Reintervention for stent occlusion after endoscopic ultrasound-guided hepaticogastrostomy with novel use of a precut needle-knife

Endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) has gained popularity as an alternative biliary drainage method [1, 2]; however, reintervention after EUS-HGS remains to be elucidated. In EUS-HGS, use of a biliary stent that is longer than 100 mm is recommended in order to prevent stent migration [2, 3]. However, such stent placement occasionally makes reintervention challenging owing to the long length of the stent in the gastric lumen. A few reports have described technical efforts involved in reintervention after EUS-HGS [4, 5]. We describe a patient who underwent successful reintervention via a novel use of a precut needle-knife.

A 74-year-old woman with recurrent pancreatic cancer after pancreaticoduodenectomy presented with recurrent cholangitis. An 8 × 100 mm covered metal stent (Niti-S biliary covered stent; Taewoong Medical, Seoul, South Korea) had been previously deployed during EUS-HGS for biliary obstruction at the hepatic hilum. Stent occlusion occurred 4 months after EUS-HGS. Abdominal computed tomography showed a dilated intrahepatic bile duct, and stent occlusion was confirmed on endoscopy (Fig. 1). Revisionary stent placement was attempted. First, the advancement of an endoscopic retrograde cholangiopancreatography (ERCP) catheter was attempted via the proximal end of the HGS stent; however, the long stent length in the gastric lumen rendered catheter insertion impossible. Therefore, reintervention through the stent mesh was attempted. A 0.035-inch guidewire (Jagwire; Boston Scientific, Marlborough, Massachusetts, USA) was successfully passed through the mesh of the previously deployed hepaticogastrostomy stent (Niti-S biliary covered stent, 8 × 100 mm; Taewoong Medical, Seoul, South Korea). An ERCP catheter could not be passed. Subsequently, a diathermic dilator was utilized, but it failed to break the stent mesh. Next, the use of a precut needle-knife (NeedleCut3V; Olympus, Tokyo, Japan) was considered. Using this knife, the stent mesh was broken easily (Fig. 3), and a 7-Fr plastic stent (Flexima; Boston Scientific) was successfully deployed via the stent mesh into the left intrahepatic bile duct (Fig. 4, Video 1). Cholangitis resolved in a few days. The use of a precut needle-knife is simple and may be considered as a useful treatment option for reintervention after EUS-HGS.

Fig. 1 Stent occlusion after endoscopic ultrasound-guided hepaticogastrostomy. a Abdominal computed tomography showed a dilated intrahepatic bile duct. b Gastroscopy showed an occluded hepaticogastrostomy stent.

Fig. 2 A 0.035-inch guidewire (Jagwire; Boston Scientific, Marlborough, Massachusetts, USA) was passed successfully through the mesh of the previously deployed hepaticogastrostomy stent (Niti-S biliary covered stent, 8 × 100 mm; Taewoong Medical, Seoul, South Korea).

Competing interests

None

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**Video 1** Using a precut needle-knife, the mesh of the previously deployed hepaticogastrostomy stent was broken easily. Thereafter, a 7-Fr biliary plastic stent was deployed successfully via the stent mesh into the left intrahepatic bile duct.

**Fig.3** A precut needle-knife (NeedleCut3V; Olympus, Tokyo, Japan) was inserted over the guidewire and could break the stent mesh easily.

**Fig.4** A 7-Fr biliary plastic stent (70 mm long, Flexima; Boston Scientific, Marlborough, Massachusetts, USA) was deployed successfully via the stent mesh into the left intrahepatic bile duct.