CASE REPORT

Common Bile Duct Cyst: About an Observation and Review of the Literature

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ABSTRACT

The authors report a case of a common bile duct cyst in a 19-year-old patient referred for the management of chronic pain in the right hypochondrium, without other associated symptoms. The abdominal computed tomography scan revealed a bile duct cyst confirmed by abdominal magnetic resonance imaging (MRI) (type 1c according to Todani). Laparotomy had revealed a common bile duct cyst. The procedures consisted of a resection of the main bile duct and cholecystectomy + hepatico-jejunal anastomosis (Roux-en-Y method). The anatomopathological examination had shown a fibrous-walled bile duct cyst with epithelial hyperplasia and dysplasia without signs of malignancy. The post-operative follow-up was simple and the return home had taken place on the 7th postoperative day. The patient had been seen for routine check-up 51 days after surgery. She was in apparent good health without particular complaints.

Key words: Cholecystectomy, common bile duct, cyst, roux-en-Y.

INTRODUCTION

Common bile duct cyst is a rare abnormality that corresponds to saccular or spindle-shaped dilation of the main bile duct.[1] Its incidence in western populations ranges from 1/100,000 to 1/150,000 while it is considerably higher in Asians (approximately 1/ 13,000).[2] This pathology is not as rare in Africa as it's claimed.[3]

At present, the most widely used classification is that of Todani [Figure 1].[4] The diagnosis is made easy by modern imaging means, biliary-MRI.[5]

To avoid complications from incomplete cystic excision and minimize the need for reoperation, the current surgical strategy consists of a complete resection of the entire cyst (including the gallbladder), followed by restoration of enterobiliary continuity.[2]

CASE REPORT

Mrs F.N.S., is a 19-year-old patient with no particular pathological history, received on December 24, 2018 for the management of pain in the right hypochondrium which has been evolving since 1 month. She had an abdominal ultrasound and an abdominal computed tomography (CT) scan. On examination, the patient was in good general condition, with anicteric mucous membranes, and the constants were normal. The abdomen was supple, not tender, but with slight hepatomegaly with regular contours.

The abdominal ultrasound of November 13, 2018 concluded in moderate heterogeneous hepatomegaly, a cystic mass of 4.5 cm (pancreatic?) and peritoneal effusion. The abdominal CT scan carried out on November 16, 2018 showed minimal homogeneous hepatomegaly with dilation of the intrahepatic bile ducts and common bile duct and moderate peritoneal effusion and cholangitis-like inflammation without ruling out a bile duct cyst [Figure 2]. Hepatobiliary MRI performed on January 11, 2019, found a bile duct cyst classified type 1c of Todani [Figure 3].

After midline laparotomy, we performed a complete resection of the entire cyst (including the gallbladder), followed by restoration of enterobiliary continuity with

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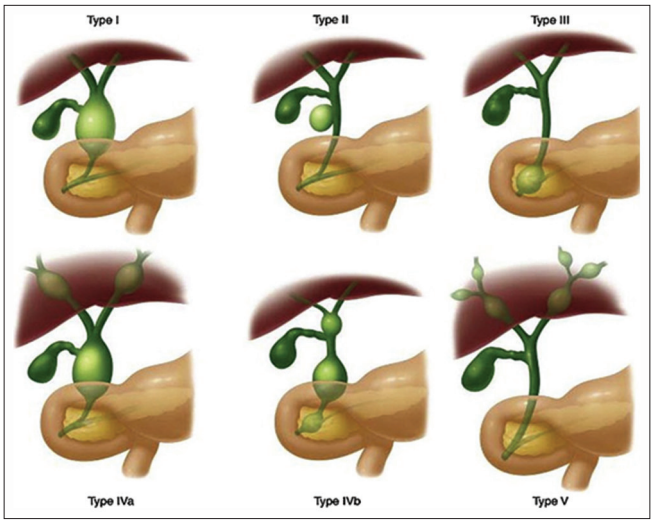

Figure 1: Classification of bile duct cysts by Todani[4]

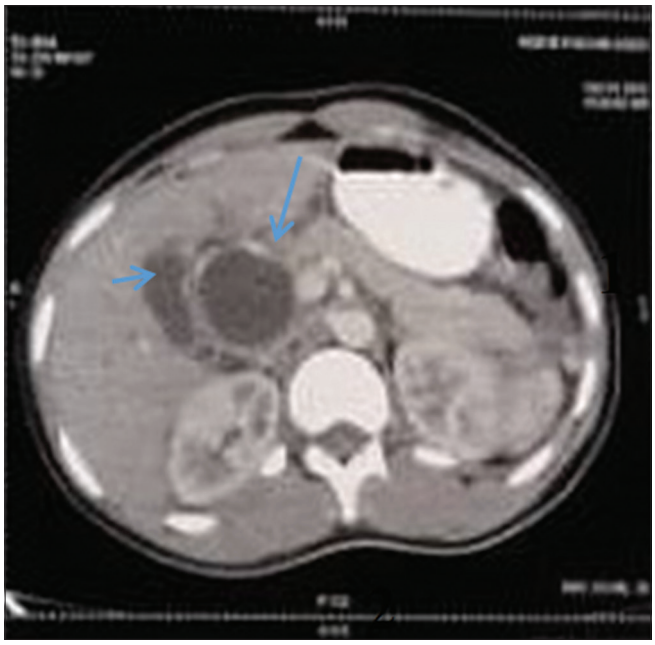

Figure 2: Abdominal computed tomography cross section visualizing the bile duct cyst (1) Dilated common bile duct (2) Gall bladder

hepatico-jejunal anastomosis (Roux-en-Y method) [Figure 4]. Post-operative care consisted of antibiotics, analgesia, and bandages. The anatomopathological examination had shown a fibrous-walled bile duct cyst with epithelial hyperplasia and dysplasia without signs of malignancy [Figure 5]. The post-operative follow-up was simple and the return home had taken place on the 7th post-operative day. The patient had been seen for routine check-up 51 days after surgery. She was in apparent good health without particular complaints. Six months follow-up found no evidence of ascending cholangitis or anastomosis stenosis.

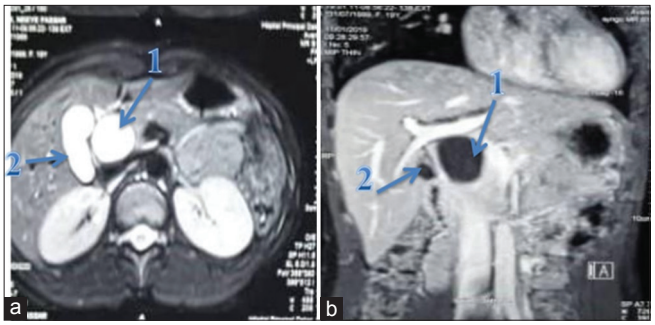

Figure 3: Abdominal magnetic resonance imaging Signal T1 (a) and T2 (b) showing bile duct cyst (1) Bile duct cyst (2) Gall bladder

DISCUSSION

The common bile duct cyst is rare, but it is the most common of the caliber of the main bile duct. Yamaguchi, in his review of Japanese literature, reports a frequency of 1.4%.[6] Studies have shown a higher incidence in the Asian population (1/13,000) than in the West (1/100,000 to 1/150,000).[2,7] In Africa, Bankole *et al*. affirm that the pathology is not as rare as it is claimed: Publications are poor on this subject and diagnosis is often difficult due to its clinical polymorphism.[3]

Although diagnosed predominantly in children, bile duct cysts are increasingly common in adults, so adults constitute the majority of patients in recent series. The sex ratio is predominantly female (approximately 4:1), in both adults and children.[2] Our patient was 19 years old and female. Her late diagnosis was probably due to the fact that she remained asymptomatic for several years.

Bilary-MRI currently makes the diagnosis easier and allows the classification of the pathology.[4]

Alonso-Lej *et al*. proposed the first system of classification of bile duct cysts in 1959. This initial classification identified four types (types I to IV). In 1977, Todani *et al*. modified it by adding a fifth category (bile duct cysts type V or Caroli disease).[7]

The specific approach to treatment depends largely on the type of cyst, but usually aims to completely excise and restore enterobiliary drainage, either mainly in the duodenum or through Roux-en-Y hepaticojejunostomy. Surgery should be elective and patients medically optimized beforehand. Treatment of type I cyst (the most common) includes resection of the extrahepatic biliary duct and cholecystectomy with hepatico-enterostomy.[7]

Our patient, classified 1c by Todani, had benefited the same procedure described above. Left untreated, the most serious complication is bile duct cancer, which occurs in

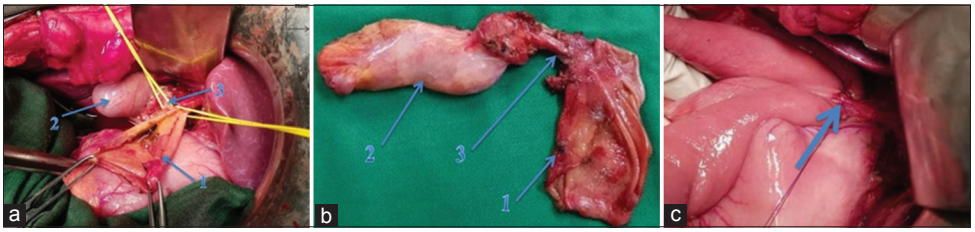

Figure 4: Some steps of the surgery. (a) Exposure of the common bile duct (arrow), after its opening and before its resection (we can observe the reclined liver and the gall bladder). (b) Surgical specimen (common bile duct, cystic duct, and gall bladder). (c) Roux-en-Y hepatico-jejunostomy (arrow), after resection removing the cyst, the cystic duct, and the gall bladder

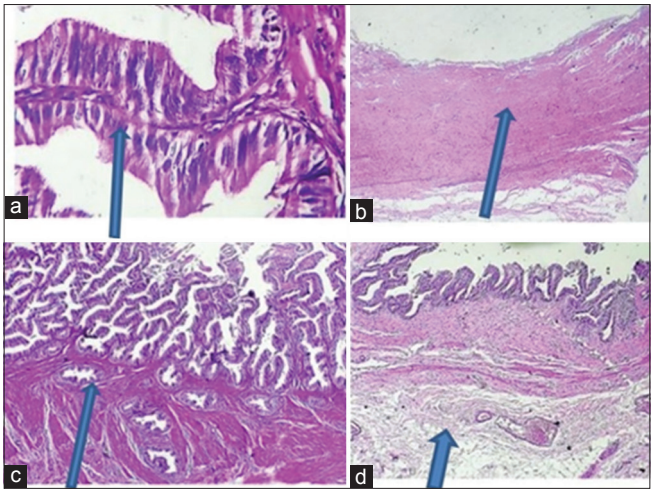

Figure 5: (a-d) Histopathological sections of the surgical specimen

3% of cases and the 2-year survival rate is 5%. If the cyst is diagnosed before 10 years, the incidence of neoplasias is 0.7%, increasing to 7% between 10 and 20 years, and to 14% after 20 years.[8] The other rare complication is spontaneous rupture of the cyst (1.8–7%); traumatic rupture is even rarer (with only few cases described).[9]

CONCLUSION

Bile duct cyst is a rare disease, diagnosed predominantly in children, and a sex ratio in favor of the female sex. In view of its clinical polymorphism, biliary-MRI is the examination of choice for the diagnosis with certainty. Not taken care of, it very often progresses to cancerization, and rarely to ruptures (spontaneous or post-traumatic).

REFERENCES

1. Crozier F, Hardwisgen J, Jaoua S, Charrier A, Aillaud S, Bourlière B, *et al*. Kyste du cholédoque avec dilatation congénitale du canal cystique: A propos de deux cas. Ann Chir 2003;128:459-61.
2. Ronnekleiv-Kelly SM, Soares KC, Ejaz A, Pawlik TM. Management of choledochalcysts. Curr Opin Gastroenterol 2016;32:225-31.
3. Bankole R, Bonkoungou B, N'guessan A, Mobiot L, Cornet L. Les dilatations kystiques congénitales du cholédoque-à propos de 3 cas. Méd Afr Noire 1997;44:8.
4. Khmekhem R, Zitouni H, Ben Ahmed Y, Jlidi S, Nouira F, Charieg A, *et al*. Traitement chirurgical des dilatations kystiques de la voie biliaire chez l'enfant. Résultats d'une série de 16 observations. J Pédiatr Puéric 2012;25:199-205.
5. Boukoffa S, Boudine L, Belaid M, Boukadoum N, Bala L, Ramtani H, *et al*. Kyste du conduit cholédoque à proposd'une observation. Morphologie 2018;102:175.
6. Safta ZB, Kacem H, Jouini M, Cherif A, Salah HH. Le choledococele: A propos d'1 cas responsable de pancréatite aiguë récidivante. Méd Chir Dig 1991;20:151-5.
7. Soares KC, Goldstein SD, Ghaseb MA, Kamel I, Hackam DJ, Pawlik TM. Pediatric choledochal cysts: Diagnosis and current management. Pediatr Surg Int 2017;33:637-50.
8. Couto JC, Leite JM, Machado AV, Souza NS, Sylva MV. Diagnostic anténatal du kyste du cholédoque. J Radiol 2002;83:647-9.
9. Bouali O, Trabanino C, Abbo O, Destombes L, Baunin C, Galinier P. Péritonite biliaire par rupture traumatique d'un kyste du cholédoque. Arch Pédiatr 2015;22:763-6.

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