

Biliary Ascariasis Mimicking as Choledocholithiasis on Endoscopic Ultrasound

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Abstract

A 47-year-old female presented with features of biliary colic with deranged liver function tests. Endoscopic ultrasound from 2nd part of duodenum revealed two round filling defects in lower end of CBD suggesting choledocholithiasis. On examining from first part of duodenum, upper and mid common bile duct showed two linear shadows with anechoic centre typical of worm in the bile duct. The diagnosis was confirmed by endoscopic removal of single *Ascaris lumbricoides* that was folded on itself within the common bile duct, hence being seen as two round filling defects mimicking choledocholithiasis

Introduction

Ascaris lumbricoides is a common tropical intestinal parasite. It has potential to migrate to various areas from small bowel especially into small orifices like common bile duct and pancreatic duct. This case highlights an incidental *ascaris lumbricoides* in common bile duct mimicking choledocholithiasis. The worm was folded onto itself in the CBD giving a confusing endosonographic image of

two circular filling defects. On detailed examination it was diagnosed to be a worm and finally extracted during ERCP.

Case Report

Our patient had history of colicky pain in right upper quadrant of abdomen for two weeks. She underwent routine blood investigations. Liver function test showed transaminitis (AST and ALT were twice the upper limits)

with raised alkaline phosphatase. Trans-abdominal ultrasound showed grade I fatty liver with cholelithiasis. Visualization of bile duct was poor due to bowel gas. In view of persistent pain abdomen and deranged LFT, she was taken for endoscopic ultrasound. During evaluation of ampulla, two echogenic round filling defects were seen in lower portion of bile duct without acoustic shadow. There was central lucency within these defects. As the endoscope was slightly (Figure 1) withdrawn and mid CBD was focused, two linear tubular structures with central lucency were seen and these were appearing to meet each other in upper portion of the CBD. Patient was taken for ERCP. Cholangiogram showed linear filling defect (Figure 2). Biliary sphincterotomy was done. On balloon sweep, two ends of *Ascaris Lumbricoides* came out of papilla and on further traction on balloon the entire worm was removed. The worm had folded on itself within the bile duct, hence the lower end (Figures 3, 4) of it gave two rounded echogenic shadows on endosonography. Patient was subsequently given single dose of albendazole for deworming. On follow-up after two months, she was clinically asymptomatic with normal liver function tests. In tropical countries like India, where worm infestation is common, it is not uncommon to encounter biliary ascariasis.

Discussion

Infestation with *Ascaris Lumbricoides* is common in the tropical countries. Increasing number of cases of hepato-biliary ascariasis are being diagnosed due to better imaging and endoscopic techniques. Majority of the infested persons are asymptomatic or have vague abdominal symptoms.

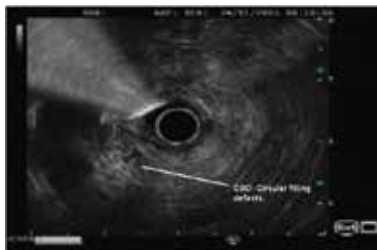


Fig. 1: EUS image showing two round filling defects in the lower portion of the bile duct



Fig. 3: Endoscopy image showing ascaris lumbricoides folded on itself and protruding out of ampulla of Vater



Fig. 2: EUS image showing two linear shadows with anechoic centre within bile duct



Fig. 4: Endoscopy image showing complete *Ascaris Lumbricoides* swept out of bile duct

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Clinical spectrum of ascariasis can present with symptoms pertaining to respiratory system, gastro-intestinal system, pancreatico-biliary tract, appendix.¹⁻³

A. Lumbricoides can migrate and enter into the small orifices like bile duct and pancreatic duct.⁴ Other parasites that are known to infest the biliary tract are Clonorchis sinensis, Opisthorchis viverrini, Opisthorchis felinus, and Dicrocoelium dendriticum. Fasciola hepatica and F. gigantica can present as acute hepatic or chronic biliary tract infection.¹ From the bile duct worm can rarely enter into the cystic duct, gall-bladder or intrahepatic bile ducts. Biliary ascariasis can present as biliary colic, cholecystitis, recurrent pyogenic cholangitis or liver abscess. Imaging modalities that are useful to diagnose biliary ascariasis and its complications are ultrasound,

Computed tomography (CT) and Magnetic resonance imaging (MRI). On sonography ascaris appears as thin, echogenic, longitudinal line which is non-shadowing and has central sonolucent line.⁵ MRI and MRCP are also good imaging modalities for diagnosing biliary parasitosis. On T2 weighted axial imaging, worm appears as hypointense structure with hyperintense signal of bile duct around it.

Role of ERCP/endoscopic ultrasonography

As in trans-abdominal ultrasound, endoscopic ultrasound can identify ascaris in the bile duct as echogenic linear structure without any acoustic shadow with central sonolucent line. Once the diagnosis of biliary ascariasis is established, worm can be extracted after small biliary sphincterotomy.

Conclusion

This report shows that in cases of biliary colic, suspicion of biliary ascariasis should be kept especially in highly endemic countries like India. It can mimic choledocholithiasis owing to folding of the worm inside the CBD. A careful examination using endosonography followed by ERCP for extraction usually gives the diagnosis.

References

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