Exchange of self-expandable metal stent in endoscopic ultrasound-guided hepaticogastrostomy

Endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) using a self-expandable metal stent (SEMS) has been reported to be feasible for failed biliary drainage [1,2]. However, how to exchange a SEMS after EUS-HGS remains to be established.

An 80-year-old man with acute cholangitis was referred to our institution. He had a previously placed transpapillary SEMS for ampullary carcinoma. Endoscopic drainage failed because of duodenal obstruction. The patient then underwent EUS-HGS using an 8-cm-long SEMS (fully covered Wallflex; Boston Scientific, Tokyo, Japan). Nine days later, endoscopy revealed that the SEMS had become buried in the gastric wall, so a 6-cm-long SEMS (partially covered Wallflex; Boston Scientific) was additionally placed to prevent complete migration. Seven days after the addition of the second SEMS, an X-ray revealed the SEMS to be distally dislocated toward the stomach.

We planned a SEMS exchange. First, two guide wires were inserted through the SEMS to the duodenum using a therapeutic duodenoscope. Next, the retrieval ring of the second-placed SEMS was grasped using a biopsy forceps (See Fig. 1) and the SEMS retrieved along the guide wire together with the duodenoscope, keeping the guide wire and ENBD tube in place (See Fig. 2). As a third step, the duodenoscope was advanced again over the guide wire and the first-placed SEMS was removed in a similar way (See Fig. 3). Finally, a 12-cm-long, partially covered SEMS with an uncovered proximal end and a flared distal end, specially designed for use in EUS-HGS (Supremo; Taewoong Medical, Seoul, Korea), was placed (See Fig. 4, Video 1).

Simple SEMS exchange after EUS-HGS, like transpapillary SEMS [3], is not recom-
mended because it is difficult to regain access through the hepaticogastric fistula after stent removal. The snare-over-the-wire technique has been reported to be useful in plastic stent exchange [4], but is not applicable to SEMS exchange. Although one guide wire is theoretically enough, we used two guide wires with one ENBD tube to ensure against the guide wire slipping out.

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**Competing interests:** None


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**Bibliography**

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**Video 1**

First, after the therapeutic duodenoscope was advanced into the stomach, the end of the second Wallflex was grasped by the biopsy forceps and the Wallflex was retrieved along the guide wire together with the duodenoscope. Second, the duodenoscope was advanced over the guide wire and the first Wallflex was retrieved in a similar way. Finally, the duodenoscope was advanced over the guide wire and the new covered metal stent (Supremo) was placed along the guide wire between the left hepatic duct and the stomach.