Endoscopic ultrasound appearance of dead *Ascaris lumbricoides* in the biliary tract

A 2-year-old Indian girl was referred with symptoms of biliary colic and obstructive jaundice of 3 weeks’ duration. Abdominal ultrasonography revealed dilation of intrahepatic biliary radicles, a distended gallbladder, and a dilated common bile duct (CBD) of 15 mm (normal diameter up to 6 mm) containing multiple ill-defined, oval, hyperechoic shadows near the lower end (▶Fig. 1). Magnetic resonance cholangiopancreatography (MRCP) showed multiple intraluminal curvilinear, hypointense areas in the lower CBD consistent with stones or worm (▶Fig. 2). Linear endoscopic ultrasound (EUS) was performed for evaluation of the CBD filling defects visualized on abdominal ultrasound and MRCP. Linear EUS from the stomach and duodenal bulb revealed a dilated CBD with multiple hyperechoic structures without acoustic shadowing. EUS showed curvilinear, disc-shaped short-segment echogenic structures, 2–6 mm in size, with a central anechoic core and parallel and equidistant from each other; this was suggestive of recently broken down soft parallel fragments of roundworms (▶Fig. 3, ▶Video 1). The central anechoic core represented the digestive tract of *Ascaris lumbricoides*. Cholangiography revealed a dilated CBD with tapering at the lower end showing multiple filling defects (▶Fig. 4). After multiple balloon sweeps on endoscopic retrograde cholangiopancreatography (ERCP), creamy white structures and yellow-colored material were removed that were suggestive of recently fragmented roundworm (▶Fig. 5, ▶Video 1). The patient’s clinical condition improved significantly after ERCP, and repeat abdominal ultrasound after 1 week demonstrated decreased size of the CBD. The patient underwent deworming with albendazole, with the passage of multiple roundworms in stools further confirming the diagnosis of obstructive jaundice due to *Ascaris*.

Pancreaticobiliary ascariasis is a common problem in tropical countries [1]. Dead *Ascaris* is a rare but an important cause of obstructive jaundice in the developing world [2]. In conclusion, we describe an unusual appearance of recently dead *Ascaris lumbricoides* on abdominal ultrasound, MRCP, and EUS. In endemic regions, biliary ascariasis should be considered in any child presenting with obstructive jaundice [3].

E-Videos

Video 1 Appearance at linear endoscopic ultrasonography (EUS) of dead Ascarislumbricoides causing obstructive jaundice in a 2-year-old girl, and removal of the fragmented roundworm at endoscopic retrograde cholangiopancreatography (ERCP). CD, cystic duct; CBD, common bile duct; IVC, inferior vena cava.

Fig. 1 In a 2-year-old Indian girl with symptoms of biliary colic and obstructive jaundice of 3 weeks’ duration, abdominal ultrasonography showed a dilated common bile duct (CBD) with multiple ill-defined, oval, hyperechoic shadows near the lower end.
Competing interests

All authors have no conflict of interest to disclose.

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