

## Endoscopic ultrasound-guided hepaticogastrostomy stent exchange using a novel spiral plastic stent

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Endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) can be attempted for patients with failed endoscopic retrograde cholangiopancreatography [1,2]. EUS-HGS has recently become indicated for not only malignant biliary obstruction, but also benign biliary disease [3,4]. In benign biliary disease, a self-expandable metal stent (SEMS) might not be suitable, because stent removal may be challenging if the duration of stent deployment is prolonged. Therefore, a plastic stent is usually used. According to a previous study, regular stent exchange may have a clinical impact on prevention of benign biliary disease [4]. However, flaps are provided at the distal end in most plastic stents to prevent stent dislocation. Unlike the common bile duct, the intrahepatic bile duct has side branches; therefore, during stent removal, the flaps may become stuck in the side branches. Consequently, a plastic stent with flaps has a risk of rupture, as previously described [5]. To improve stent removability, a spiral-shaped plastic stent has been designed and is available in Japan (Gadelius Medical Co., Ltd, Tokyo, Japan) (► Fig. 1). This stent has no side flaps; therefore, stent removal through EUS-HGS can be easily performed without the stent flaps becoming stuck in the bile duct side branches. To prevent stent dislocation, the distal end is spiral in shape, and to prevent stent migration, the proximal end is a pigtail shape. A case of successful EUS-HGS stent exchange using this novel plastic stent is reported.

An 88-year-old woman was admitted because of obstructive jaundice caused by a hepaticojejunostomy stricture. In addition, a huge intrahepatic bile duct stone was present. She first underwent EUS-HGS using SEMS, and because of her advanced age, only stent exchange to a spiral-shaped plastic stent was performed (► Fig. 2). After 6 months, she was admitted again for stent exchange. First, a



► Fig. 1 A spiral-shaped plastic stent (Gadelius Medical Co., Ltd, Tokyo, Japan).



► Fig. 2 The spiral-shaped plastic stent was deployed as an endoscopic ultrasound-guided hepaticogastrostomy stent.

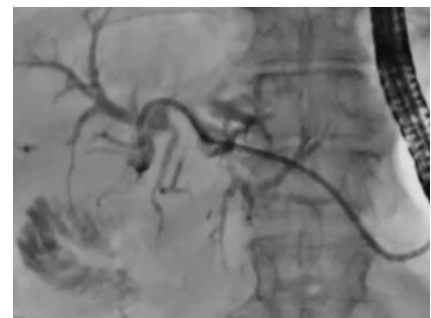


► Fig. 3 A guidewire was deployed beside the stent.

standard duodenoscope was inserted into the stomach. Then, after a guidewire was deployed beside the stent (► Fig. 3), stent removal using grasping forceps was attempted. As the stent had no side flaps, stent removal was easily performed without stent rupture (► Fig. 4). After evaluation of the biliary system, a spiral-shaped plastic stent was deployed without any adverse events (► Fig. 5, ► Video 1).



► Fig. 4 As the stent had no side flaps, stent removal was easily performed without stent rupture.



► Fig. 5 The spiral-shaped plastic stent was deployed.



► Video 1 Removal of an endoscopic ultrasound-guided hepaticogastrostomy stent was attempted. As this stent had no side flaps, removal was easily performed without stent rupture.

In conclusion, a spiral-shaped plastic stent may be useful as an EUS-HGS stent for patients who undergo scheduled stent exchange because of its easy removability.

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### Conflict of Interest

The authors declare that they have no conflict of interest.

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### References

- [1] Ogura T, Higuchi K. Endoscopic ultrasound-guided hepaticogastrostomy: technical review and tips to prevent adverse events. *Gut Liver* 2021; 15: 196–205. doi:10.5009/gnl20096
- [2] Dell'Anna G, Ogura T, Vanella G et al. Endoscopic ultrasound guided biliary interventions. *Best Pract Res Clin Gastroenterol* 2022; 60–61: 101810
- [3] Kamal F, Khan MA, Lee-Smith W et al. Efficacy and safety of EUS-guided biliary drainage for benign biliary obstruction – a systematic review and meta-analysis. *Endosc Ultrasound* 2023; 12: 228–236. doi:10.4103/EUS-D-22-00077
- [4] Ogura T, Takenaka M, Shiomi H et al. Long-term outcomes of EUS-guided transluminal stent deployment for benign biliary disease: multicenter clinical experience (with videos). *Endosc Ultrasound* 2019; 8: 398–403
- [5] Ogura T, Okuda A, Nishioka N et al. Stent removal using novel balloon catheter after rupture of stent for EUS-guided pancreatic duct drainage. *Endosc Ultrasound* 2019; 8: 63–65. doi:10.4103/eus.eus\_10\_18

### Bibliography

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