Torsion of Pedunculated Accessory Liver Lobe with Acute Acalculous Cholecystitis

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Abstract Accessory lobes of the liver are very uncommon and rarely symptomatic. We report the occurrence of torsion and infarction of a pedunculated accessory lobe of the liver with acute cholecystitis. The speculated possibilities of the coexistent pathologies and its management are discussed.

Keywords Torsion of liver lobe · Accessory liver lobe · Emphysematous cholecystitis · Acute cholecystitis

Introduction

Accessory lobes of the liver are an uncommon anatomical anomaly usually asymptomatic and found incidentally at surgery or autopsy. They usually present as projections from the surface of the liver in the vicinity of the gallbladder fossa or, very rarely, as isolated lobes. A case of torsion with infarction of a pedunculated accessory liver lobe associated with acute cholecystitis is discussed.

Case Report

A 32-year-old woman presented with 4-day right-sided abdominal pain with anorexia and nausea. She was febrile (38 °C), with localized tenderness and guarding present in the right upper quadrant.

Investigations revealed white blood cell count of 9,200/ μ l with 70 % neutrophils, serum liver chemistries normal. Ultrasound showed the distended gallbladder with thickened walls with intramural air, no sludge or calculus with pericholecystic edema with fluid. There was also a mass, 3 in cm diameter, under the liver to the left in juxtaposition to the gallbladder. Endoscopic ultrasound done also showed the same findings (Fig. 1)

Laparoscopy performed showed a congested edematous gallbladder which after dissection showed a 3 cm $\times$ 2 cm $\times$ 2 cm (Fig. 2a) pedunculated mass at the under-surface of the left lobe of the liver. It was darker compared to the liver with whitish areas on its surface, freely mobile and twisted clockwise by 360° (Fig. 2b). The pedicle was seen to consist of hepatic blood vessels and bile duct with an extrahepatic connection (Fig 2c). The pedicle was clipped, divided, and the lobe excised (Fig 2d). Laparoscopic cholecystectomy was completed.

Microscopy revealed necrosis, hemorrhages, neutrophils, central area showing faint trabecular pattern but no viable cells, and periphery showing edematous viable tissue with a few ducts.

The patient made an uneventful recovery with no recurrence of pain in 6 months since excision.

Discussion

Anomalies of the liver are rare. In 1925 Cullen first proposed the term “accessory lobe” of the liver [1, 2]. According to Collan, the liver tissue in communication with the main liver is termed an “accessory lobe,” while no communication is termed ectopic liver [3].

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Fig. 1 Endoscopic ultrasound of emphysematous cholecystitis with accessory liver lobe

Accessory lobes are often incidental findings at emergency surgery [1] or laparoscopy [4], reported in 0.9 % of 1,060 laparoscopy cases by Watanabe et al. [4].

The accessory liver lobe was pedunculated (usually sessile) below the left liver (commonly right) with no connection to the liver but extrahepatic connection to the bile duct and vessels in free edge of the lesser omentum (rarely isolated) making it unusual in morphology.

In this case we report acute cholecystitis with torsion of the pedunculated accessory liver lobe. Two coexistent pathologies made this unusual. Considering the position of the lobe, we speculate the possibility of torsion with subsequent ischemia and edema compressing the cystic duct, leading to acute cholecystitis as no intraluminal pathology of calculus or sludge was found. Also the

patient was young with no morbidities, the opposite which is associated with acute acalculous cholecystitis. That torsion was predisposed by edema associated with acute cholecystitis in a coexistent asymptomatic accessory liver lobe seemed unlikely as acute cholecystitis adhesions would limit possibility of torsion.

Preoperative diagnosis is rare. Ultrasonography may show a mass below the liver near the gallbladder. CT scan shows morphology of mass with similar attenuation values to the liver [5]. Radionuclide imaging with sulfur colloid showing uptake of the radiotracer in the mass confirms hepatic nature. Radionuclide SPECT shows the pedicle connecting the lobe with the main.

Symptomatic lobes are best managed by excision. We suggest that asymptomatic lobes discovered incidentally

Fig. 2 Intraoperative presentation showing cholecystitis with (a) accessory liver lobe below left lobe of liver, (b) torsion in pedicle, (c) extrahepatic pedicle with bile duct and hepatic vessels, and (d) clipped pedicle

should be excised if pedunculated or in close proximity to the cystic duct or common bile duct.

Conclusions

Accessory lobes of the liver are not always an incidental finding and may also be a possible rare cause of acute acalculous cholecystitis.

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