* [1]. It is almost always an incidental finding of the abdominal surgery or a finding at autopsy. It has a lower incidence in surgical cholecystectomy series (0.007%-0.027 percentage) than

that in autopsy reports (0.04%-0.13percentage). The prevalence range is 0.007%-0.13 percentage [4].

## CONCLUSION

Congenital anomalies of the extrahepatic bile ducts are common. Short or aberrant cystic duct entry or union with the CHD is routinely encountered, especially in the presence of severe pericholecystic inflammation. However, a congenitally absent cystic duct is a rare entity with severe surgical implications. Patients with recurrent episodes of gallstone pancreatitis separated by brief intervals should raise the suspicion of a congenitally absent cystic duct and lead the surgeon to consider open cholecystectomy or at least assess their skills prior to laparoscopic cholecystectomy. Knowledge of this anomaly and its mode of presentation and preferred surgical approach should help avoid inadvertent biliary injuries and the complex biliary procedures, which may be required to fix them.

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