

Transverse stent placement for hilar malignant biliary obstruction through an endoscopic ultrasound-guided hepaticogastrostomy route

A 70-year-old woman who had undergone endoscopic placement of multiple stents for hilar biliary obstruction due to gallbladder cancer was admitted with cholangitis. In her previous hospitalization, endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) had been performed for the bile duct at segment

III (B3) using a partially covered self-expandable metal stent (SEMS; modified Giobor, 10×80 mm; Taewoong Medical Inc., Gimpo, Korea [1]). To manage subsequent episodes of cholangitis, two uncovered SEMSs were placed via the transpapillary route for B7 and B8 in a partial stent-in-stent fashion (▶ **Fig. 1**). On this

admission, endoscopic drainage was scheduled to manage segmental cholangitis in B8.

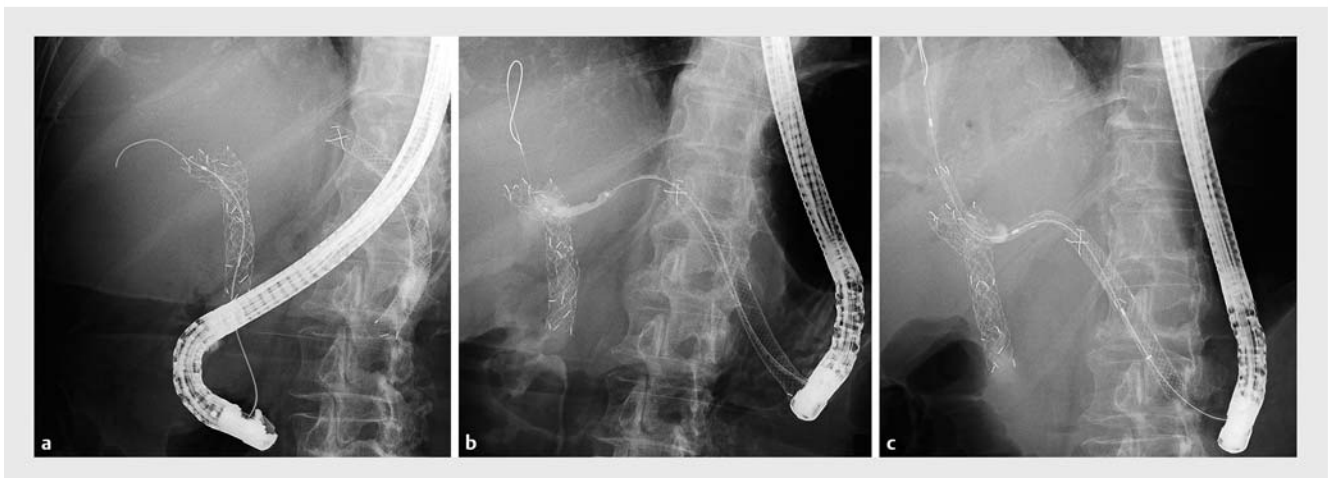
In the first session, transpapillary biliary drainage of B8 failed as a cannula could not be passed through the mesh wall of the indwelling SEMS (▶ **Fig. 2 a**). Therefore, we attempted to access B8 through



▶ **Fig. 1** Radiographic view showing placement of uncovered metal stents in a partial stent-in-stent fashion following endoscopic ultrasound-guided hepaticogastrostomy.



▶ **Video 1** Placement of a metal stent bridging a hilar malignant biliary stricture through an indwelling hepaticogastrostomy stent.



▶ **Fig. 2** Placement of a metal stent bridging a hilar malignant biliary stricture through an indwelling hepaticogastrostomy (HGS) stent after an unsuccessful transpapillary re-intervention. **a** During the transpapillary approach to B8, a cannula cannot be passed through the mesh wall of the indwelling SEMS. **b** Balloon dilation of a mesh interstice of the self-expandable metal stent (SEMS) is performed. **c** An uncovered SEMS is placed between B8 and B3 via the EUS-HGS route.

the EUS-HGS stent. Using a side-viewing duodenoscope, we passed a guidewire into the ventral branch of B8 and dilated the mesh of the SEMS using a balloon catheter (► **Fig. 2b**). We then placed a nasobiliary catheter to manage the cholangitis. In the following session, we trimmed the gastric end of the EUS-HGS stent using argon plasma coagulation (ESG-100; Olympus, Tokyo, Japan) to facilitate insertion of the stent [2] and deployed an uncovered SEMS (Niti-S, 10×80 mm; Taewoong Medical Inc.) (► **Fig. 2c**; ► **Video 1**). There were no procedure-related adverse events. Endoscopists occasionally face technical difficulties in managing occlusion of SEMSs placed for hilar biliary obstruction. The transpapillary approach is often used for re-intervention for the right-sided biliary system and, recently, the feasibility of EUS-guided hepaticoduodenostomy has been reported [3, 4]; however, both procedures are technically demanding. Furthermore, EUS-guided access to B8 is often anatomically impossible. Access to the right intrahepatic bile duct via the EUS-HGS route can offer an alternative strategy in this setting [5].

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Competing interests

None

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