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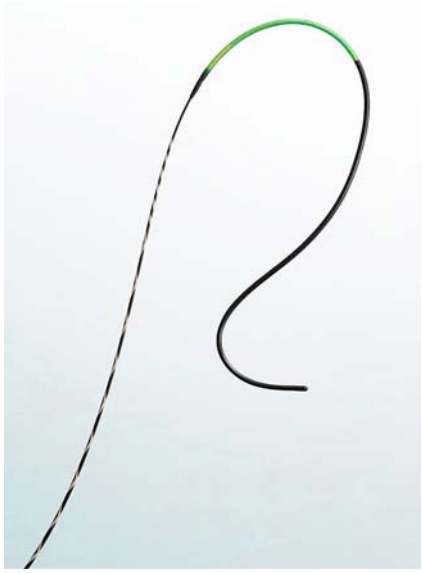
Endoscopic ultrasonography-guided antegrade stenting combined with hepaticogastrostomy/hepaticojejunostomy using ultraslim instruments



▶ **Fig. 1** The VisiGlide 2 (0.025 inch, angled type; Olympus, Tokyo, Japan) has enhanced tip flexibility and provides the same stiffness as a conventional 0.035-inch guidewire.

Techniques for endoscopic ultrasonography (EUS)-guided biliary drainage (EUS-BD) have been developed, and EUS-guided antegrade stenting (EUS-AGS) and EUS-guided hepaticogastrostomy (EUS-HGS)/hepaticojejunostomy (HJS) are suitable for gastric outlet obstruction (GOO) or surgically altered anatomy. EUS-AGS alone carries the potential risk of causing bile leakage from a fistula; however, EUS-AGS in combination with EUS-HGS or EUS-HJS appears safer, as it can reduce the risk of a bile leak [1, 2].

We present two patients who underwent EUS-HGS or EUS-HJS combined with EUS-AGS using ultraslim instruments. Patient #1 was a 62-year-old woman who had undergone a previous total gastrectomy for gastric cancer and later developed obstructive jaundice. First, a B3 branch was punctured using a 19G needle via a transjejunal approach, and a 0.025-inch guidewire (VisiGlide 2; Olympus, Tokyo, Japan) (▶ **Fig. 1**) was placed. Next, a tapered endoscopic retrograde cholangiopancreatography (ERCP) catheter (01 20 21 1; MTW Endoskopie, Düsseldorf, Germany) (▶ **Fig. 2**) was used to dilate the fistula, following successful passage of the guidewire through the stricture. EUS-AGS was then performed using a novel ultraslim uncovered self-expandable metal stent (SEMS; BileRush Selective; 5.7 Fr, 10-mm diameter; Piolax Medical Devices, Kanagawa, Japan)

▶ **Fig. 2** A tapered endoscopic retrograde cholangiopancreatography catheter (01 20 21 1; 4.8-Fr tip diameter, 6.9-Fr shaft diameter; MTW Endoskopie, Düsseldorf, Germany) passed over a 0.025-inch guidewire (upper image) and a novel ultraslim uncovered self-expandable metal stent (BileRush Selective; 5.7 Fr, 10-mm diameter, 185-cm long; Piolax Medical Devices, Kanagawa, Japan) (lower image).

(▶ **Fig. 2**). Finally, a novel 7-Fr plastic stent (TYPE-IT stent; Gadelius Medical Co. Ltd., Tokyo, Japan) [3] (▶ **Fig. 3**) was placed to create an EUS-HJS (▶ **Fig. 4**; ▶ **Video 1**).

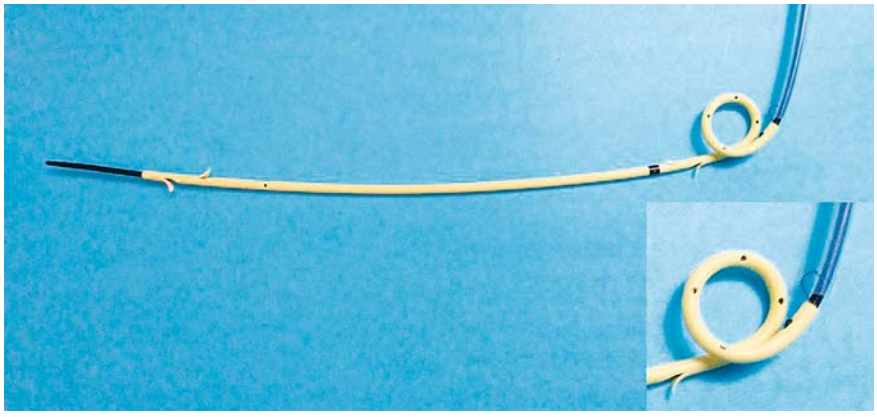
Patient #2 was a 68-year-old man with GOO caused by gastric cancer who developed obstructive jaundice. EUS-AGS and EUS-HGS were performed as described

VIDEO 1

▶ Video 1: (Patient #1) Endoscopic ultrasonography (EUS)-guided antegrade stenting using a novel 5.7-Fr ultraslim uncovered metal stent, and EUS-guided hepaticojejunostomy using a novel 7-Fr dedicated plastic stent.

VIDEO 2

▶ Video 2: (Patient #2) Endoscopic ultrasonography (EUS)-guided antegrade stenting using a novel 5.7-Fr ultraslim uncovered metal stent, and EUS-guided hepaticogastrostomy using a novel 7-Fr dedicated plastic stent.



▶ **Fig. 3** A novel plastic stent (TYPE-IT stent; Gadelius Medical Co. Ltd., Tokyo, Japan) can be retracted with a lasso, and has a 7-Fr diameter (5-Fr inner catheter-tip diameter), with total length of 20 cm, effective length of 15 cm, single-pigtail type (proximal end), and four flanges (two at the distal end and two at the proximal end).

▶ **Fig. 4** (Patient #1) Radiograph showing an endoscopic ultrasonography-guided hepaticojejunostomy with a dedicated 7-Fr plastic stent and antegrade stenting with a 5.7-Fr uncovered metal stent.

▶ **Fig. 5** (Patient #2) Radiograph showing an endoscopic ultrasonography-guided hepaticogastrostomy with a dedicated 7-Fr plastic stent and antegrade stenting with a 5.7-Fr uncovered metal stent.

above (▶ **Fig. 5**; ▶ **Video 2**). There were no complications in either case.

A covered SEMS (CSEMS) is commonly used to prevent bile leaks in EUS-HGS/HJS. A long partially covered SEMS (PCSEMS; ≥ 10 mm) can be used to prevent stent migration [4]. However, the thicker delivery system (8.5 Fr) with this long PCSEMS and the cost of two metal stents are of concern. In particular, minimum fistula dilation should be performed during EUS-BD. Therefore, EUS-AGS and EUS-HGS/HJS using various ultraslim instruments (7 Fr or less) in combination can facilitate the procedure and minimize the potential for bile leakage.

Endoscopy_UCTN_Code_TTT_1AS_2AD

Competing interests

A novel ultraslim uncovered metal stent (BileRush Selective; 5.7 Fr, 8-mm/10-mm diameter, 185-cm long) has been developed through collaborative research between Dr. Kawakami and Piolax Medical Devices, Kanagawa, Japan. Dr. Kawakami is a consultant and gives lectures for the Piolax Medical Devices and for Olympus, Tokyo, Japan. Dr. Kubota has no competing interests to declare.

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References

[1] Ogura T, Masuda D, Imoto A et al. EUS-guided hepaticogastrostomy combined with fine-gauge antegrade stenting: a pilot study. Endoscopy 2014; 46: 416–421
[2] Kumbhari V, Tieu AH, Khashab MA. EUS-guided biliary drainage made safer by a combination of hepaticogastrostomy and antegrade transpapillary stenting. Gastrointest Endosc 2014; 81: 1015–1016
[3] Umeda J, Itoi T, Tsuchiya T et al. A newly designed plastic stent for EUS-guided hepaticogastrostomy: a prospective preliminary feasibility study (with videos). Gastrointest Endosc 2015; 82: 390–396.e2
[4] Nakai Y, Isayama H, Yamamoto N et al. Safety and effectiveness of a long, partially covered metal stent for endoscopic ultrasound-guided hepaticogastrostomy in patients with malignant biliary obstruction. Endoscopy 2016; 48: 1125–1128

Bibliography
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