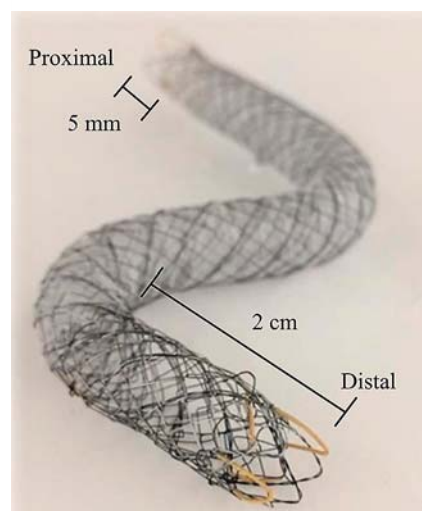


## Bile peritonitis after placement of a metallic stent in endoscopic ultrasound-guided hepaticogastrostomy: A pitfall and the rescue technique



The complications of endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) are different from those of endoscopic retrograde cholangiopancreatography (ERCP). Among these, bile peritonitis can be fatal, and insertion of a metallic stent is recommended to pre-



► **Fig. 1** The metallic stent used for endoscopic ultrasound-guided hepaticogastrostomy. The distal 2-cm and proximal 5-mm portions are uncovered.

vent this complication [1]. There have been a few reports about bile peritonitis after EUS-HGS [2,3]. We report a rare case of bile peritonitis which occurred immediately after the placement of a metallic stent, and the rescue technique. A 58-year-old man with pancreatic head cancer was admitted to our hospital with obstructive jaundice and duodenal stricture. We performed simultaneous duodenal stent placement and EUS-HGS, without any complication during the procedure. A metal stent (EGIS biliary partially covered stent, 8 mm × 12 cm; S&G Biotech, Yongin-si, Korea) (► **Fig. 1**) was successfully placed (► **Fig. 2 a**); however, abdominal pain and fever developed after the procedure. Abdominal computed tomography (CT) on the next day showed marked ascites due to bile peritonitis around the liver and spleen. We considered the possibility of bile juice leakage from the distal uncovered portion of the metal stent (► **Fig. 2 b**), and immediately performed both percutaneous and endoscopic treatments for bile peritonitis. Percutaneous drainage tubes were placed around the liver and spleen, and a guidewire and an ERCP catheter were

inserted into the bile duct using a duodenoscope. Although no bile leakage was observed in the endoscopic image and the leakage point was obscure in the fluoroscopic image, we placed two additional metal stents, one in the antegrade route (ZEO Stent V, uncovered biliary stent; ZEON Medical, Tokyo, Japan) and one in the HGS route through the EGIS stent by using the stent-in-stent method (BileRush Advanced, covered biliary stent; Piolax Medical, Kanagawa, Japan) (► **Fig. 2 c**). The bile peritonitis resolved (► **Fig. 2 d**), and the percutaneous tubes were removed 7 days after the secondary procedure. In conclusion, we should consider the possibility of bile peritonitis after EUS-HGS, even with placement of a metal stent.

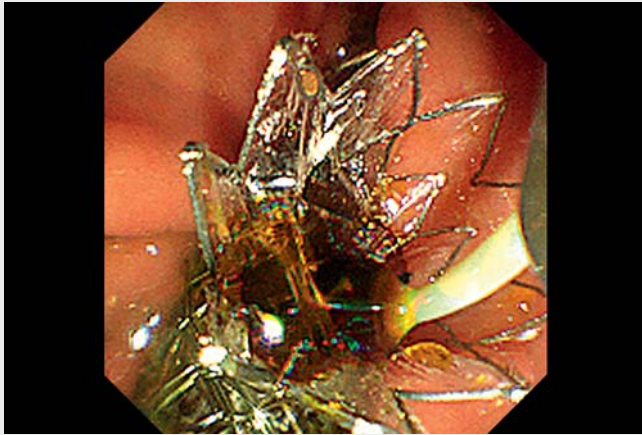
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### Competing Interest

The authors declare that they have no conflict of interest.



► **Fig. 2 a** Fluoroscopic image showing successful placement of the metallic stent in the hepaticogastrostomy (HGS) route. **b** Abdominal computed tomography revealing marked ascites around the liver and spleen due to bile peritonitis. Bile juice may have leaked from the distal uncovered strictured portion of the metallic stent (arrow). **c** The placement of metallic stents in the antegrade route and HGS route for the treatment of bile peritonitis.



**Video 1** Bile peritonitis after placement of a metallic stent in endoscopic ultrasound-guided hepaticogastrostomy (EUS-HGS) was treated by both percutaneous and endoscopic approaches.

## Bibliography

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