AG-2021-77
doi.org/10.1590/S0004-2803.202100000-73

Laparoscopic management of giant choledochal cyst with intrahepatic lithiasis

Andre Roncon **DIAS**, João Emilio Lemos **PINHEIRO FILHO**, Fernanda Cavalcanti Cabral **HONORIO**, Miller Barreto de Brito e **SILVA**, Daniel Jose **SZOR** and Francisco **TUSTUMI**

Received: 1 April 2021
Accepted: 20 May 2021

Biliary cysts consist of unique or multiple dilations of the biliary tree. They may be intra-/extra-hepatic or both. Its incidence is higher in Asian countries (1:10,000) and its more common in females (4:1)[1-4]. While most are diagnosed at the first decade of life, it may be found in adults increasing the risk for lithiasis, pancreatitis and cancer[5]. Due to this, surgical resection is mandatory and only few articles address minimally invasive approach in these lesions, and they usually report it in children[6]. Here we present the video of the laparoscopic management of a 31-year-old female who presented upper abdominal pain, jaundice, dark urine and pale stool for 2 weeks. Canalicular enzymes and direct bilirubin were elevated, MRI showed cystic dilation of the extra- and intra-hepatic biliary tree starting above its pancreatic portion associated with severe lithiasis (FIGURE 1). Endoscopic retrograde cholangiopancreatography was performed, and two plastic prosthesis located with only slight reduction of the serum bilirubin levels (FIGURE 1).

Patient was referred to our service and laparoscopic resection of the choledochal cyst with intra-hepatic clearance of the lithiasis and Roux-en-Y hepaticojejunostomy proposed (E-VIDEO*).

The patient was placed in supine position with legs open, trocars positioned as demonstrated in (FIGURE 2). The monitor stayed and the patient`s right shoulder and the surgeon operated between the legs. Dissection was difficult due to the cystic size, its stiffness (full of stones) and intense inflammatory adhesions to the surrounding structures. After freeing the hepatic artery and portal vein, the choledochal was sectioned with a stapler just above its pancreatic portion, the distal portion was cleared and washed, then closed. Cholecystectomy was performed en bloc with the cyst and the common hepatic duct sectioned. Secondary hepatic ducts were cleared and then a hepaticojejunostomy in Roux-in-Y fashion performed. Anastomosis was hand-sewn with 3-0 polidioxanon and a drain left. The enteric anastomosis was performed with linear stapler. Surgery duration was 260 minutes and bleeding estimated

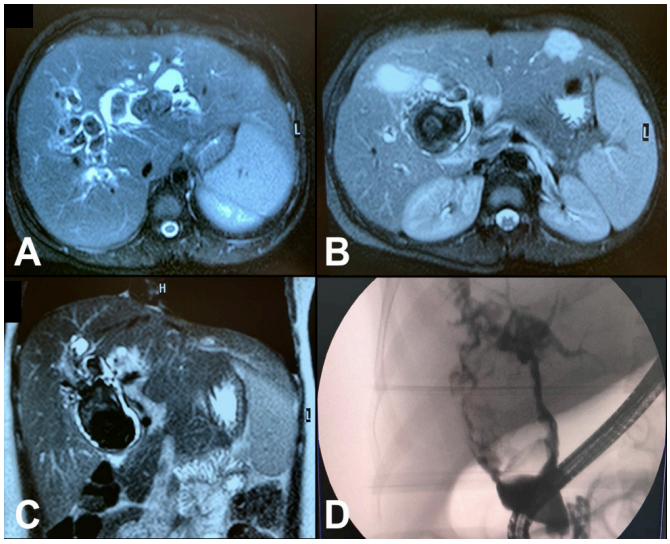

FIGURE 1. Pre-operative imaging. **A.** Intra-hepatic biliary tree dilatation with multiple hyperdensal images suggesting lithiasis. **B.** Extra-hepatic biliary tree dilatation. **C.** Extra-hepatic biliary tree dilatation, coledochal cyst and coledocolithiasis. **D.** Endoscopic retrograde cholangiopancreatography showing choledochal cyst and choledocolithiasis.

Declared conflict of interest of all authors: none
Disclosure of funding: no funding received
Hospital Municipal de Clínicas de São Bernardo do Campo, São Paulo, SP, Brasil.
Corresponding author: Andre Roncon Dias. E-mail: andre.dias@hc.fm.usp.br
***E-VIDEO: https://youtu.be/GeRrlh-7LZo**

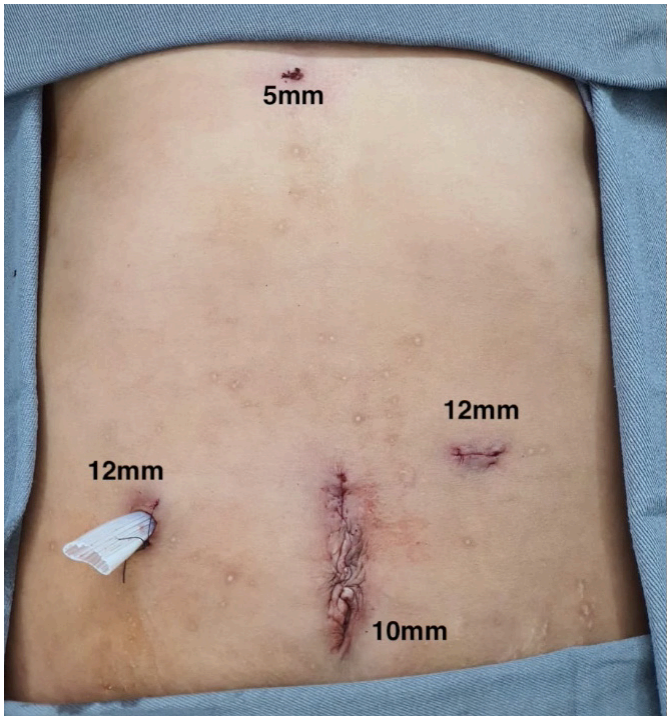

FIGURE 2. Portal placement. The umbilical port was extended for specimen removal.

in 50 mL. Postoperative was uneventful and she was discharged without drain at postoperative day 5. Follow-up at this time is in 1 year and she remains asymptomatic with only mild elevation of canalicular enzymes (FIGURE 3). This video shows the different steps (E-VIDEO) necessary to perform this complex operation.

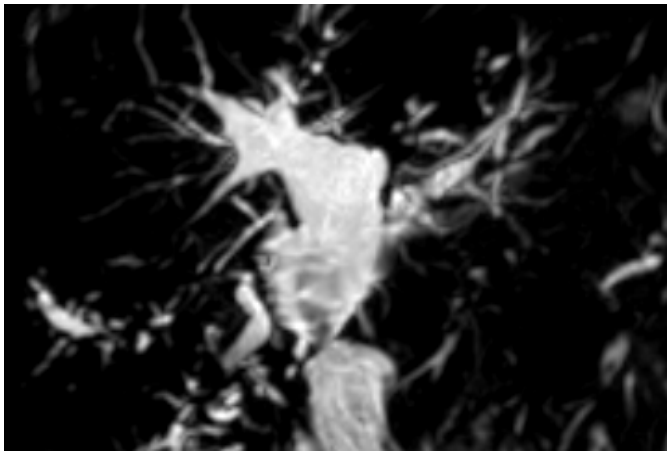

FIGURE 3. Control MRI control, that shows reduction of intra-hepatic biliary tree dilatation, absence of lithiasis and Roux-en-Y biliodigestive anastomosis without signs of stenosis.

Authors' contribution

Dias AR: conceptualization, writing, preparation of the original, supervision. Pinheiro Filho JEL: data collection, writing, review and editing. Honorio FCC: research and methodology. Silva MBB: data collect. Szor DJ: writing, preparation of the original. Tustumi F: project management, writing, proofreading and editing.

Orcid

Andre Roncon Dias: 0000-0003-3378-4916.
João Emilio Lemos Pinheiro Filho: 0000-0002-9329-7362.
Fernanda Cavalcanti Cabral Honorio: 0000-0003-1688-8369.
Miller Barreto de Brito e Silva: 0000-0002-4206-4243.
Daniel Jose Szor: 0000-0002-9727-9241.
Francisco Tustumi: 0000-0001-6695-0496.

Dias AR, Pinheiro Filho JEL, Honorio FCC, Silva MBB, Szor DJ, Tustumi F. Manejo laparoscópico de cisto de colédoco gigante associado a litíase intra-hepática. Arq Gastroenterol. 2021;58(3):415-6.

Keywords – Choledochal Cyst; common bile duct diseases; common bile duct; choledocholithiasis; bile ducts; intrahepatic; laparoscopy; Roux-en-Y anastomosis.

Palavras-chave – Cisto do Colédoco; doenças do ducto colédoco; ducto colédoco; coledocolitíase; ductos biliares intra-hepáticos; cirurgia laparoscópica; anastomose em-Y de Roux.

REFERENCES

1. O'Neill JA, Jr. Choledochal cyst. Curr Probl Surg. 1992;29:361-410.
2. Nicholl M, Pitt HA, Wolf P, Cooney J, Kalayoglu M, Shilyansky J, et al. Choledochal cysts in western adults: complexities compared to children. J Gastrointest Surg. 2004;8:245-52.
3. Alonso-Lej F, Rever WB, Jr., Pessagno DJ. Congenital choledochal cyst, with a report of 2, and an analysis of 94, cases. Int Abstr Surg. 1959;108:1-30.
4. Todani T, Watanabe Y, Narusue M, Tabuchi K, Okajima K. Congenital bile duct cysts: Classification, operative procedures, and review of thirty-seven cases including cancer arising from choledochal cyst. Am J Surg. 1977;134:263-9.
5. Soreide K, Korner H, Havnen J, Soreide JA. Bile duct cysts in adults. Br J Surg. 2004;91:1538-48.
6. Soreide K, Soreide JA. Bile duct cyst as precursor to biliary tract cancer. Ann Surg Oncol. 2007;14:1200-11.