

Endoscopic ultrasonography-guided rendezvous technique for removal of a long biliary ascariasis: a challenging case



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INTRODUCTION

Biliary ascariasis is a well-known entity in tropical countries.¹ ERCP is generally successful in removing them if they are causing cholangitis or obstruction.² However, in the presence of anatomic distortion, an EUS-guided approach may be needed. To the best of our knowledge, this is the first reported case of the EUS-guided rendezvous technique being used to remove biliary ascaris.

CASE SUMMARY

A 55-year-old woman presented with a 15-day history of intermittent right upper abdomen pain, nausea, vomiting, and anorexia. On examination, she had mild upper abdomen tenderness. Her blood parameters revealed anemia and elevated alkaline phosphatase, aspartate transaminase, and alanine transaminase levels with a normal bilirubin level. MRCP images showed a mildly dilated common bile duct (CBD) with a long linear filling defect. ERCP was attempted. However, we encountered a smooth stric-

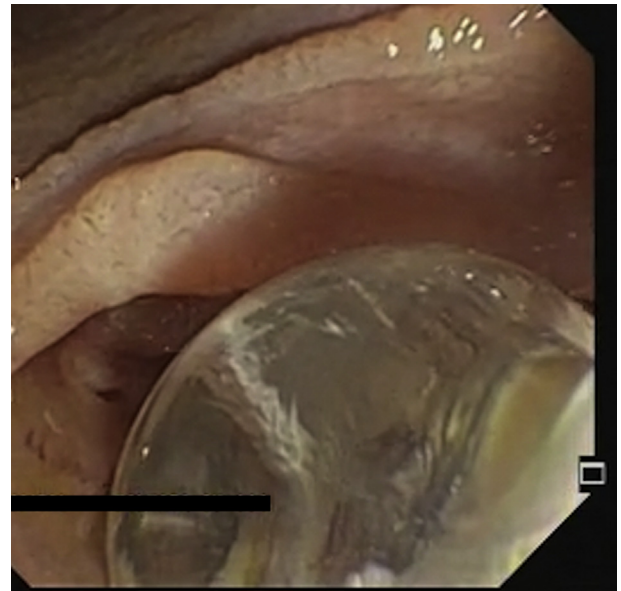


Figure 2. Controlled radial expansion balloon dilatation of the stricture allowed passage of the side-viewing endoscope. However, substantial scarring and anatomic distortion were encountered, resulting in failed ERCP.

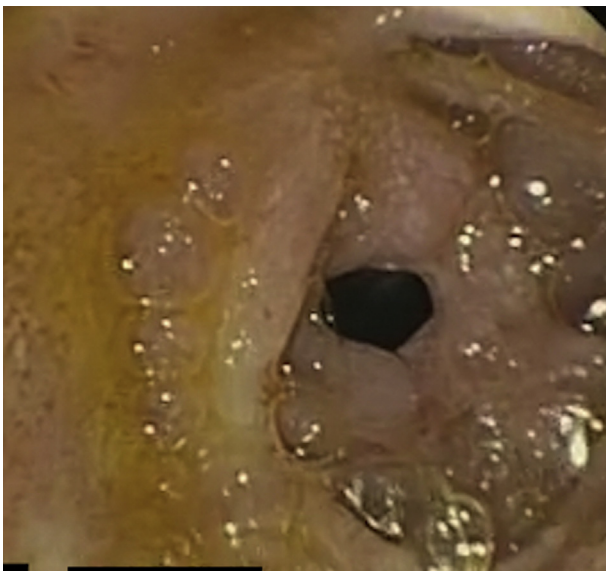


Figure 1. While attempting ERCP, we encountered a smooth stricture in the proximal second part of the duodenum precluding the passage of the side-viewing endoscope.

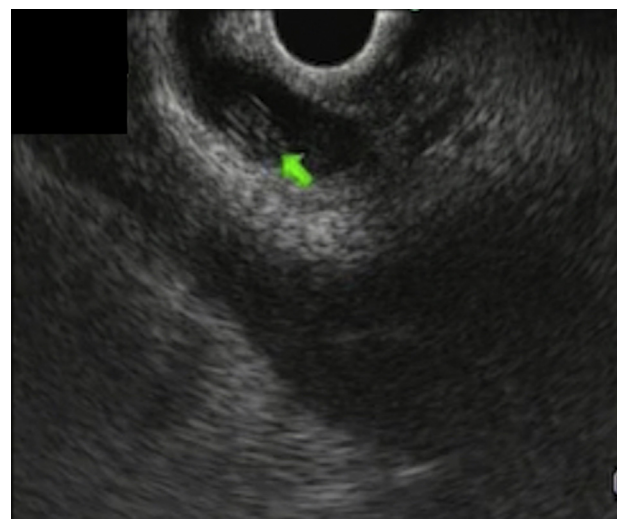


Figure 3. Linear EUS image from the duodenal bulb shows a longitudinal structure with parallel hyperechoic wall with a central lumen, which is heterogeneous (*arrow*).



Figure 4. After failed initial CBD cannulation, the EUS-guided rendezvous technique was used for common bile duct access. Fluoroscopy image shows a 19-gauge EUS-guided FNA needle accessing the proximal common bile duct from the duodenal bulb and cholangiogram showing a long linear filling defect suggestive of *Ascaris lumbricoides*.

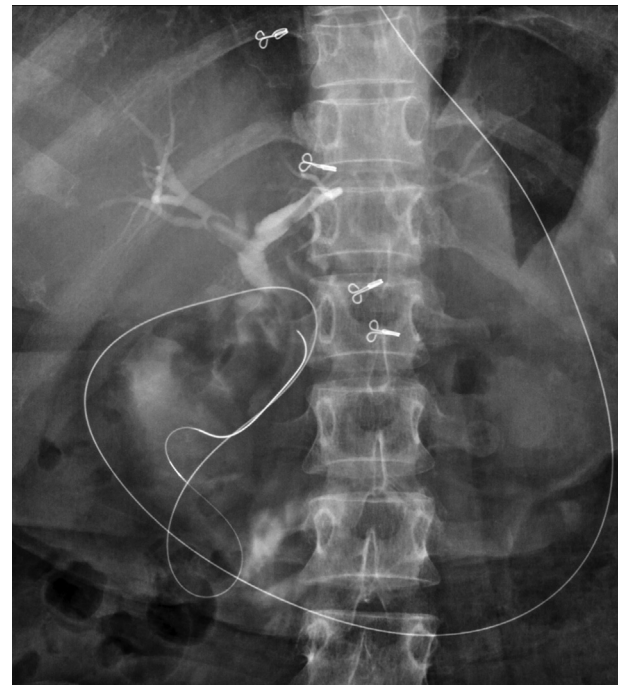


Figure 6. Fluoroscopy image showing the guidewire in position entering the common bile duct from the duodenal bulb and exiting the papilla into D2. The EUS endoscope was removed.



Figure 5. Fluoroscopy image shows the guidewire being passed into the common bile duct through the EUS needle and then manipulated through the papilla into D2.



Figure 7. Fluoroscopy image showing the guidewire in the common bile duct after successful common bile duct cannulation along the side of the previously placed EUS-guided wire.

ture at proximal D2, which was probably due to peptic ulcer disease (Fig. 1). She had a history of *Helicobacter pylori* infection. We then did a controlled radial expansion balloon dilatation of the stricture to allow passage of a side-viewing endoscope (Fig. 2). Subsequently, we encountered substantial scarring and anatomic distortion in D2, resulting in an inability to identify the papilla and failed CBD cannulation.

PROCEDURE DETAILS

Linear EUS from the duodenal bulb revealed an immobile linear tubular structure with a hyperechoic parallel

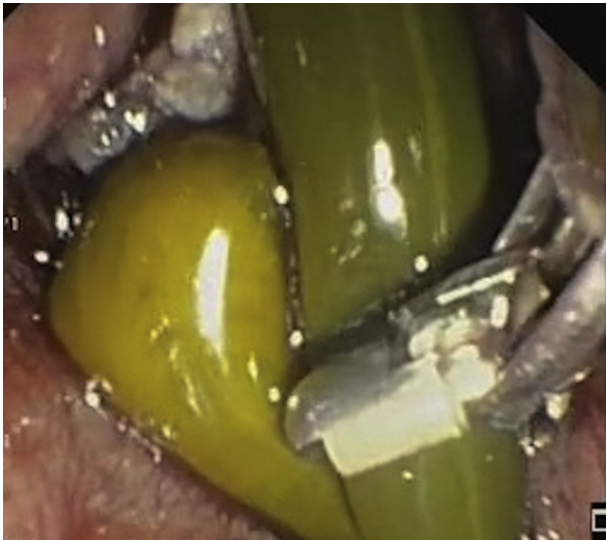


Figure 8. Endoscopy image showing the worm being extracted by using a foreign body removal forceps.

wall and central lumen without acoustic shadowing extending throughout the CBD and common hepatic duct (Video 1, available online at www.giejournal.org). The CBD measured 9.5 mm at the porta. These features were highly suggestive of a dead worm in the CBD (Fig. 3). EUS-guided biliary access was done using a 19-gauge EUS FNA needle, which is most widely used because it allows better movement of the guidewire during manipulation (Fig. 4). Although considered to be ideal, the intrahepatic biliary radicle in the left lobe was 3 mm in our case and hence was not suitable for EUS-guided puncture. The puncture site in our case was the distal part of D1 because it provided stable endoscope position and allowed better guidewire manipulation.

After confirming the position, a guidewire was passed through the needle into the CBD and was then manipulated through the papilla into D2 using rotatory movements of the fingers (Fig. 5). Subsequently, the EUS endoscope was removed and a side-viewing endoscope was intubated until D2 (Fig. 6). A sphincterotome was then passed into the CBD alongside the guidewire exiting through the papilla, using it as a guide (Fig. 7). A cholangiogram showed a mildly dilated CBD and a linear filling defect extending into the right and left hepatic ducts. A small biliary sphincterotomy was done; it was limited because of the distorted anatomy and edema in D2. This was followed by a biliary sphincteroplasty to 10 mm to allow easy removal of the worm. Subsequently, balloon trawling was done, and an approximately 20-cm-long *Ascaris lumbricoides* was extracted from the bile duct and removed from the patient with foreign body forceps (Figs. 8 and 9). Final cholangiogram was clear with no stone or stricture or residual worm. However, a plastic biliary stent was placed as needle puncture was done into the CBD. The patient was discharged the next day. She was treated with albendazole 400 mg/day for 3 days



Figure 9. Final specimen of 20-cm-long *Ascaris lumbricoides* extracted from the common bile duct using an EUS-guided rendezvous technique.

to eradicate remaining worms and is under follow-up. We plan to remove the CBD stent after 4 weeks.

CONCLUSIONS

Various endoscopic methods, such as balloon sweeps, foreign body forceps, and dormia baskets, are used to remove biliary worms during ERCP, and an EUS-guided approach is rarely needed. The EUS rendezvous method is one of the most technically complex procedures for biliary drainage and should be reserved as a salvage method only in experienced hands, especially for benign indications such as biliary ascariasis.³ A 19-gauge needle should be used; selection of the proper puncture site and careful guidewire manipulation are the keys to success.

DISCLOSURE

All authors disclosed no financial relationships.

Abbreviation: CBD, common bile duct.

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