LESS

Case Report

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Posterior sector biliary duct injury during laparoscopic cholecystectomy: Case report

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ABSTRACT

Biliary injuries are common after a cholecystectomy. One of the most important reasons for biliary injury during laparoscopic cholecystectomy (LC) is variant anatomy of the extrahepatic bile duct. Described in this report is a rare complication of a LC that included a posterior right sectoral duct injury. A 45- year-old woman was referred with peritonitis, including a large quantity of fluid in the abdomen. She had undergone an LC at a state hospital 14 days before the referral. Pouchography revealed a connection between the site of fluid collection and the posterior sector of the right main bile duct. An exploratory laparotomy revealed a dissected right posterior sector channel. A Roux-en-Y hepaticojejunostomy was constructed with no complication. Surgical experience, training, and maintaining a critical view toward safety are the most important factors to prevent bile duct injuries after LC. Care taken with anatomical variance of the extrahepatic biliary tree is also a key factor in the prevention of iatrogenic biliary injuries. Posterior sector injuries should be kept in mind; however, hepaticojejunostomy is a feasible method to overcome this potential complication after the elimination of any intra-abdominal infection.

Keywords: Injury; laparoscopic cholecystectomy; posterior sector.

Introduction

Biliary tract injuries are common complications after cholecystectomies. Especially these complications tend to be more frequent after laparascopic cholecystectomies (LC), with up to 3% of incidence.[1] One of the most important reason leading to biliary injury during LC is the variant anatomy of extrahepatic bile duct. Stewart-Way classification is the most useful classification for iatrogenic bile duct injuries after LC. Class IV injury, that reveals the mistaken right hepatic or a right sectoral duct as cystic duct, is the most frequent type of injury with 60% of total complications.[2] Careful dissection, enough exposure of Callot triangle, and knowledge of when to consultate to a hepatobiliary surgeon are the essentials of preventing bile duct damage.[3] We report a rare complication of a LC including a posterior right sectoral duct injury.

Case Report

Forty five years old woman, referred to our center with peritonitis including a large fluid collection in abdomen, visible on computerized tomography (CT) (Fig. 1a). She had a previous history of LC at a state hospital, which was performed 14 days before referral. Total white blood cell and total blood bilirubin levels were 8.8 µ/dL and 1.0 mg/dL respectively, which were inconsistent with clinical findings. General aspect of the patient was fine, and

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a percutaneous drainage was performed. The fluid collection consisted pure bile, so we planned to perform an endoscopic retrograd cholangiopancreatography (ERCP). Biliary leak was seen at the site of cystic duct stump on ERCP, and a 10 French biliary stent was inserted. With a 1 week follow-up, biliary drainage did not cease and a pouchography was performed via the percutaneous drain. Pouchography revealed a connection between the bile collection and posterior sector of the right main bile duct (Fig. 1b). An explorative laparatomy was performed and dissected right posterior sector was shown (Fig. 1c). A Roux N-Y hepaticojejunostomy (HJ) was constructed with no complication. The patient did not require an extra invasive treatment during follow up and postoperative control cholangiography was fine (Fig. 1d). Patient was discharged on the postoperative day 10 and there's no complication on the 3. month surveillance.

Discussion

Surgical practice, training and critical view of safety are the most important factors to prevent bile duct injuries after LC.[4] Anatomical variance of extrahepatic biliary tree is also a key factor for iatrogenic biliary injuries. The most seen variance is isolated right sectoral duct opening to either cystic duct or to common hepatic duct, as in our case (Fig. 1a).[5,6] Posterior sector was very close to cystic duct and it was inevitable to harm the posterior sector during previous LC. Critical view of safety and minimal dissection of fatty tissues of gallbladder is crucial on this aspect.

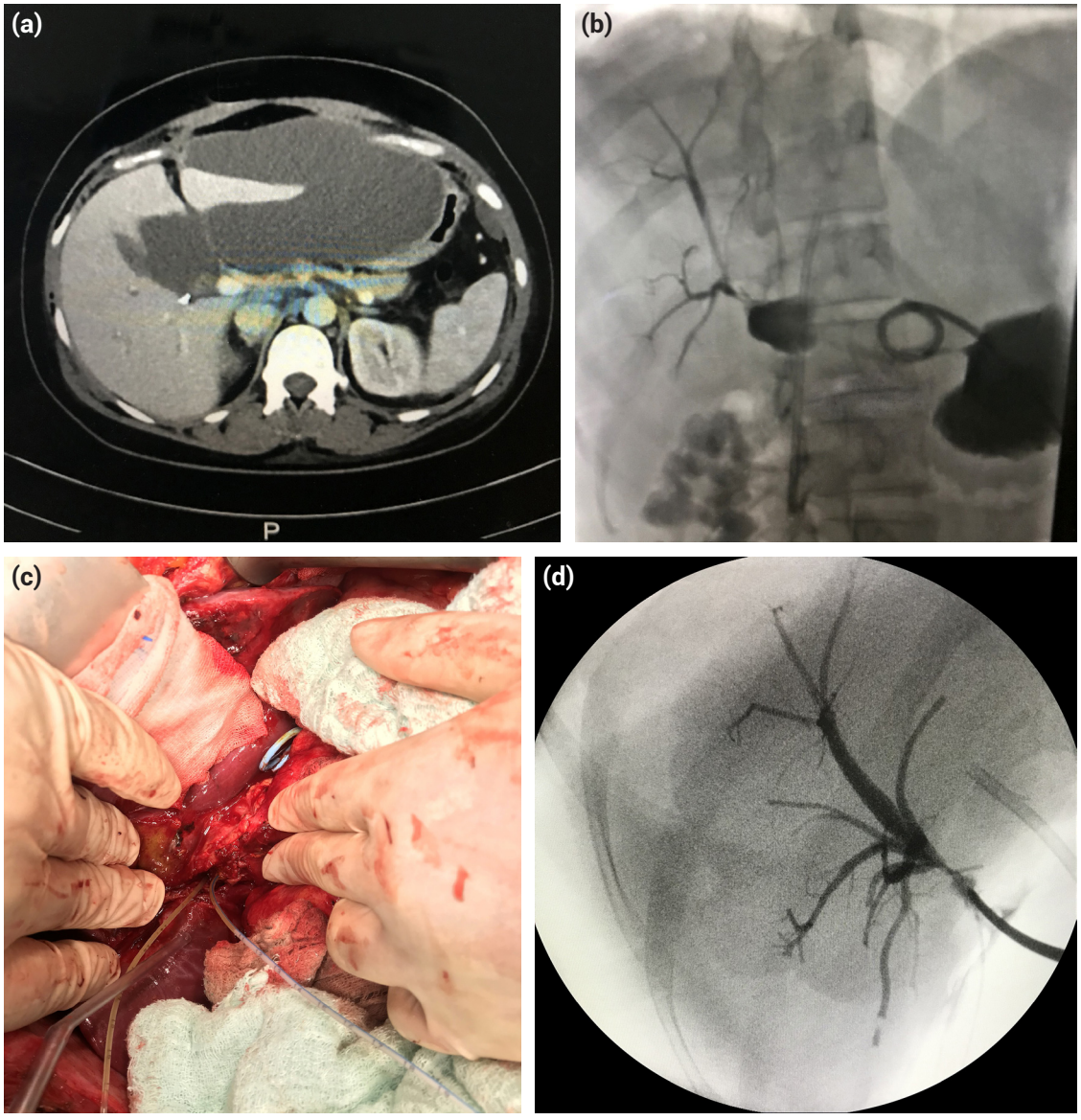

Figure 1. (a) Fluid collection at referral. **(b)** Connection between collection and bile duct. **(c)** Defect on posterior bile duct. **(d)** Postoperative cholangiography.

Preoperative magnetic resonance cholangio-pancreatography (MRCP) could be very useful for this anatomic entity. There are some reports that recommend MRCP,[7] or CT with drip infusion cholangiography before LC.[8]

Our patient had intraabdominal bile collection but she had normal bilirubin levels. So it has to be kept in mind that, normal bilirubin levels may not correlate with main bile duct injury.

ERCP revealed a defect on the biliary tree, but it can't support the leakage is on the cystic stump or main bile duct. So as in our case, a percutaneus pouchography can detect the bile duct defect, which is connected with the intrahepatic biliary tree.

Roux n-Y HJ procedure was compulsory and it was succesful. It is important to perform the second operation that includes the HJ, while there's no abdominal infection rather than operation time. There are reports that sign out the importance of intraabdominal infection rather than timing for HJ procedure for biliary tract injuries.[9,10]

Conclusion

Considering the anatomic variations of extrahepatic biliary tree is important. A peroperative imaging of biliary tree should be done especially in inflamatuary cholecystitis. ERCP may not provide a succesful continuity of defected biliary way, so a pouchography should be kept in mind. HJ is feasible at sectoral bile duct injuries after eradication of intraabdominal infections.

Disclosures

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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Conflict of Interest: None declared.

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