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Case Report

Surgical treatment of type-II choledochal cyst: a case report

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ABSTRACT

Choledochal cyst is a pathology conditioned by a complex congenital malformation that involves different degrees of dilation of both the common bile duct and the pancreatic duct with a malignant tendency, these are reported more frequently in children, representing 1% of benign diseases of the biliary. Babbitt 's theory is the most frequently proposed theory and states that CCs (choledochal cysts) result from an anomalous pancreatobiliary junction (APBJ) where the pancreatic duct and bile duct connect 1-2 cm proximal to the sphincter of Oddi. In adults, the presentation is usually nonspecific and vague, with abdominal pain being the most common symptom. Surgical resection of cysts can significantly decrease the risk of malignancy and reduce associated complications. However, less attention has been paid to CC in adults, and its surgical parameters have been reported to be frequently controversial. This manuscript describes the clinical case of a Todani II choledochal cyst managed with surgical resection by laparotomy with Roux-en-Y biliodigestive reconstruction, obtaining satisfactory results.

Keywords: Choledochal cyst, Roux-Y, Todani classification

INTRODUCTION

Choledochal cysts are congenital dilatations of the biliary tree that can be extrahepatic and/or intrahepatic. They are rare with an incidence that varies from 1 in 100,000-150,000 live births in Western populations, to 1 in 1,000 in some Asian populations.[1]

Alonso - Lej et al published the first systematic description of choledochal cysts, based on clinical and anatomical findings in 96 cases in 1959. They classified choledochal cysts into three types and described therapeutic strategies for each. This classification was further refined by Todani and colleagues, who included five main types and several subtypes.[2,3]

The Todani classification was described in 1977 and is used until today, it divides them as follows: Type I (75-85%) involve fusiophomal dilatation of the common bile duct; Type II (2-3%) supraduodenal diverticulum extrahepatic; Type III (1.4-5%) is intraduodenal diverticulum; Type IV (10-19%) represent intrahepatic and extrahepatic dilation of the bile ducts (type IVa) or multiple cysts limited to the extrahepatic bile duct (type IVb). Type V CC (Caroli 's disease) refers to multiple segmental intrahepatic cystic biliary dilatations.[3]

Surgery is the treatment of choice to avoid the risk of complications such as pancreatitis, choledocholithiasis or cholangiocarcinoma and includes complete excision of the cyst (including the gallbladder) with biliary- enteric reconstruction.[4]

CASE REPORT

Female patient 26 with no pathological personal history. Surgical history of a cesarean section. He was admitted to our hospital unit due to a clinical picture of 2 years of

evolution with transfictive abdominal pain in the epigastrium 7/10 VAS irradiated to the right hypochondrium and to the back in the hemibelt, nausea and vomiting of gastro-alimentary content, 1 month later evacuations decreased in consistency and increased of frequency receiving treatment with proton pump inhibitor, antibiotic and antispasmodic without improvement, later with intolerance to the oral route. A simple CT scan of the abdomen was performed, showing the head of the pancreas of normal size, in topography of the main duct an image of a unilocular cystic appearance without septa of 61x58x93 with a slightly irregular thin wall and with enhancement to the application of contrast medium, Cholangioresonance reported cystic dilatation of the common bile duct in its supra and retroduodenal portions with measurements of 96 x x62 x63mm.

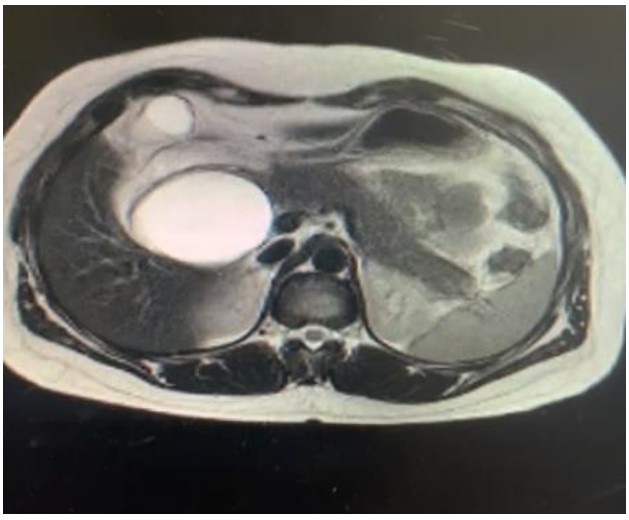

Figure 1: Cholangioresonance axial cut with cystic dilatation of the common bile duct with measurements of 96x62x63 mm.

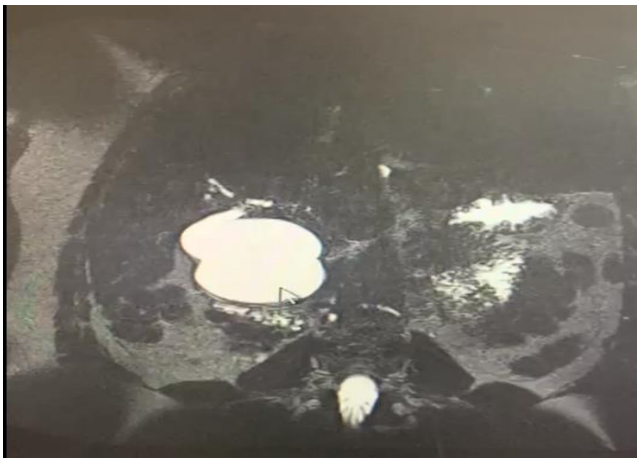

Figure 2: Cholangioresonance in coronal section showing cystic dilatation of the common bile duct in its supra and retroduodenal portions with measurements of 96x62x63 mm (arrow).

Todani II choledochal cyst was diagnosed, for which surgical intervention was decided for its resection. Intervened with a Chevron - type wound approach, dissected up to the abdominal cavity, initiating dissection with the Kocher maneuver, a Todani II choledochal cyst of 10 x 10 cm was identified up to 1 cm of hilar plate, gallbladder bed was dissected and cystic artery ligated, influx was identified from the cystic duct to the cyst, the common bile duct is dissected 1 cm below the hilar plate, a piece is extracted. Roux- en-Y bilioenteric reconstruction was performed at 60 cm from the end-to-side angle of Treitz. The reported surgical findings are: Type II choledochal cyst of 10x10 cm up to 1 cm of hilar plate, gallbladder of 7x2 cm and cystic of 5mm.

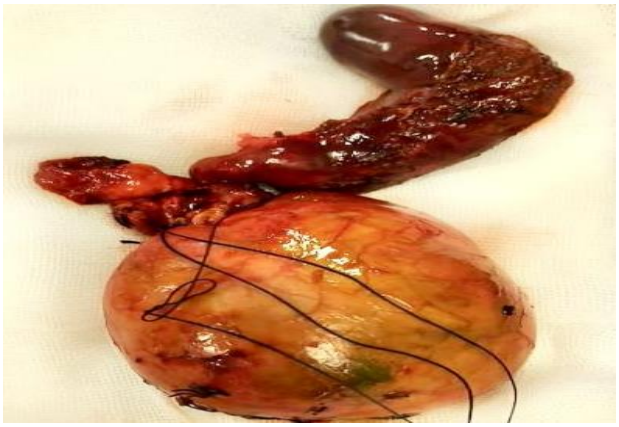

Figure 3: Surgical piece showing gallbladder and choledochal cyst at their confluence.

During the post- surgical period , the patient progressed with adequate evolution, laboratory study within normal parameters , adequate tolerance of the oral route, so she was discharged due to improvement and adequate evolution at 1 and 2-year follow-up. The pathology report reported type A choledochal cyst, chronic and acute edematous cholecystitis, cystic lymph node with reactive mixed hyperplasia, negative for neoplastic cells.

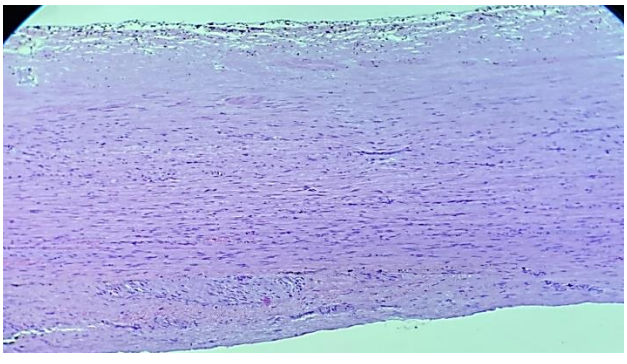

Figure 4: Histological section of the choledochal cyst wall with hemotoxylin and eosin staining, 5x magnification, made up of fibroconnective tissue and smooth muscle.

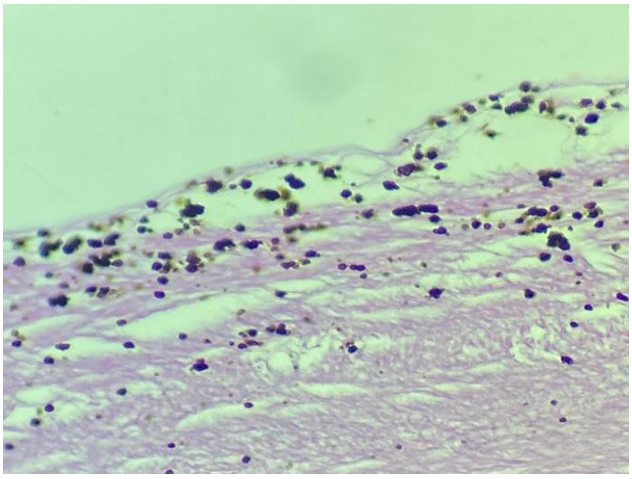

Figure 5: Close-up Magnification 40x where the epithelium of the sphacelated cyst with biliary pigment is visualized, hematoxylin and eosin staining.

DISCUSSION

The etiology of CHDs is an ongoing debate with supporters of both the congenital and acquired theories. The most frequently proposed theory is the Babbitt theory, where CCs are assumed to be caused by an APBDJ in which the pancreatic duct joins the bile duct 1-2 cm proximal to the sphincter of Oddi. The common canal length varies from 10-45 mm with different authors. This long common canal allows reflux of pancreatic juice into the biliary system and causes an increase in pressure within the common bile duct, causing the duct to dilate.[5]

This theory is supported by the finding of high levels of amylase in the bile of CCs. Pancreaticobiliary reflux also leads to inflammation, epithelial breakdown, mucosal dysplasia, and malignancy. Few authors also reported high levels of trypsinogen and phospholipase A2 in the bile of CCs, which increases inflammation and rupture of the bile ducts. However, some authors question this theory because APBDJ is seen in only 50% to 80% of CC cases, and CCs detected prenatally do not have reflux of pancreatic juice and neonatal acini do not secrete enough pancreatic enzymes.[5-6]

The triad of intermittent jaundice, abdominal mass, and pain is found in only a minority of patients. Adults tend to have complications such as cholangitis, choledocholithiasis, pancreatitis, and malignant transformation, while children are more likely to have an abdominal mass and jaundice. Double common bile duct (CBD), sclerosing cholangitis, congenital liver fibrosis, Pancreatic cyst and annular pancreas are some associated congenital anomalies.

The increased risk of malignancy in CC is well known. The reported incidence ranges from 2.5-17.5% in patients with CHD. Visser et al reported 21% in their series of 38 adult patients. The incidence of malignancy increases with age, it is assumed to be from 0.7% in the first decade of life to 14.3% after 20 years of age, which means that early diagnosis and treatment have a positive outcome. favorable.[5-6] Malignancy occurs as a result of chronic inflammation, cell regeneration, and DNA breaks leading to dysplasia. Pancreatic reflux is also thought to cause K-ras mutation, cell atypia, P53 overexpression, and carcinogenesis. Malignancy is seen in the extrahepatic duct in 50% to 62% of patients, in the gallbladder in 38% to 46% of cases, in the intrahepatic duct in 2.5% of cases, and in the liver and pancreas in approximately 0.7% of cases. Todani et al. observed 68% malignancy in type I, 5% in type II, 1.6% in type III, 21% in type IV and 6% in type V CC.[6]

Type II CC is treated by complete but limited excision of the cyst. Resection of the extrahepatic bile duct may only be necessary in the case of a large neck of the cyst at its junction with the common bile duct and is not routinely recommended. In the presence of APBDJ, the patient is at risk of malignancy in both the gallbladder and bile duct, and prophylactic gallbladder excision is recommended.[7]

CONCLUSION

Choledochal cysts are an infrequent pathological entity with a higher prevalence in childhood, the benefit of early identification and treatment lies in the risk of malignancy that increases over the years. Complete excision of the cyst is the treatment of choice for the extrahepatic component of the disease.

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