



## EUS-guided choledochoduodenostomy using a lumen-apposing metal stent in a patient with preexisting duodenal stent and ascites

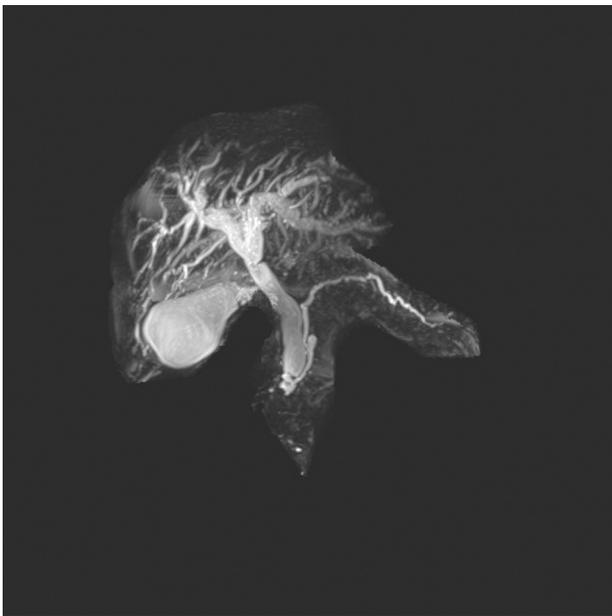
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Endoscopic retrograde cholangiopancreatography in patients with a pre-existing duodenal stent is technically challenging with a low success rate.<sup>1</sup> EUS-guided biliary drainage has emerged as a promising technique for patients with malignant biliary obstruction when conventional ERCP fails. Although combined placement of self-expanding metal biliary and duodenal stents can be performed for patients with simultaneous biliary and duodenal obstruction, reports on transduodenal EUS-guided biliary drainage in patients with an existing duodenal metal stent are limited.<sup>2,3</sup> Herein, we report a case of EUS-guided choledochoduodenostomy (EUS-CD) with a new small lumen-apposing metal stent (LAMS) in a patient with malignant biliary and duodenal obstruction with an existing duodenal metal stent and ascites.

A 67-year-old woman with a history of metastatic breast adenocarcinoma with peritoneal carcinomatosis presented with a 1-week history of nausea and vomiting secondary to duodenal obstruction. Liver enzymes were normal at presentation. Upper endoscopy revealed severe extrinsic compression in the second and third portions of the duodenum. Two overlapping self-expanding metal enteral stents were placed

traversing the stricture in the duodenum. Three weeks later, the patient developed painless obstructive jaundice and an increase in total bilirubin (8.3 mg/dL). MRI showed new moderate to severe dilation of intrahepatic ducts and common bile duct (CBD) (Fig. 1). Extensive retroperitoneal metastatic and infiltrative disease was noted obstructing the CBD and pancreatic duct entering the duodenum. A CT scan of the abdomen and pelvis with intravenous contrast demonstrated a metal stent in the duodenum with the ampulla located within this segment of indwelling metal stent (Fig. 2). Moderate dilatation of the intra- and extrahepatic bile ducts was seen.

ERCP was first attempted but was unsuccessful because of the poor maneuverability and limited view of the duodenoscope through the stent (Fig. 3). Under EUS, moderate to severe intrahepatic ductal dilatation was seen. The CBD measured 13.7 mm (Fig. 4). A mild to moderate amount of ascites was noted in the peritoneal cavity that precluded the possibility of performing an EUS-guided hepaticogastrostomy (Video 1, available online at [www.giejournal.org](http://www.giejournal.org)).



**Figure 1.** MRI demonstrating moderate to severe dilation of the intrahepatic ducts and the common bile duct.



**Figure 2.** CT abdomen pelvis with intravenous contrast showing ampulla located in the overlapping portion of the biliary stents.



**Figure 3.** ERCP showing limited view/maneuverability of the duodenoscope through the stent.

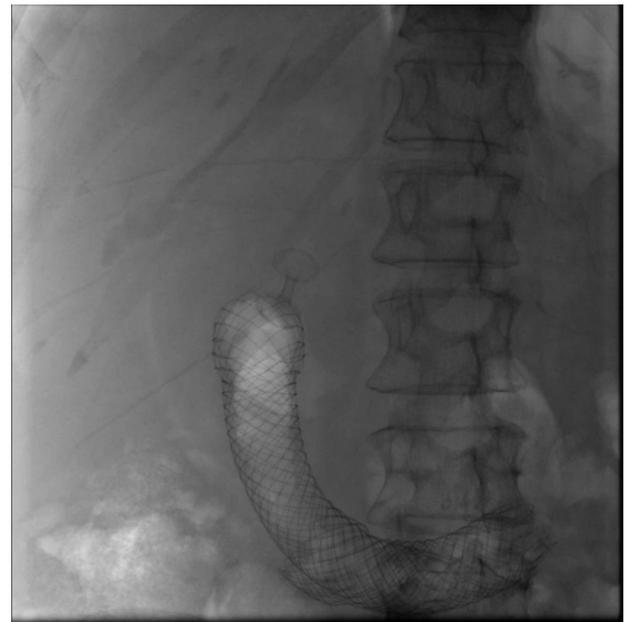


**Figure 4.** The common bile duct measured 13.7 mm associated with moderate to severe intrahepatic ductal dilatation.

Because of the acute angulation and interference of the proximal end of the duodenal stent in the duodenal bulb, it was not possible to obtain a transduodenal access of the intrapancreatic portion of the bile duct for a rendezvous procedure to place a transpapillary stent. After prolonged examination from multiple locations, a clear window to the bile duct was found just proximal to the duodenal stent within the duodenal bulb, although ascites was seen in this area. The distance between the duodenum and bile duct was 8.3 mm (Fig. 5). Cautery was activated and the bile duct was punctured using a smaller 6- × 8-mm cautery-enhanced LAMS as one-step stent placement to reduce



**Figure 5.** The distance between the duodenum lumen and bile duct was 8.3 mm with mild ascites noted in between the duodenum and the bile duct.



**Figure 6.** The position of the lumen-apposing metal stent was noted just proximal to the duodenal stent within the duodenal bulb.

bile leak and possible infection to the ascites. A long angled 0.025-inch wire was advanced toward the hilum immediately. The LAMS delivery system was further advanced into the bile duct over the wire. The stent was deployed at the distal flange first within the bile duct and then it was pulled toward the duodenum to deploy the proximal flange to ensure close approximation of the bile duct and duodenal wall. Proximal flange of the LAMS was noted within the duodenal bulb just proximal to and outside of the duodenal stent (Fig. 6). Excellent biliary drainage was confirmed. The entire procedure was completed with the patient under general anesthesia, and there were no postprocedural adverse events. On the next day, her bilirubin was down to 2.6 mg/dL. The patient was discharged home on a 7-day course of antibiotics. At 11 months follow-up, the patient was clinically doing well with normalized bilirubin level without repeat intervention.

In conclusion, direct EUS-CD with the smaller configuration of the LAMS was successful in this difficult patient with

ascites when other endoscopic interventions were not technically feasible. The smaller caliber of the stent helps target the small window of stent placement and the short distance that needs to be advanced into the duct for stent deployment. One-step placement of the fully covered LAMS would likely minimize the chance of bile leak making this device ideal for the procedure.

## DISCLOSURE

*Dr Fukami is a consultant for Boston Scientific, Olympus America, Creo Medical, and ConMed. Dr Mohapatra disclosed no financial relationships.*

*Abbreviations: EUS-CD, EUS-guided choledochoduodenostomy; CBD, common bile duct; LAMS, lumen-apposing metal stent.*

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