Duplicate cystic duct: A case report

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Raíssa Paes Francino
General surgery resident at Hospital e Marternidade São José

Eduarda Gomes Martins
General surgery resident at Hospital e Marternidade São José

Abraão Rodrigues Valentim do Prado
General surgery resident at Hospital e Marternidade São José

Mirelly Aparecida Nolasco Frinhani

Marcielle Grobério Franzin

Maria Eduarda Almagro Rosi

Paula Gomes Martins

Lívia Herundina Pontara de Vasconcelos
General surgeon, oncology surgery resident at Hospital e Maternidade São José

ABSTRACT

INTRODUCTION: The cystic duct is one of the bile ducts responsible for the conduction of bile and together with the common hepatic duct make up the cystohepatic trine. The accessory hepatic ducts are those that have undergone anatomical variation and evaginate out of the liver. An example of this is the double cystic duct that presents with an incidence of 1 in 4,000 to 5,000 people. This duplication is classified as an exceptional surgical finding, and its diagnosis, for the most part, is made during surgery. It can even lead to iatrogenic lesions. This fact is justified mainly because its symptomatology is indistinguishable from cases in which there is no variation. CASE PRESENTATION: Patient V.M.S.N, 47 years old, complained of asthenia and epigastric pain for about two years. In consultation with the gastroenterologist, Upper Digestive Endoscopy was requested, which identified positivity for Helicobacter Pylori, hiatal hernia and moderate enanthematous gastritis. The patient was submitted to clinical treatment, but was unsuccessful. Upon returning to the doctor, a Total Abdomen Ultrasound was requested, which exposed mild hepatic steatosis, calculus in the left kidney, and cholelithiasis. Thus, she was referred to the general surgery outpatient clinic and laparoscopic cholecystectomy was indicated. During the surgical procedure, three structures confluent to the gallbladder were identified, opting for intraoperative cholangiography, which showed the presence of an accessory cystic duct. In view of the above, the cystic duct, accessory duct and cystic artery were repaired, and they were ligated. DISCUSSION: It is noted that this is an uncommon anatomical abnormality and is a great challenge for surgeons, marking the risk of iatrogenic lesions during the procedure. Therefore, the preoperative diagnosis and elucidation with the performance of intraoperative cholangiography are extremely important in order to avoid complications. FINAL CONSIDERATIONS: The finding of accessory cystic duct is an atypical condition that exhibits clinical and radiological polymorphism and, therefore, of difficult preoperative diagnosis. Still, it was not observed in the literature the use of specific complementary tests that would lead to the early diagnosis of such pathology. Currently, the accurate diagnosis of cystic duct duplication is established intraoperatively in order to exclude lesions of the main biliary tract, which reduces the chances of the patient presenting complications, thus providing a better quality of life.

Keywords: Gallbladder, Cystic Duct, Anatomical Variation.

1 INTRODUCTION

The liver is the largest gland and the second largest organ in the human body, its weight is about 1,500 g and represents approximately 2.5% of the adult body weight. In addition to performing various metabolic activities, the liver secretes bile, a yellow-brown liquid that assists in the process of emulsifying fats. Bile leaves the liver through the right and left hepatic ducts, which join the cystic duct from the gallbladder to form the common bile duct. (MOORE et al., 2013)

Accessory or aberrant hepatic ducts are the collecting bile ducts of the intrahepatic triad that undergo evagination out of the liver, giving rise to the right and left hepatic ducts. This process occurs due to the anatomical variation of these triad ducts, which prolong and become extrahepatic. It is worth mentioning that in surgeries where there is presence of accessory ducts, if there is accidental injury, there is an accidental outflow of bile. (MOORE et al., 2013) Thus, for full diagnostic and therapeutic success, it is of paramount importance that the surgeon has a detailed knowledge of the extrahepatic bile ducts, as well as their variations, because the prompt recognition of certain pathologies makes surgical approaches more accurate and effective. (CACHOEIRAS et al., 2012)

An example of these variations is the duplication of the gallbladder, which can come with or without duplication of the associated cystic duct. This anatomical variation is a rare congenital anomaly, the incidence of which is approximately one in every 4000 to 5000 births. BOYDEN, et-al., 1926). It is also important to emphasize that structural changes in the cystic and hepatic ducts represent a great challenge for surgeons, since the absence of immediate knowledge of the morphology or outflow of the ducts can create confused ideas and increase the propensity to obstruct any of the ducts. (CACHOEIRAS et al., 2012).

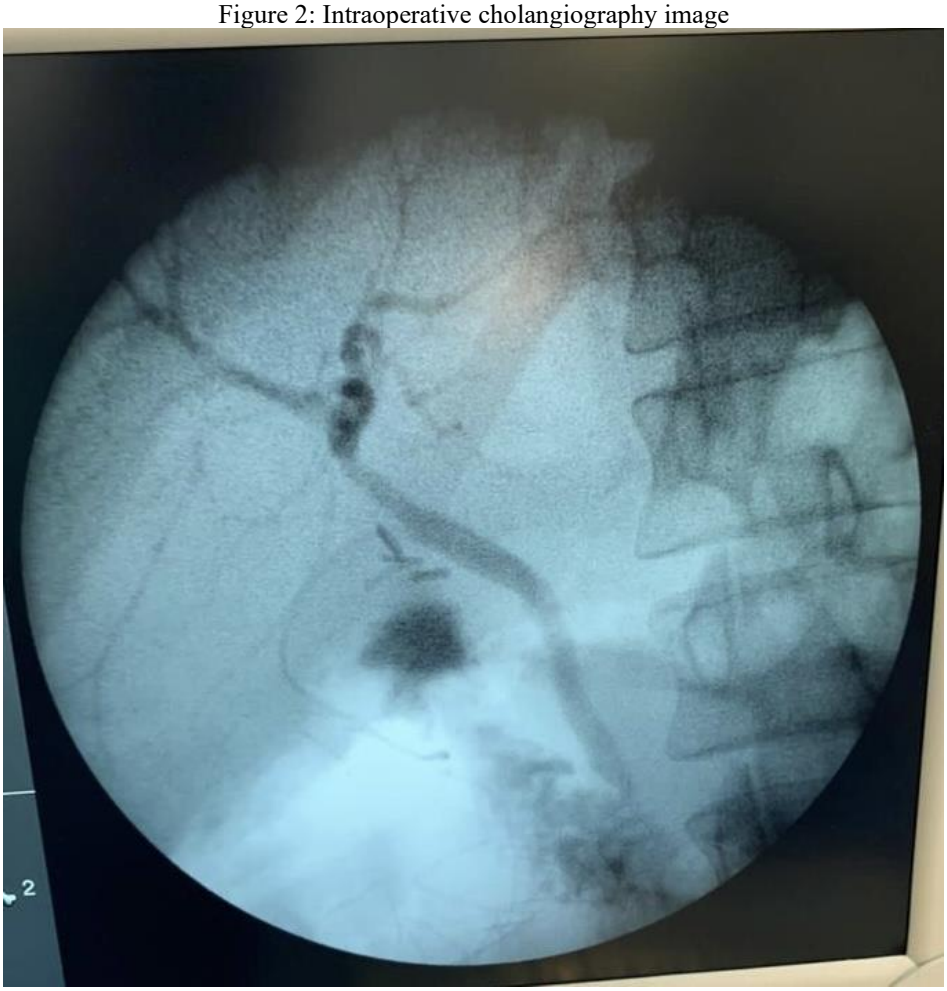
2 CASE REPORT

Patient V.M.S.N, 47 years old, complained of asthenia and epigastric pain for about two years, and therefore consulted with a gastroenterologist in the city of Iuna-ES. The same requested Upper Digestive Endoscopy that identified positivity for Helicobacter Pylori, hiatal hernia and moderate enanthematous gastritis (Figure 1). After clinical treatment with antibiotic use for Helicobacter Pylori, without success, he returned to the specialist who requested, in turn, Total Abdomen Ultrasonography that demonstrated mild hepatic steatosis, calculus in the left kidney and cholelithiasis - presence of mobile stones measuring up to 0.5 cm.

Figure 1: image showing cholelilithiasis - presence of mobile stones measuring up to 0.5 cm.

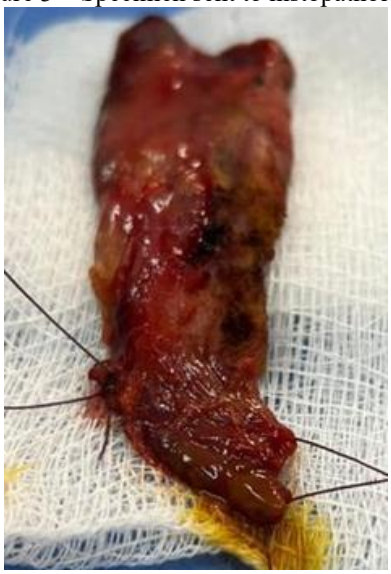
Laparoscopic cholecystectomy was then indicated due to the superiority of the technique compared to the conventional technique. In the procedure, the initial laparoscopy showed smooth-walled vesicle with no acute signs of cholecystitis and no other abnormalities. Dissection of the gallbladder pedicle was performed identifying three structures confluent to the gallbladder. Due to the inconclusive dissection, intraoperative cholangiography was chosen. On examination, the free main biliary tract and accessory cystic duct were evidenced (Figure 3).

Figure 2: Intraoperative cholangiography image



In view of what was found, the cystic duct, accessory and cystic artery were repaired and ligated. Finally, detachment of the gallbladder from the hepatic bed, revision of hemostasis and closure by planes, with sending of specimen for histopathological examination (Figure 4). The patient evolved with the usual postoperative period and after meeting all the criteria, he was discharged.

Figure 3 – Specimen sent to histopathology



3 DISCUSSION

Abnormalities of the bile ducts characterize a great challenge to surgeons, as well as may represent an increased risk of injury during cholecystectomy, due to the lack of immediate recognition of these variations. (CADURO, A.B et-al., 2014).

In 1929, Boyden described a system for classifying gallbladder duplications. Within this classification, it includes bilobated gallbladder, which contains a cystic duct and true duplication of the gallbladder. The latter, in turn, is subclassified into "type Y", grouping two cystic ducts that join before entering the common bile duct and "H-shaped" or "ductular type" that aggregates two cystic ducts that enter separately into the common bile duct. . (BOYDEN, et-al., 1926).

The most commonly used classification today was described by Harlaftis et al. It comprises type I, which includes a primordial septate, V-shaped, and finally Y-shaped gallbladder with two cystic ducts but draining into the common bile duct through a single common cystic duct; type II anomalies, the most common include accessory gallves, meaning there are two separate gallves, each with its own cystic duct draining independently into the common bile duct (type H) or with one of the cystic ducts draining into the right or left hepatic duct (trabecular type). (HARLAFTIS et-al., 1977).

The diagnosis of these abnormalities can be made during the preoperative act, by means of imaging tests, such as abdominal ultrasound and computed tomography. However, such screening is often not performed, since the symptomatology of a patient with double cystic duct is indistinguishable

from cases in which there is no duplication of the structure. Thus, most patients are referred for surgery without recognition of the anomaly. In the course of surgery, the surgeon should always perform an intraoperative cholangiography to make sure of the integrity of the main bile duct in order to avoid iatrogenic lesions.

During the surgery of the patient reported in this case, 03 structures were visualized in the pedicle of the gallbladder and intraoperative cholangiography was chosen to elucidate the picture. On examination, it was evidenced that the main biliary tract was free and that the patient presented an anatomical variation, with the presence of an accessory cystic duct. Then, the main cystic duct, the accessory and the cystic artery were repaired, and they were ligated. (CADURO, A.B et-al., 2014).

In this sense, it is observed the importance of establishing an accurate diagnosis of the accessory cystic duct in the operative act. Thus, even in the intraoperative period, the appropriate identification of anatomical variation is an appropriate approach that can prevent most iatrogenic lesions of the bile ducts. (CADURO, A.B. et-al., 2014).

4 FINAL CONSIDERATIONS

The finding of an accessory cystic duct is an atypical condition that clinical and radiological polymorphism and is therefore difficult to diagnose preoperatively. The literature has not yet revealed the use of specific complementary tests that would lead to an early diagnosis of this pathology. Currently, the of cystic duct duplication is established intraoperatively in order to exclude lesions of the main bile duct, which reduces the chances of the patient presenting complications, thus providing a better quality of life.

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