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Cholecystohepaticogastrostomy: novel endoscopic gallbladder drainage technique to prevent acute cholecystitis following endoscopic ultrasound-guided biliary drainage

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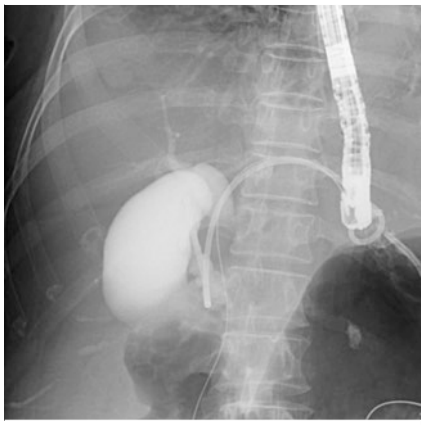
Video 1 Cholecystohepaticogastrostomy was performed via the hepaticogastrostomy route following endoscopic ultrasound-guided hepaticogastrostomy with antegrade stenting to prevent cholecystitis.

▶ **Fig. 1** Biliary access was achieved through the hepaticogastrostomy route, and successful cannulation of the cystic duct and gallbladder was confirmed by contrast injection.



▶ **Fig. 2** A plastic stent (7-Fr in diameter; 18 cm in length; Through & Pass double-pigtail stent; Gadelius Medical, Tokyo, Japan) was placed between the gallbladder and the stomach.

▶ **Fig. 3** A fully covered metal stent (10 mm in diameter; 7 cm in length; SciTech Inc., Seoul, Korea) was placed antegradely across the biliary obstruction and major duodenal papilla.

▶ **Fig. 4** The hepaticogastrostomy stent (7-Fr in diameter; 14 cm in length; Through & Pass Type IT; Gadelius Medical, Tokyo, Japan) for additional drainage was placed between the intrahepatic duct and the stomach.

For malignant distal biliary obstruction (DBO), placing a stent in an antegrade manner across the obstruction and papilla, followed by endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS), establishes dual biliary drainage pathways and may prolong stent patency [1]. However, acute cholecystitis can occur after biliary drainage with a fully covered self-expandable metal stent (FCSEMS) in cases of DBO [2]. We present a novel endoscopic approach for gallbladder drainage via the HGS tract, offering a viable option for high-risk patients who develop acute cholecystitis following FCSEMS placement.

A 72-year-old woman with advanced pancreatic adenocarcinoma presented with fever, chills, and hyperbilirubinemia. She had previously undergone EUS-guided gastrojejunostomy for gastric outlet obstruction and EUS-HGS for DBO 1 month prior. Imaging revealed dilated intrahepatic ducts and common bile duct, as well as gallbladder distention, suggesting biliary infection due to HGS stent occlusion. Upon admission, EUS-HGS was performed, and biliary access was obtained via the HGS route, with aspiration of purulent bile. Following successful cystic duct cannulation, selective gallbladder cannulation was confirmed through contrast injection (▶ **Fig. 1**, ▶ **Video 1**).

A plastic stent (7-Fr diameter; 18 cm length; Through & Pass double-pigtail stent; Gadelius Medical, Tokyo, Japan) was placed between the gallbladder and stomach (▶ **Fig. 2**). Additionally, an

FCSEMS (10 mm diameter; 7 cm length; SciTech Inc., Seoul, Korea) was placed across the biliary obstruction and the major duodenal papilla following balloon dilation of the HGS tract (▶ **Fig. 3**). Subsequently, an HGS stent (7-Fr diameter; 14 cm length; Through & Pass Type IT; Gadelius Medical) was placed between the intrahepatic duct and the stomach (▶ **Fig. 4**). The patient's symptoms improved, and she was discharged in stable condition.

This novel gallbladder drainage technique via the HGS tract broadens treatment options for high-risk patients at risk of acute cholecystitis following EUS-HGS with FCSEMS.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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