One-step stent deployment of EUS-guided hepaticogastrostomy using a novel covered metal stent with a fine-gauge stent delivery system (with video)

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EUS-guided hepaticogastrostomy (EUS-HGS) is indicated for patients with surgically altered anatomy or an inaccessible papilla.[1,2] The rate of adverse events is also not infrequent. Various kinds of adverse events have been reported, such as bleeding, bile peritonitis, or stent migration.[3,4] During EUS-HGS, bile leakage into the abdominal cavity from the bile duct might occur after fistula dilation. If this step could be omitted, procedure time might be shortened. In addition, risk of bleeding due to dilation devices might also be reduced. Recently, a novel fully covered self-expandable metal stent with a fine-gauge stent delivery system (8 mm × 12 cm, HANAROSTENT® Biliary Full Cover Benefit™; M.I. Tech, Seoul, Korea) has become available in Japan [Figure 1]. This stent delivery system is only 5.9 Fr. In addition, the tip of this stent is extremely tapered and stiff. Herein, we describe a one-step stent deployment technique for EUS-HGS using this novel stent.

A 79-year-old female underwent gastrojejunostomy due to malignant duodenal obstruction caused by cancer of the pancreatic head. After this procedure, although she underwent chemotherapy, obstructive jaundice developed as a complication. EUS-HGS was therefore attempted. Because duodenal obstruction was complicated, antegrade stenting was not attempted to prevent reflux cholangitis. The intrahepatic bile duct was punctured using a 19-G needle. After aspirating bile juice, the

Figure 1. A novel fully covered self-expandable metal stent with a fine-gauge stent delivery system (8 mm × 12 cm, HANAROSTENT® Biliary Full Cover Benefit™; Boston Scientific Japan, Tokyo, Japan)

Video available on: www.eusjournal.com

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contrast medium was injected [Figure 2]. Because stent deployment was performed in a single step, contrast medium injection was performed until an image of the left hepatic bile duct was obtained [Figure 3]. After the 0.025-inch guidewire was inserted into the common bile duct [Figure 4], insertion of the stent delivery system was attempted without any dilation. The stent delivery system was successfully inserted into the intrahepatic bile duct and was successfully deployed from the intrahepatic bile duct to the stomach without any adverse events [Figure 5]. During stent deployment, to prevent focal cholangitis, we carefully performed stent deployment from the confluence to the stomach as shown in Video 1. Until the patient's death (2 months later), no adverse events were seen.

In our technique, 0.025-inch guidewire was used. Compared with 0.035-inch guidewire, 0.025-inch guidewire is soft. However, benefit of 0.025-inch guidewire might be that guidewire manipulation is easily attempted compared with 0.035-inch guidewire because the resistance between guidewire and fine-needle aspiration needle is smaller in 0.025-inch guidewire. During EUS-HGS, guidewire manipulation is one of the limiting steps, as previously described.[5] In addition, recent 0.025-inch guidewire is relatively stiff. Therefore, we usually performed EUS-HGS using 0.025-inch guidewire. In view of fistula dilation, 0.035-inch guidewire might be helpful to obtain easy dilation. However, this novel stent is indicated with 0.025-inch guidewire. This might be one of the disadvantages of this novel stent.

In conclusion, our technique might reduce the rate of adverse events during EUS-HGS, although a prospective randomized trial is needed to confirm these findings.

Declaration of patient consent

The authors certify that they have obtained all appropriate

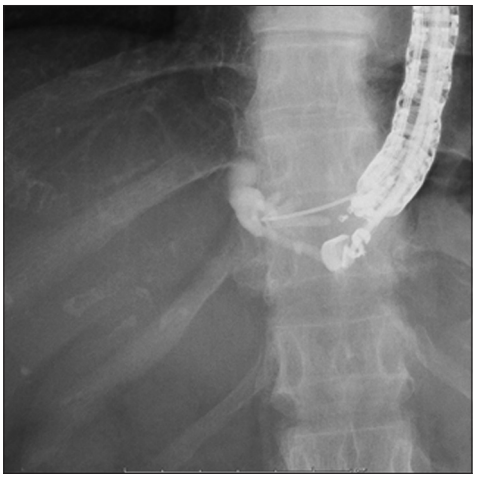

Figure 2. The Intrahepatic Bile Duct Is Punctured Using 19G Needle, And The Contrast Medium Is Injected

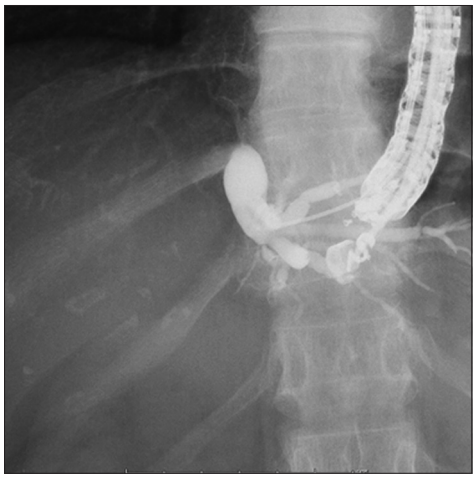

Figure 3. The Contrast Medium Injection Is Performed Until Obtaining Left Intrahepatic Bile Duct

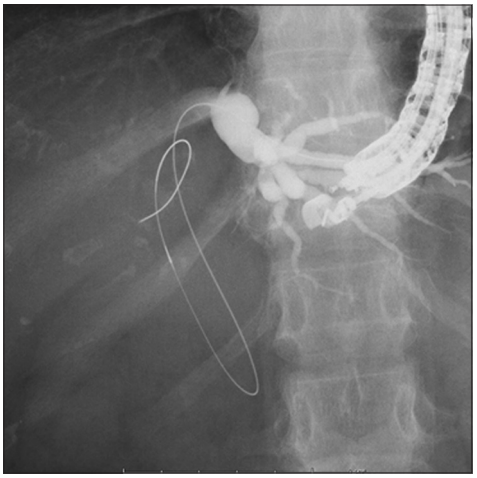

Figure 4. The Guidewire Is Inserted Into The Common Bile Duct

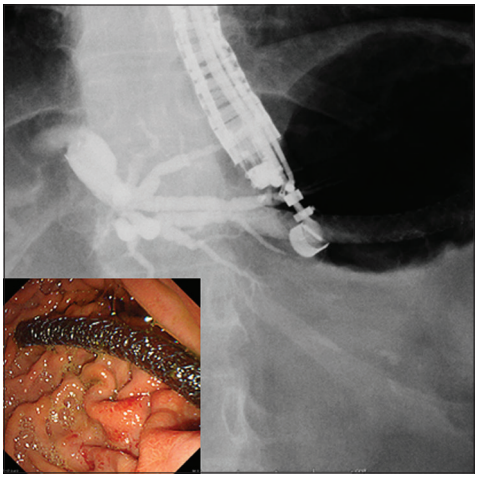

Figure 5. Stent Deployment Is Successfully Performed

patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her names and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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