ACG CASE REPORTS JOURNAL

IMAGE | BILIARY

Biliary Ascariasis Diagnosed and Extracted by ERCP in the United States

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CASE REPORT

A 53-year-old female Bangladeshi immigrant to the United States, status post uncomplicated laparoscopic cholecystectomy without sphincterotomy 6 months earlier for cholelithiasis, presented with colicky abdominal pain for 6 weeks. Physical examination revealed a soft, non-tender abdomen, and esophagogastroduodenoscopy revealed no endoscopic abnormalities. Laboratory testing revealed leukocytes 16,100/mm^3 with no eosinophilia, serum alkaline phosphatase 321 U/L, aspartate aminotransferase 428 U/L, alanine aminotransferase 232 U/L, total bilirubin 1.5 mg/dL, and lipase 30 U/L. Abdominal ultrasound revealed a 9-mm choledochus containing long, parallel segments of non-shadowing echogenic material, initially thought to represent choledochal sludge (Figure 1). Abdominal computed tomography and magnetic resonance cholangiopancreatography revealed only mild extrahepatic biliary dilatation, attributed to prior cholecystectomy.

Endoscopic observation during endoscopic retrograde cholangiopancreatography (ERCP) before biliary cannulation revealed a wiggling worm projecting from the ampulla (Figure 2). The worm was extracted by gently closing a grasping forceps around the worm, and then withdrawing the endoscope and grasping forceps via the mouth. Post extraction, the sphincter of Oddi appeared abnormally dilated and round and was within a small diverticulum (Figure 3).

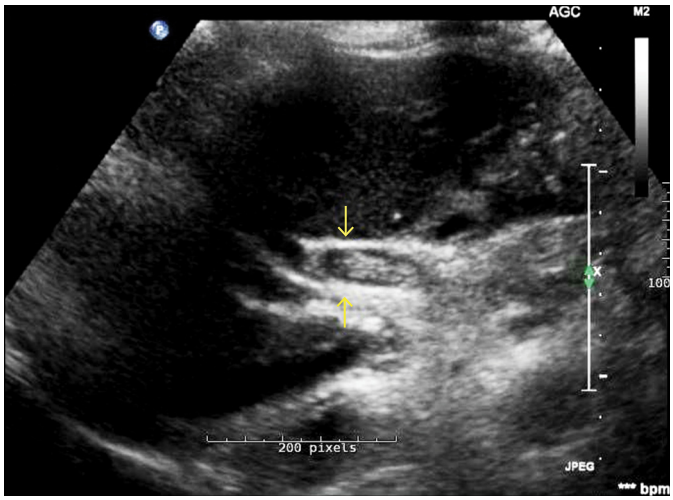

Figure 1. Abdominal ultrasound revealed long, parallel, echogenic, choledochal structures, initially thought to represent choledochal sludge without acoustic shadowing (between arrows). The ultrasound was subsequently re-read correctly as a characteristic finding of choledochal ascariasis.

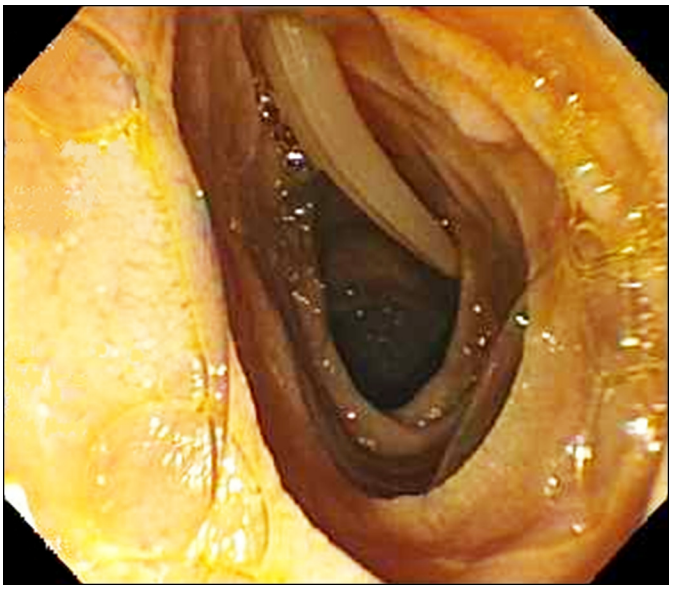

Figure 2. Endoscopy showing a large worm projecting from ampulla of Vater into the descending duodenum.

ACG Case Rep J 2016;3(4):e188. doi:10.14309/crj.2016.161. Published online: December 21, 2016.

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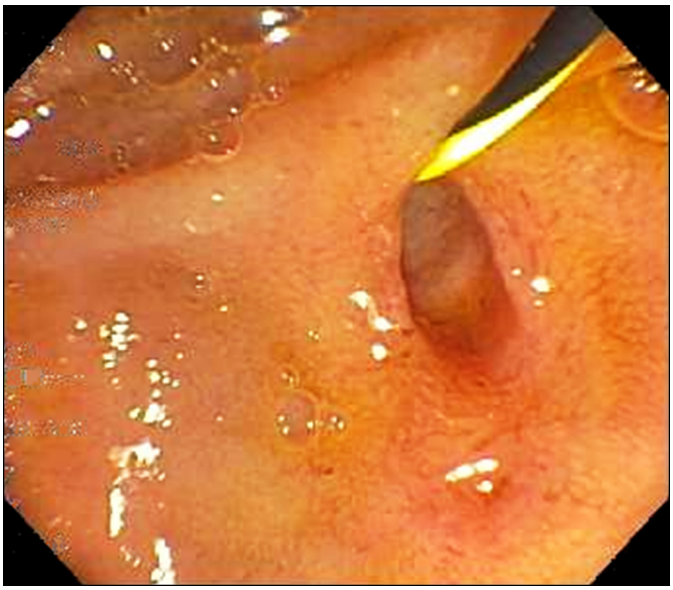

Figure 3. ERCP performed after worm extraction showing a diverticulum-shaped concave ampulla of Vater and a dilated sphincter of Oddi. These changes were attributed to sphincter tissue laxity from the worm repeatedly traversing the sphincter.

Cholangiography after biliary cannulation revealed a 10-mm choledochus. Biliary sludge was extracted with sequential balloon pull-throughs. Microbiological analysis identified the worm as *Ascaris lumbricoides*. Analysis of multiple stool samples revealed no ova or parasites. The patient was given one oral dose of albendazole 400 mg. Her abdominal pain rapidly resolved, and liver function tests quickly normalized and remained within normal limits 8 weeks post-ERCP. The abdominal ultrasound was re-read as showing long, parallel, echogenic, choledochal structures without acoustic shadowing, a sign of biliary ascariasis.[1,2]

Biliary ascariasis is relatively common in tropical countries, but it is rare in the United States.[3] It commonly presents with biliary colic, acute cholangitis, acute cholecystitis, and acute pancreatitis.[3-5] Only a few cases of biliary ascariasis have been diagnosed with ERCP and documented by endoscopic photographs, with most literature reports from endemic areas.[1,4] Risk factors in this patient included recent emigration from Bangladesh, an endemic country, and prior cholecystectomy. A novel, currently reported characteristic is a dilated round sphincter located within a diverticulum detected during ERCP, attributed to sphincter dilatation and periampullary stretching from the worm repeatedly traversing the sphincter. Our report represents a single, retrospectively reported case, and thus is limited, but it illustrates that biliary ascariasis may be accurately diagnosed and treated with ERCP, whereas traditional imaging modalities may fail.

DISCLOSURES

Author contributions: D. Singh drafted the manuscript and reviewed the literature. S. Yang edited the manuscript. MS Cappell drafted and edited the manuscript, reviewed the literature, and is the article guarantor. D. Singh and MS Cappell share primary authorship.

Financial disclosure: MS Cappell is a consultant for the United States FDA Advisory Committee on gastrointestinal drugs and is a member of the speaker's bureau for Movantik, a drug jointly manufactured by AstraZeneca and Daiichi Sankyo.

Informed consent was obtained for this case report.

Received August 1, 2016; Accepted September 2, 2016

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