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Case report

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Hepatolithiasis with biliary ascariasis – a case report

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Abstract

Background: Biliary ascariasis is regarded as possible etiological factor for hepatolithiasis. Here we report one case of a patient with hepatolithiasis with biliary ascariasis who developed a liver abscess, which was treated with partial hepatectomy.

Case presentation: A young adult female presented with epigastric pain and vomiting with repeated attacks of cholangitis. ERCP showed evidence of multiple intrahepatic calculi with the development of abscess in the left lobe of liver. The patient underwent partial hepatectomy and was found to have biliary ascariasis on histology. She was treated with antihelmenthic therapy and has had an uneventful postoperative period of 2 years.

Conclusion: Biliary ascariasis with hepatolithiasis, although rare, should be considered in endemic countries.

Background

Hepatolithiasis is more prevalent in Asian countries and can be associated with helminthiasis [1,2]. In India biliary ascariasis has been reported as endemic in Kashmir valley [3,4]. Elsewhere in country there are only few reports of biliary ascariasis [5]. We report a patient with a case of hepatolithiasis with ascariasis who developed liver abscess and was treated with surgical resection.

Case presentation

A 35 year old female presented with dull aching epigastric pain and vomiting for 2 days. There was history of repeated attacks of cholangitis over a 2 year period for which she was being investigated. The patient was averagely built and poorly nourished. Jaundice was present without signs of liver cell failure. Vital parameters were within normal limits. On investigation, hemoglobin was 10.5 gm%, total WBC count was 18,500 /cmm. Liver function tests showed serum bilirubin 4.8 mg/dl, alkaline phosphatase 24 IU, AST 110 U/L and ALT 86 U/L. Ultrasonography showed right and left intrahepatic calculi with an abscess in left lobe of liver, dilated common bile duct (CBD) and gallstones. CT scan showed an abscess in the left lobe of liver with multiple bilateral intrahepatic calculi (Fig 2 and 3. ERCP revealed dilated CBD, biliary strictures with dilatation of some of the intrahepatic biliary radicals. An attempt was made to remove some of the calculi. In view of hepatolithiasis the patient was taken up for surgery to remove intrahepatic stones, however during surgery segment 2 and 3 were found to be destroyed with abscess. Hence segment 2 and 3 were resected with subtotal excision of CBD and Roux-en-Y hepaticojejunostomy.

Intraoperatively stones in right hepatic biliary tract were extracted.

Macroscopic examination of left hepatectomy specimen was dark green and measuring 12 cm × 4 cm × 3 cm in dimensions. A localized area of 4 cm × 3 cm × 3 cm was grayish, dull and friable and was interpreted as abscess. The wall of the abscess were irregular, necrotic and smooth at places. Surrounding parenchyma showed dilated biliary radicals, some were impacted with black stones.

Histopathology revealed multiple dilated bile ducts. One of which showed extensive ulceration of mucosa, dense mixed inflammation, filled with bile that was corresponding to an area of abscess. Lumina of some of the larger bile ducts were filled with tubular structures having smooth, long, linear defects with tapering ends that were surrounded by bile sludge and inflammatory cell reaction suggestive of adult helminthes with possibility of ascariasis (fig 1). Surrounding liver showed features of secondary biliary cirrhosis. Postoperative period was uneventful. The patient was given broad-spectrum antihelminthic treatment orally and discharged. She is on regular follow-up for next 2 years without any complications.

Figure 2
CT with contrast – Intrahepatic biliary radical dilatation with biliary calcification.

Discussion

Hepatolithiasis or primary intrahepatic stones are prevalent in the Far East countries such as Japan, Korea, and Taiwan [6]. The relative incidence of hepatolithiasis against all gall stones in western countries is approximately 1%, whereas in Taiwan, South Korea, China it has been reported to be 20%, 18%, 38–45% respectively [6]. Biliary ascariasis is a common problem in certain areas of world. Although it is not common in developed countries, with increasing air travel and immigration, one must be aware of this condition. Ascaris *lumbricoides* is a common parasite and over a billion people are estimated to be infested worldwide [5]. It is more common than Clonarchis *sinensis* and other flukes which are associated with cholangiohepatitis. Biliary ascariasis is predominantly a disease of adult women [3]. Duration of symptoms vary from few months to few years. These patients usually present with biliary colic (56%), acute cholangitis (25%), acute cholecystitis (13%), acute pancreatitis (6%) and rarely hepatic abscesses (less than 1%) [4]. Our case also presented with recurrent attacks of cholangitis. Adult forms of Ascaris *lumbricoides* are usually passed into the intestine, however worms in the duodenum and invading the ampulla of Vater usually present as biliary colic or acute pancreatitis due to blocked CBD or pancreatic duct. These worms migrate through CBD, cystic duct and intrahepatic duct leading to biliary colic and cholangitis. Presence of dead worms form nidus for the CBD or hepatic stone formation. Further migration of worms into the intrahepatic duct causes secondary biliary cirrhosis, stricture formation, bile duct stenosis, hepatolithiasis and abscess formation. These worms also have high glucoronidase activity that deconjugates bilirubin and form pigment stones.

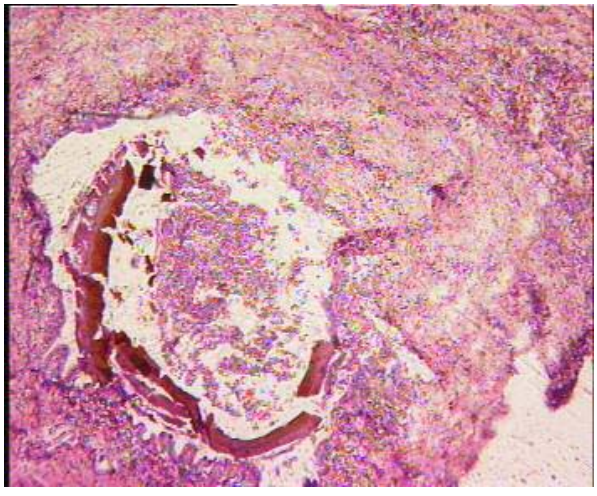

Figure 1
Hematoxylin and eosin section showing dilated bile duct filled with parasite, surrounded by inflammatory reaction. (100×)

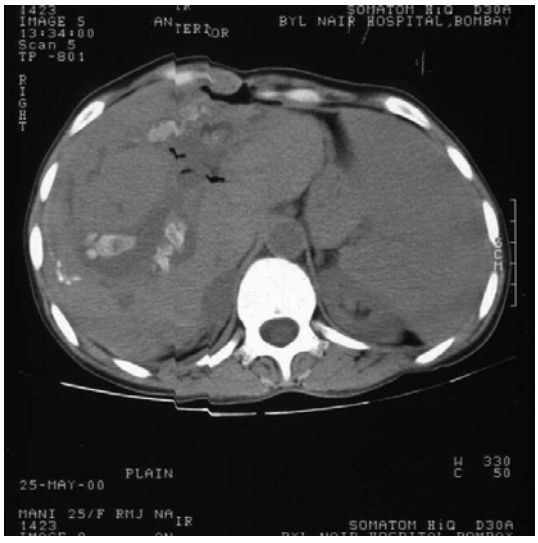

Figure 3
CT plain – Intrahepatic biliary radical dilatation with biliary calcification.

The diagnosis of hepatolithiasis with ascariasis is usually possible on ultrasonography of the abdomen and ERCP [4]. However in our case intrahepatic calculi were diagnosed on CT scan and ERCP but the presence of parasite (ascariasis) was noticed only after histopathology of the resected specimen. Though ERCP plays a major diagnostic and therapeutic role at times it may not help in the diagnosis of biliary ascariasis. This is due to active movement of the worms, which are going into and out of the biliary tract [4].

The treatment of hepatolithiasis with biliary ascariasis is endoscopic extraction of calculi and worms from the bile duct with or with out sphincterotomy which gives immediate relief. However in presence of complications hepatectomy is the only treatment of choice. Sphincterotomy has disadvantages in endemic areas, as these patients are prone to develop remigration of worms into biliary tree. Supportive anthelminthic treatment for long periods is required in these cases. Improvement in sanitation plays crucial role in the epidemiological control of these hepatobiliary diseases.

Conclusion
Biliary ascariasis with hepatolithiasis, although is rare, should be considered in endemic countries.

Competing interests
None declared.

Authors' contributions
Complete workup of the patient was done by surgeons Joshi R M, Shetty T S, Khithani A S Patient was diagnosed as hepatolithiasis with the help of radiologist Chemburkar V V who performed USG, CT Scan. Further histopathology was carried out and this case was diagnosed as hepatolithiasis due to biliary ascariasis by Pilankar K S, Amarapurkar A D.

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Written consent was obtained from the patient for the publication of patient's details.

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