Post-cholecystectomy partial biliary stricture leading to primary intrahepatic calculi

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DESCRIPTION

A 40-year-old woman presented with complaints of pain in the right hypochondrium and intermittent high-grade fever with chills for 3 months. She had a history of waxing and waning jaundice for the last 2 months. She had undergone open cholecystectomy 15 years back. Abdominal examination revealed a non-tender hepatomegaly. Blood investigations showed a deranged liver function suggestive of obstructive biliary pathology. Total bilirubin level was raised (4.6 mg/dL) with predominant direct component (3.5 mg/dL). Her serum alkaline phosphatase was elevated (1683 U/L) but transaminase levels were within normal range.

An abdominal ultrasound showed mild hepatomegaly with bilateral intrahepatic biliary radicle dilation. Multiple calculi were present in the intrahepatic bile ducts and a hypoechoic shadow was seen near hilum. In view of suspected mass lesion at hilum, an abdominal CT scan was obtained that showed thickening of the common hepatic duct. Intrahepatic ducts were grossly dilated and were filled with multiple opacities suggestive of calculi (figure 1A). Magnetic resonance cholangiopancreatogram also revealed a partial stricture of common hepatic duct with upstream biliary radicle dilation and multiple intrahepatic calculi (figure 1B).

Patient underwent surgical exploration, clearance of intrahepatic stones and Roux-en-Y side-to-side hepaticojejunostomy proximal to the stricture (figure 2). Intraoperative frozen section examination of the strictured segment showed benign pathology and ruled out the possibility of cholangiocarcinoma. Patient recovered well after surgery.

Gallstone disease (GSD) has a wide spectrum of clinical presentations ranging from asymptomatic to life-threatening forms like cholangitis, pancreatitis, gallstone ileus and gallbladder malignancy.[1] Chronic cholecystitis is the the most common form of symptomatic GSD and typically presents with biliary colic. Laparoscopic cholecystectomy is the current 'gold standard' for management of symptomatic cholelithiasis. Bile duct injury (BDI) during cholecystectomy remains a common and dreaded complication.[2] Only a small percentage of these injuries are recognised intraoperatively while majority manifest in the early postoperative period. Delayed presentation of BDI (>5 years of cholecystectomy) is also not uncommon and is seen in up to 30% of cases.[2]The most common cause of delayed biliary stricture is the ischaemic injury due to extensive dissection around the major bile ducts during cholecystectomy.[2] Slow evolving biliary strictures lead to chronic bile stasis thus promoting intrahepatic calculi formation.[3]

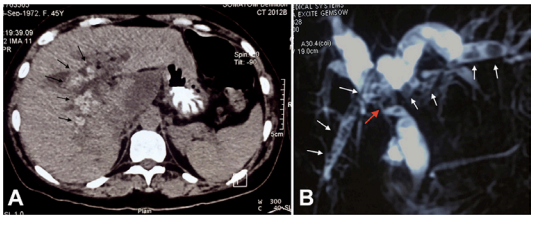

Figure 1 (A) CT scan of the patient showing multiple intrahepatic calculi (*black arrows*) and (B) magnetic resonance cholangiopancreatogram showing dilated intrahepatic bile ducts with multiple filling defects (*white arrows*). Biliary stricture is present at the level of common hepatic duct (*red arrow*).

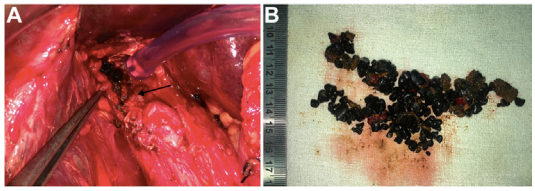

Figure 2 (A) Intraoperative image showing stricture at common hepatic duct (*arrow*) and stones in the proximal ducts and (B) large volume of stones cleared from intrahepatic ducts.

Learning points

- Post-cholecystectomy bile duct stricture can develop even after several years of index surgery. In fact, stricture formation can be delayed beyond 5 years in up to one-third of cases.
- Possibility of cholangiocarcinoma should always be kept in mind while dealing with patients presenting with delayed biliary stricture.
- Partial stricture leads to bile stasis in the proximal ducts predisposing to intrahepatic calculi formation. Surgery in the form of complete stone clearance and bilioenteric anastomosis remains the preferred approach.

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Author note One of the authors (RY) does share the surname with the patient but they are not related or acquainted to each other. In fact, 'Yadav' is a common surname in the North Indian region.

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