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Endobiliary radiofrequency ablation through an EUS-guided hepaticogastrostomy fistula for hilar malignant biliary stenosis

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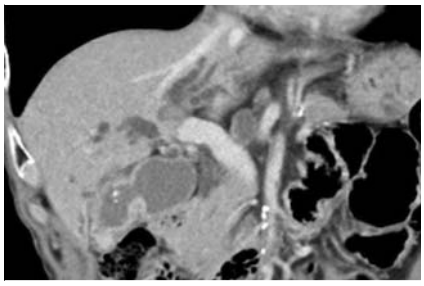
Endobiliary radiofrequency ablation (RFA) for malignant biliary strictures due to unresectable cholangiocarcinoma is reportedly expected to prolong the patency of self-expandable metallic stents (SEMS) [1–3]. Transpapillary endoscopic retrograde cholangiopancreatography (ERCP) has been reported for endobiliary RFA; however, a few reports discuss the approach from the fistula made during endoscopic ultrasound biliary drainage (EUS-BD)[4–5].

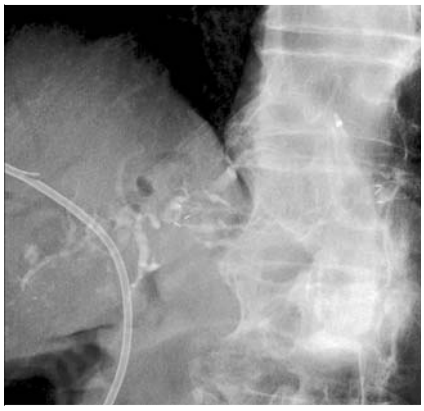
In a 75-year-old man with hilar cholangiocarcinoma (▶ **Fig. 1**), a plastic stent was deployed in the right hepatic duct. Left hepatic duct drainage using ERCP was difficult due to ductal stenosis. Thus, EUS-guided hepaticogastrostomy (EUS-HGS) was performed (▶ **Fig. 2**).

Because the cholangitis relapsed 5 months after EUS-HGS, stent-in-stent (SIS) deployment of SEMS was considered. After SIS deployment of SEMS, endobiliary RFA was expected to be difficult. Therefore, endobiliary RFA was performed in anticipation of a longer patency period before SEMS deployment.

A guidewire was placed through the EUS-HGS fistula. An endobiliary RFA catheter (Habib EndoHPB Catheter, Boston Scientific Corporation, Marlborough, Massachusetts, United States) was guided to the stenosis site, which was ablated for 90 seconds through the EUS-HGS fistula (VIO 200 D, Effect8, 7 W, Erbe Elektromedizin GmbH, Tubingen, Germany) (▶ **Fig. 3**). An uncovered SEMS (HANAROSTENT uncover, M.I TECH, Gyeonggi, Korea) was deployed through the fistula. After that, a plastic stent (Thorough and Pass Type IT, GADELIUS MEDICAL, Tokyo, Japan) was inserted into the EUS-HGS fistula after SEMS deployment to maintain the EUS-HGS fistula. ERCP was then performed. A guidewire was inserted into the right hepatic duct and another uncovered SEMS (ZEOSTENT V, Zeon Medical Inc., Tokyo, Japan) was deployed therein (▶ **Fig. 4**, ▶ **Video 1**). There was minor postprocedural liver damage due to mild cholangitis; however, no serious adverse events were observed.



▶ **Fig. 1** Contrast-enhanced computed tomography revealed a hilar cholangiocarcinoma.



▶ **Fig. 2** A plastic stent was deployed in the right hepatic duct and drainage of the left hepatic duct was performed using endoscopic ultrasound-guided hepaticogastrostomy.

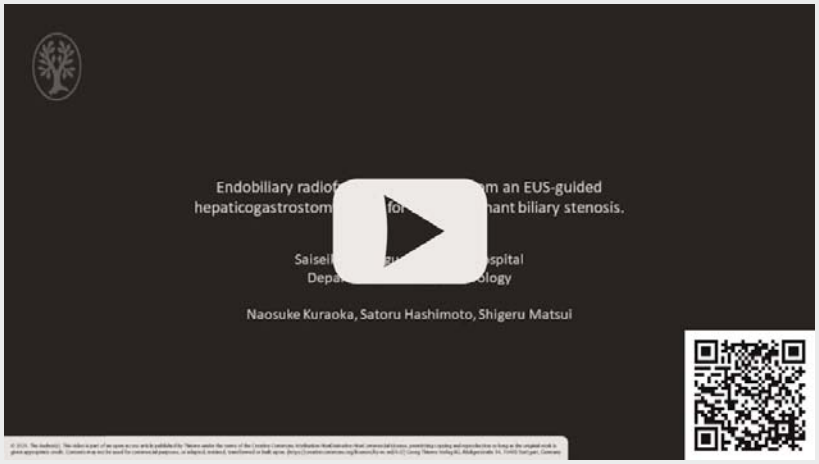
▶ **Fig. 3** An endobiliary radiofrequency ablation catheter was guided to the stenosis site, which was ablated for 90 seconds.

▶ **Fig. 4** Stent-in-stent deployment of self-expandable metallic stent was performed.

Conclusions

Reintervention was possible through the EUS-BD fistula. Endobiliary RFA from the EUS-BD fistula is effective when the guidewire from the transpapillary approach cannot pass the biliary stricture.

VIDEO



▶ **Video 1** After cholangiography of the fistula site, the stenosis was ablated. An uncovered SEMS was deployed through the fistula. Then, another uncovered SEMS was deployed in the right hepatic duct with transpapillary ERCP.

Competing interests

The authors declare that they have no conflict of interest.

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