Surgical Treatment of Choledocal Cyst with Choledocolithiasis

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Abstract
Choledochocele is also known as Todani type III cyst or intraduodenal diverticulum and represents only 4% of all choledochal cysts. It is defined as a cystic dilatation of the distal intramural portion of the common bile duct protruding into the duodenal lumen. It remains an uncommon anomaly of the biliary tract with small malignant potential. Definitive treatment of the choledochocele can be carried out operatively or by endoscopic sphincterotomy.

We report a case of a 39 year old female patient on whom we successfully performed surgery with a Roux-en-Y hepatico-jejunostomy.

Keywords: Choledochal Cyst; MRCP; ERCP; Hepaticojejunostomy

Introduction
Choledochocele or type III choledochal cyst is defined as a congenital cystic dilatation of the distal intramural portion of the common bile duct protruding into the duodenal lumen [1,2].

Most of the reported cases in the world come from Asia but it is not uncommon in Africa or in the western world [2]. The clinical presentation is variable, ranging from simple biliary colic to severe forms of pancreatitis [3]. Cross-sectional imaging, endoscopic ultrasound, and endoscopic retrograde cholangiopancreatography are useful for diagnosis.

Given the risk of malignant transformation, complete resection of the extra hepatic bile duct is the accepted management of choledochal cyst [4].

Case report
We report the case of a 39 year old female patient without significant past medical history, admitted in the department of general surgery in the habib thameur hospital of tunis, for non severe acute cholangitis.

In physical examination, she had fever (38°C) a conjunctival jaundice and tenderness to palpation in the right upper quadrant.

Laboratory blood tests revealed a leukocytosis of 22000/mm³, C-reactive protein of 150 mg/L, bilirubine of 30 µmol/L and PT activity of 80%.

The abdominal ultrasound showed a dilatation of both the extra- and intra-hepatic bile ducts with no detectable obstacle.

The CT scan showed a cystic structure at the second portion of the duodenum in the surrounding area of the ampulla of Vater (Figure 1).

An MRCP, performed as a complementary test, confirmed the findings revealing the choledochocele filled with calculi as well as the dilatation of both extra- and intra-hepatic bile ducts. It also showed an obstructing stone of the distal end of the choledochus (Figure 2).

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ERCP was performed displaying the same findings. However the stones failed to be removed after sphincterotomy and biliary clearance was not achieved according to the cholangiogram.

Management involved removal of the CBD including the choledochocele (Figure 3) and reconstruction of the biliary tree carried out with a Roux-en-Y hepaticojejunostomy. The patient recovering was uneventful and pathological examination confirmed the condition.

**Conclusion**

According to this case, Choledochocele is indeed difficult to diagnose in clinical practice. MRCP and ERCP remain the best available diagnostic tools [2,5].

Coexistent choledocholithiasis, like our case, is observed in about 20% of Todani type III cysts [6]. It has also been suggested that the stones observed in 20% of cases of choledochoceles develop in the common bile duct due to bile stasis and not in the gallbladder where stones are only observed in 12-30% [6].

The endoscopic approach is a reliable option for conservative treatment subject to regular follow up given the malignancy potential of this condition. The radical treatment remains surgical.

**References**