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## Bilateral metal stent placement: ERCP through EUS-guided gastroenterostomy

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A 64-year-old man with a history of gallbladder cancer presented with epigastric pain, nausea, vomiting, and jaundice. He had previously undergone placement of an internal-external biliary tube in the right system and a cholecystostomy tube at an outside hospital. CT showed an extended stomach with a liver mass around the hilum and upstream bile duct dilation, suggestive of gastric outlet obstruction and biliary obstruction (Fig. 1).

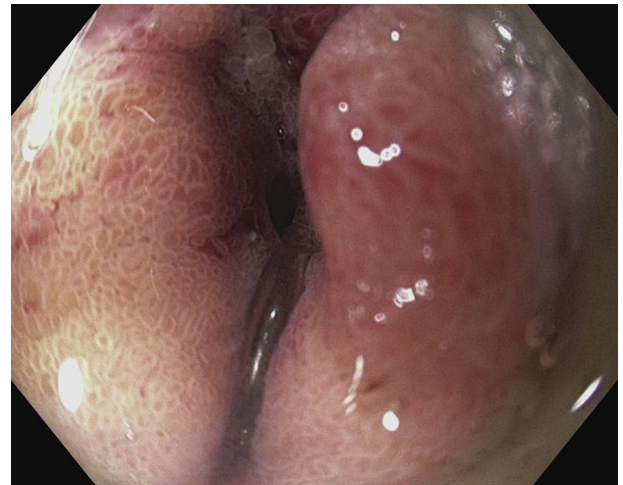
EGD revealed gastric outlet obstruction at the level of the pylorus and duodenal bulb owing to a mass lesion (Fig. 2). The EGD endoscope could not pass the stricture at the duodenum, so the decision was made for EUS-guided gastroenterostomy followed by ERCP through the gastroenterostomy (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)). The ultra-slim endoscope was able to traverse the stricture into the second portion of the duodenum. The

previously placed internal-external biliary drain was seen in an adequate position exiting the ampulla (Fig. 3).

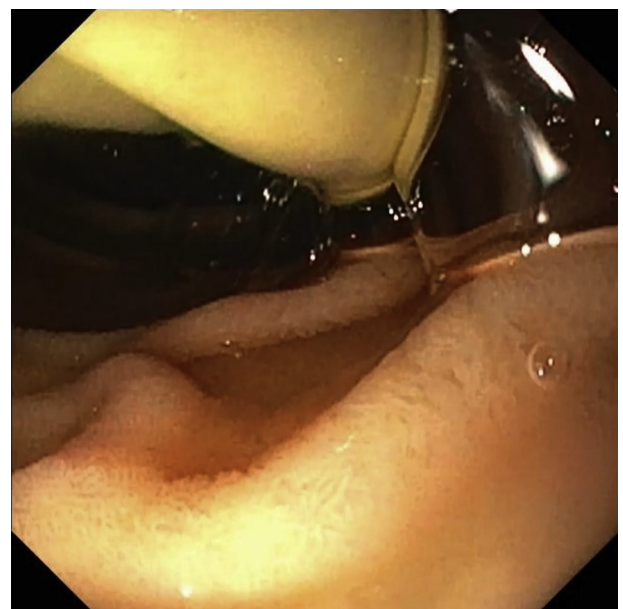
Water filling of the intestinal lumen was achieved with this endoscope while a therapeutic linear echoendoscope



**Figure 1.** Coronal CT image showing extended stomach and liver mass with upstream bile duct dilation.



**Figure 2.** Endoscopic view of the obstructed duodenal lumen.



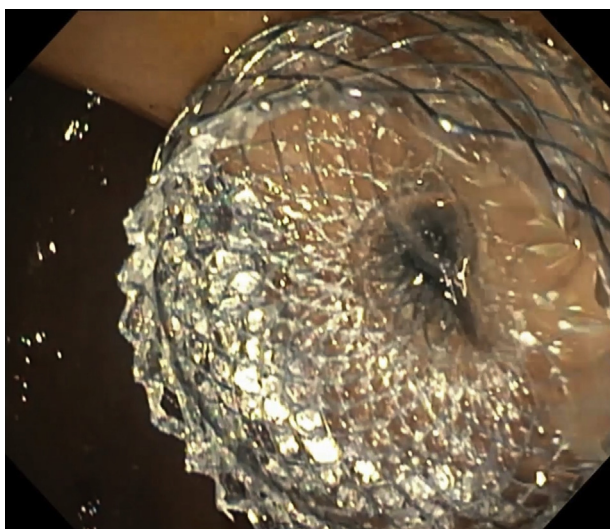
**Figure 3.** Endoscopic view of the internal-external biliary drainage tube at the level of the ampulla.



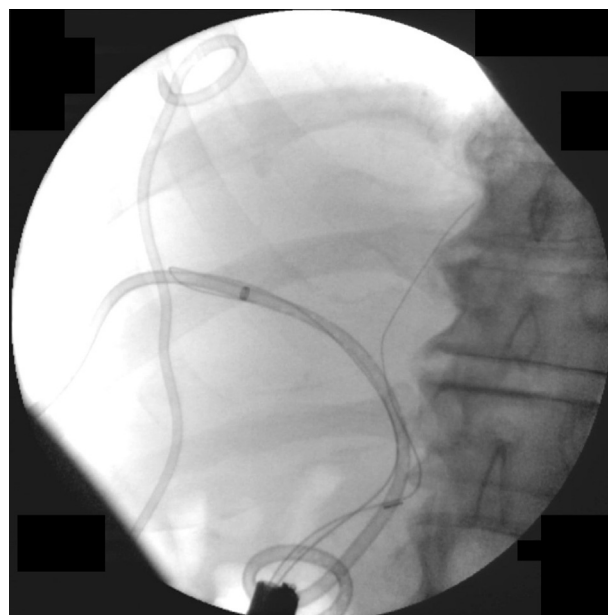
**Figure 4.** Endoscopic ultrasound image of the duodenal lumen filled with water.



**Figure 6.** Endoscopic view of balloon dilation of lumen-apposing metal stent.



**Figure 5.** Endoscopic view of lumen-apposing metal stent placed for gastrojejunostomy.



**Figure 7.** Fluoroscopic view of the guidewires in the left system and right system.

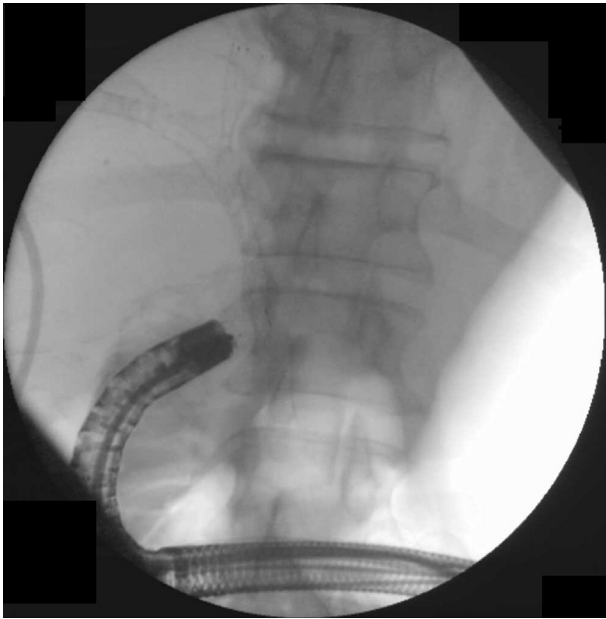
was simultaneously passed through the mouth into the stomach and visualized the water-distended distal duodenum and proximal jejunum (Fig. 4). EUS-guided gastroenterostomy was performed with use of a 15-mm electrocautery-enhanced lumen-apposing metal stent (LAMS) (Hot Axios 10 × 15 mm; Boston Scientific, Marlborough, Mass, USA) (Fig. 5). Placement was confirmed under fluoroscopy with contrast material seen filling the small bowel. Balloon dilation of the stent lumen up to 15 mm was performed (Fig. 6). The patient had a regular diet that evening.

On the following day, we proceeded with ERCP for biliary drainage. The distal flange of the LAMS seemed to be located in the duodenum. A double-channel therapeutic endoscope was easily inserted through the LAMS at the gastroenterostomy to the ampulla. We put 2 guidewires into the right and left systems (Fig. 7). The sphincterotome

could not pass the stricture in the left system. After pulling out the internal-external biliary system, we placed 2 self-expanding metal stents (10 mm × 8 cm, Zilver 635; Cook Medical, Bloomington, Ind, USA) (Fig. 8).

The patient tolerated the procedure. The symptoms of gastric outlet obstruction were gone, and he could start a regular diet later. His jaundice improved after the procedure.

ERCP in patients with altered anatomy due to malignant obstruction is consistently a challenge. EUS-guided gastroenterostomy with the use of LAMSs has been shown to be effective and safe for the relief of gastric and intestinal obstruction. There have been 2 reports of ERCP via EUS-guided gastroenterostomy,<sup>1,2</sup> in which a single-channel



**Figure 8.** Fluoroscopic view of self-expanding metal stent in the liver and lumen-apposing metal stent.

endoscope was used for ERCP. In this case, we used the double-channel therapeutic endoscope to facilitate bilateral metal stent placement with ERCP.

In conclusion, we successfully performed bilateral metal stent placement with ERCP through EUS-guided gastroenterostomy to relieve gastric outlet obstruction and biliary obstruction. The diameter of the LAMS was sufficient to allow insertion of a double-channel therapeutic endoscope, which facilitated bilateral metal stent placement. Of note,

care must be taken when endoscopic procedures are performed through a newly created gastroenterostomy.

## DISCLOSURE

*Dr Samarasena is a consultant for Medtronic, Conmed, Pentax, Olympus, and US Endoscopy and the recipient of an educational grant from Cook Medical. All other authors disclosed no financial relationships relevant to this publication.*

*Abbreviation: LAMS, lumen-apposing metal stent.*

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