



Crossing the minefield: EUS-guided transesophageal biliary rendezvous in the presence of esophageal varices and ascites

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A 75-year-old man presented because of obstructive jaundice with intense itching and significant weight loss. His liver function test result was deranged: bilirubin 22 mg/dL (normal <2 mg/dL), alkaline phosphatase 872 IU/mL (normal <120 IU/mL), along with raised CA19-9 at 10,000 IU/L (normal <37 IU/mL). Contrast-enhanced CT showed a pancreatic head mass, dilatation of the common bile duct (CBD), and intrahepatic biliary radicles, with portal cavernoma and ascites. Gastroscopy revealed large esophageal varices and small gastric varices. Analysis of the ascitic fluid showed a high serum-albumin ascites gradient with benign fluid cytologic results.

Selective biliary cannulation at ERCP failed because of vigorous peristalsis and a small hooded papilla. A therapeutic paracentesis was performed before EUS-guided biliary drainage (EUS-BD). Multiple pericholedochal collaterals precluded transduodenal biliary access (Fig. 1).

Attempts at transgastric access of the left hepatic duct from the segment 3 bile duct were technically not possible because of improper bile duct alignment and gastric wall

collaterals. EUS-guided transhepatic biliary access was achieved by the use of a linear echo-endoscope (UCT-180; Olympus, Tokyo, Japan) via segment 2 through an avascular site in the distal part of the esophagus under EUS guidance, by the use of a 19-gauge needle for puncture (Figs. 2 and 3; Video 1, available online at www.VideoGIE.org).

A guidewire (0.035-inch, 450 cm; Jagwire, Boston, Mass) was negotiated into the CBD. Manipulation of the guidewire from the distal CBD into the duodenum across the papilla failed; hence, a tapered stiff cannula (4.5F, StartTip 2V cannula; Olympus) was railroaded over the guidewire across the esophagus wall into the distal CBD, which eventually enabled passage of the guidewire into the duodenum. An echo endoscope was then exchanged with a duodenoscope (180 series, Olympus) and wire-guided CBD cannulation was done beside the antegrade passed projecting guidewire (parallel biliary rendezvous). A biliary self-expandable metallic

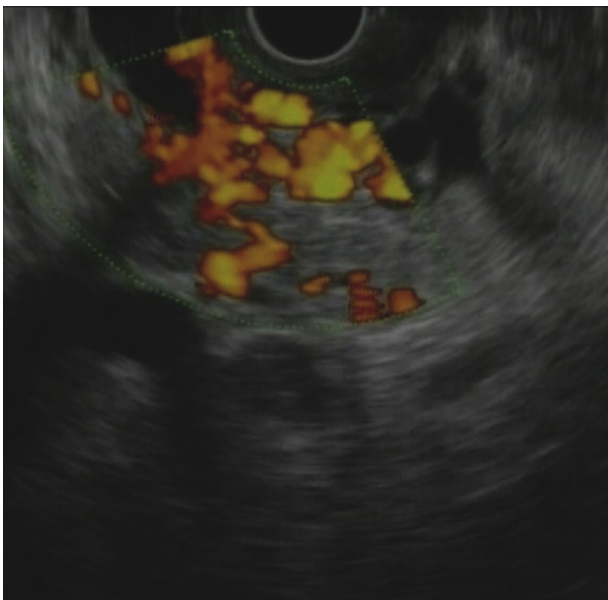


Figure 1. EUS view of multiple pericholedochal collaterals.

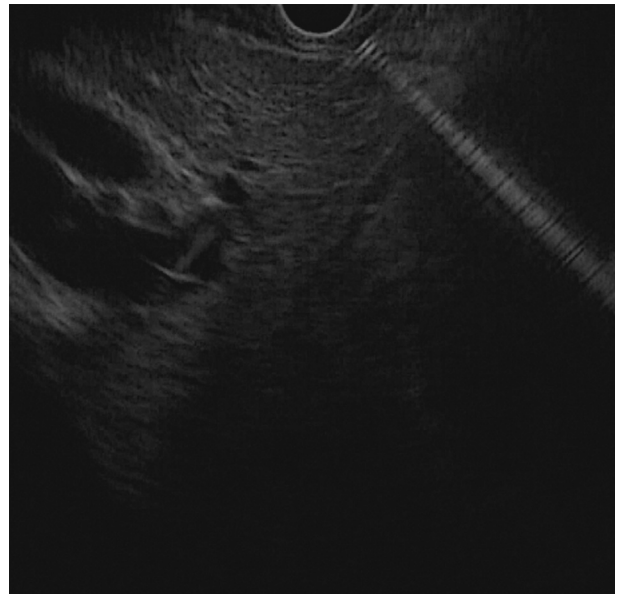


Figure 2. EUS view of transhepatic puncture of segment 2 hepatic duct with linear echoendoscope through the distal esophagus with a 19-gauge needle.

Written transcript of the video audio is available online at www.VideoGIE.org.

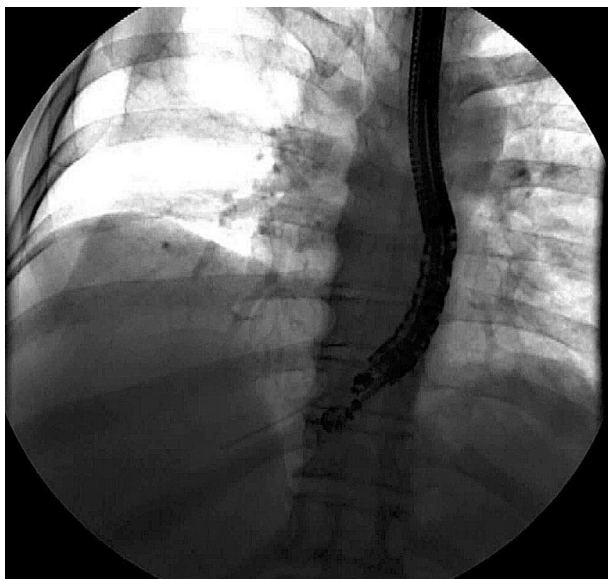


Figure 3. Fluoroscopic view of transhepatic puncture of segment 2 hepatic duct with linear echoendoscope through the distal esophagus with a 19-gauge needle.

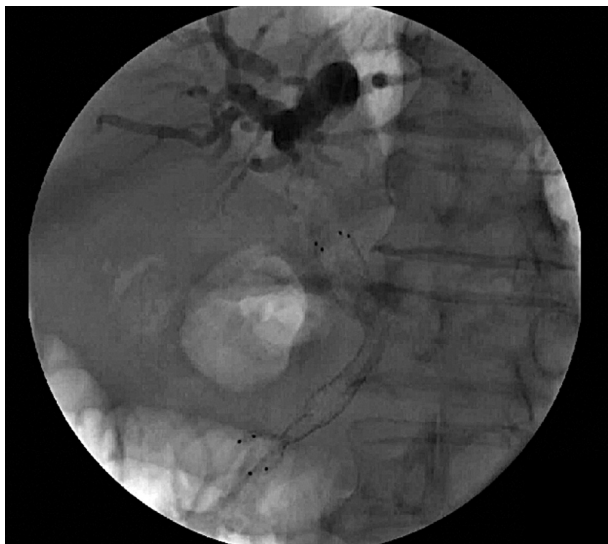


Figure 4. Fluoroscopic view of transpapillary biliary self-expandable metallic stent placement.

stent (10 mm wide, 60 mm long; Zilver, Cook Medical, Inc, Winston-Salem, NC) was placed without sphincterotomy (Fig. 4).

After placement of a biliary self-expandable metallic stent (SEMS), a gastroscope with a transparent cap was inserted into the esophagus to enable inspection of the puncture site, which did not reveal any bleeding (Fig. 5). After drainage, the patient's symptoms and bilirubin improved gradually.

EUS-BD has emerged as an effective alternative to percutaneous transhepatic biliary drainage when

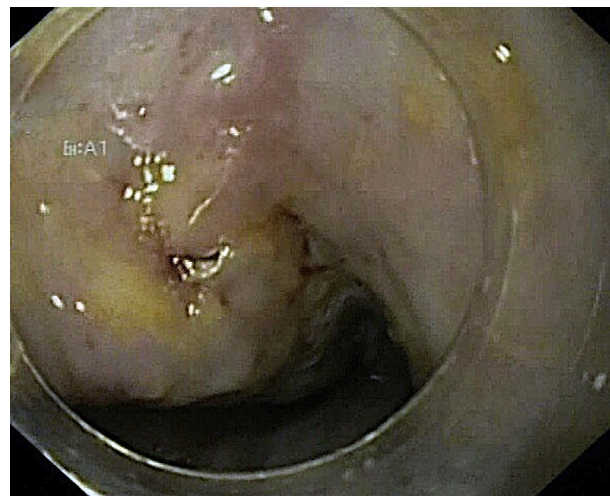


Figure 5. Inspection of puncture site and esophageal varices with endoscope with attached transparent cap.

conventional ERCP fails or is not feasible, especially in the presence of abnormal anatomy. EUS-BD can be performed with high therapeutic success (87%-98%).^{1,2} Adverse events associated with the procedure depend on the technique of EUS-BD and the practitioner's expertise.

The predominant route used to puncture the bile duct by EUS is either transgastric or transduodenal. A transesophageal route for biliary access may have a mechanical advantage for exchange of accessories but is rarely used because of the perceived risk of mediastinitis.^{3,4} In this case, we used a transesophageal approach because of the technical challenges posed for biliary access by standard routes.

Although esophageal varices pose a challenge for the EUS-guided transesophageal route for biliary access by FNA, real-time imaging helps in selecting the least vascular site between the varices for puncture, as demonstrated in this case. The critical step of over-the-wire track dilation in this procedure was achieved by advancement of a stiff flexible catheter instead of a cystotome, thus achieving "cautery-less dilation" to avoid adverse events. We avoided antegrade deployment of the SEMS across the papilla for fear of widening the puncture site and the associated potential of variceal bleeding.

This case report suggests that the esophageal route may be used for EUS-BD in the presence of "minefield"-like ascites and gastroesophageal varices associated with portal cavernoma. EUS-BD can be performed successfully in the presence of esophageal varices.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: CBD, common bile duct; EUS-BD, EUS-guided biliary drainage; SEMS, self-expandable metallic stent.

REFERENCES

1. Khashab MA, Dewitt J. EUS-guided biliary drainage: is it ready for prime time? Yes! *Gastrointest Endosc* 2013;78:102-5.
2. Giovannini M, Bories E. EUS-guided biliary drainage. *Gastroenterol Res Pract* 2012;2012:348719.
3. Ito K, Fujita N, Noda Y, et al. Temporary endosonography-guided biliary drainage for transesophageal placement of a metal stent in recurrent cholangiocarcinoma. *Dig Endosc* 2012;24:191.
4. Will U, Meyer F, Schmitt W, et al. Endoscopic ultrasound-guided trans-esophageal cholangiodrainage and consecutive endoscopic transhepatic Wallstent insertion into a jejunal stenosis. *Scand J Gastroenterol* 2007;42:412-5.

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