Double cystic duct

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Variation in cystic duct anatomy is quite common. However, a double cystic duct is extremely rare; only 9 cases have been reported. With more than 500 000 laparoscopic cholecystectomies performed annually, surgeon awareness of the many possible anatomic anomalies is necessary to minimize the risk of complications. We report a case of a woman who was found at elective laparoscopic cholecystectomy to have 2 separate cystic ducts exiting the gallbladder.

Case report

A 43-year-old woman had symptoms of biliary colic for 2 years. Ultrasonography demonstrated a 1.7-cm stone in the neck of the gallbladder, and an elective laparoscopic cholecystectomy was scheduled. Physical examination and laboratory tests, including those for liver function, gave normal results.

At laparoscopic exploration, the cystic duct was identified and a transcystic duct cholangiogram confirmed filling of the common bile duct with retrograde filling of the left and right hepatic systems (Fig. 1, left). The cystic duct was clipped and divided. Further dissection of the infundibulum revealed a separate, additional tubular structure emanating from the neck of the gallbladder. Repeat cholangiography through this structure (Fig. 1, right) showed immediate filling of the right hepatic system with antegrade filling of the left hepatic and common bile ducts. The accessory cystic duct was ligated and transected, and the remainder of the laparoscopic cholecystectomy was performed routinely. The patient was discharged on the day of surgery and had an uncomplicated postoperative course. Gross pathological examination confirmed 2 separate cystic ducts exiting the gallbladder (Fig. 2).

Discussion

Variation in cystic duct anatomy is quite common. The standard relationship of

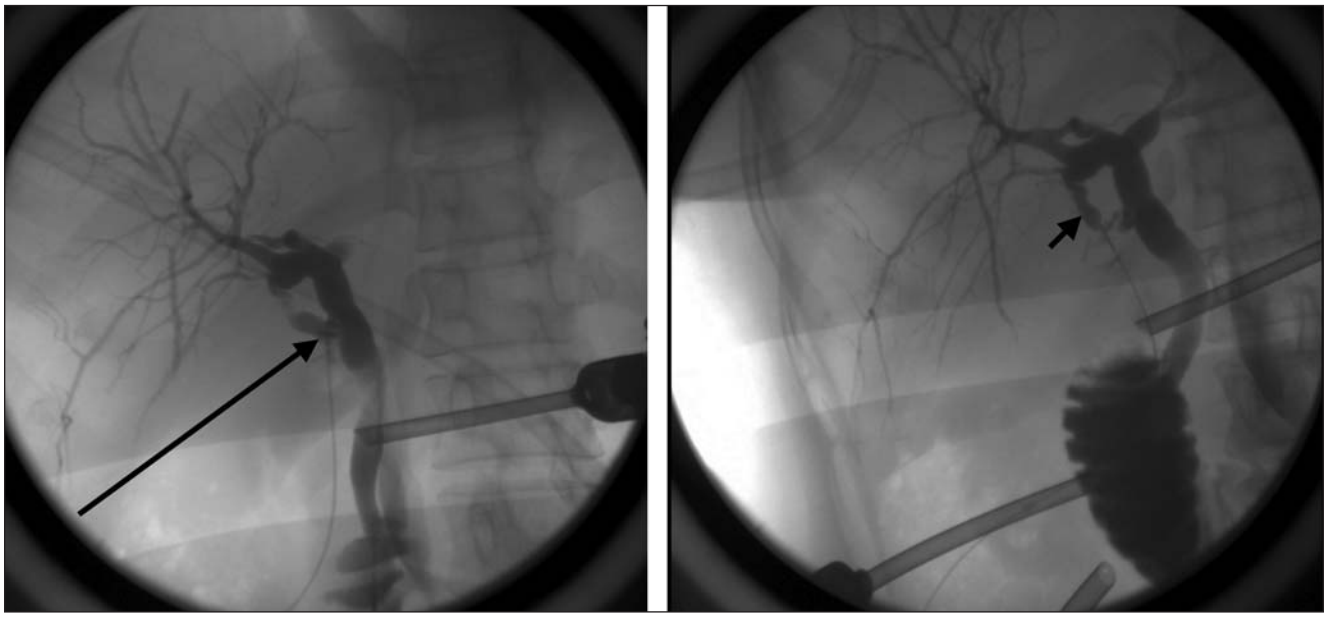

FIG. 1. Left: Initial transcystic duct cholangiogram (long arrow) confirms filling of the common bile duct with retrograde filling of the left and right hepatic systems. Right: Repeat cholangiogram through an additional tubular structure emanating from the neck of the gallbladder (short arrow) reveals a second cystic duct emptying to the right hepatic system with antegrade filling of the left hepatic and common bile ducts.

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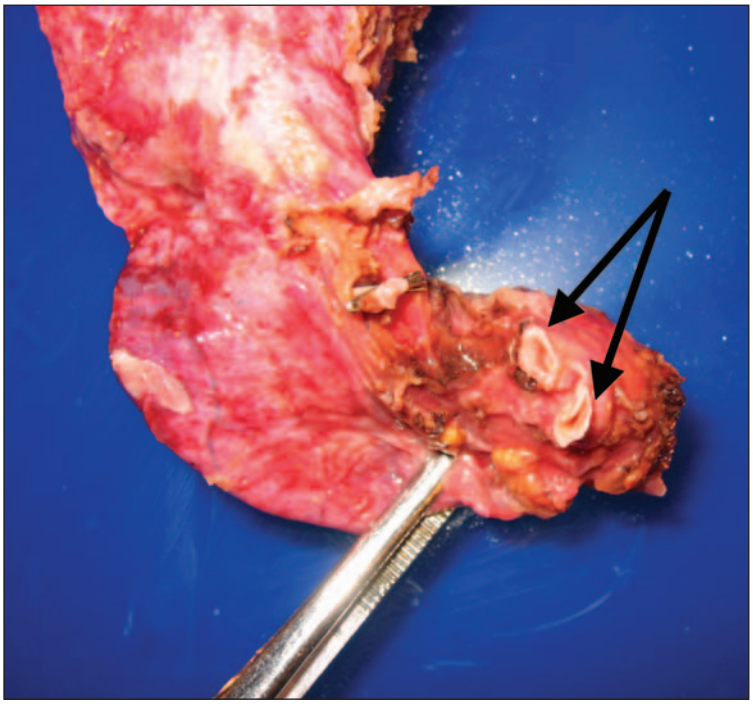

FIG. 2. Gross pathological examination shows the 2 separate cystic ducts (arrows).

cystic duct, extrahepatic bile duct and related arteries is present in only 33% of cases. However, a double cystic duct is extremely rare. Of the 9 case reports in the English and European literature, it is associated with a double gallbladder over 80% of the time. This variant has been classified into 3 types: the "Y" type, in which 2 cystic ducts meet to form a common channel; the "H" type, in which the accessory duct enters separately into the right, left or common hepatic duct; and the trabecular type, in which the accessory cystic duct enters the substance of the liver directly.[1]

Blumgart and Hann[2] characterized the following biliary variations that may give the appearance of a double duct draining the gallbladder:

- drainage of segment VI into the cystic duct
- drainage of the right posterior sector duct into the cystic duct
- drainage of the distal right posterior sector duct into the neck of the gallbladder
- drainage of the proximal right posterior sector duct into the body of the gallbladder

When any one of these variations is suspected intraoperatively, cholangiography is recommended to better define the anatomy. With more than 500 000 laparoscopic cholecystectomies performed annually, surgeons must be aware of the many possible anatomic anomalies to minimize the risk of complications.

Competing interests: None declared.

References

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