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Endoscopic ultrasound-guided drainage of a liver abscess with a self-expandable metal stent as rescue therapy after plastic stent misdeployment

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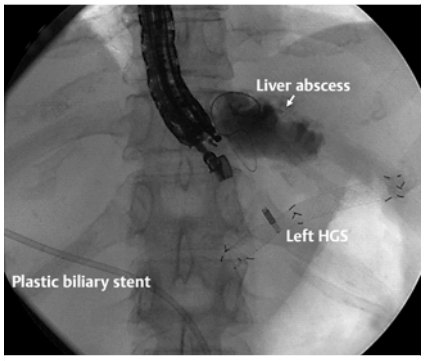
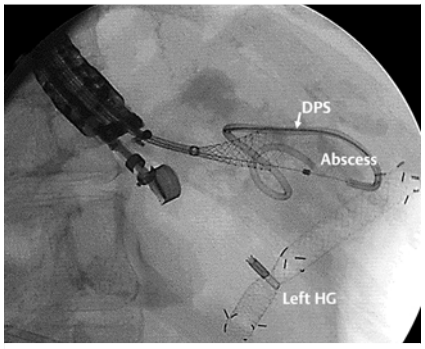
▶ **Fig. 1** Computed tomography scan showing a 5-cm abscess in liver segment II.



▶ **Fig. 2** Radiological view of a plastic biliary stent into the right duct and an endoscopic ultrasound (EUS)-guided hepaticogastrostomy into the left duct. Also, the liver abscess is outlined after contrast injection.



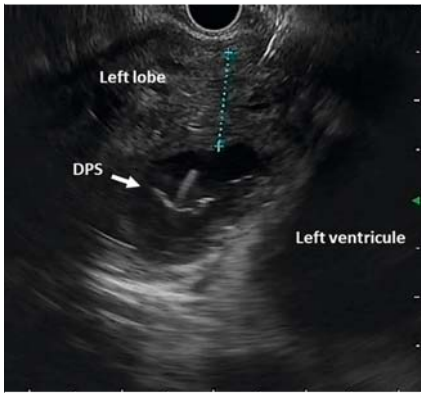
▶ **Fig. 3** Radiological view of the self-expandable metal stent being deployed from the liver abscess containing the double-pigtail stent. The previously placed EUS-guided hepaticogastrostomy can be observed in the lower right quadrant.

Endoscopic ultrasound (EUS) is an alternative to percutaneous drainage of abdominal abscesses [1]. Percutaneous abscess drainage may be challenging in poorly accessible locations [2].

A 53-year-old woman underwent palliative biliary drainage for a Bismuth IIIb hilar cholangiocarcinoma. A transpapillary plastic biliary stent was placed by endoscopic retrograde cholangiopancreatography (ERCP) into the right hepatic duct and EUS-guided hepaticogastrostomy performed with a metal stent into the left hepatic duct. Four weeks later, a 5-cm subphrenic abscess was noted in liver segment II (▶ **Fig. 1**).

The abscess location was deemed unfavorable for percutaneous drainage. An EUS-guided approach was suggested instead. The abscess was imaged under linear EUS and punctured with a 19-G needle from the distal esophagus. Serial dilation with a 6F cystotome and 4-mm balloon dilation was performed (▶ **Fig. 2**). A 7-Fr 5-cm double-pigtail stent (DPS) was then inadvertently deployed fully within the abscess (▶ **Fig. 3**). A covered biliary self-expandable metal stent (SEMS) was placed across the tract from the gastroesophageal junction just below the Z line into the abscess, balloon-dilated to 10 mm, and anchored to the esophageal wall with a hemostatic clip (▶ **Fig. 4**, ▶ **Fig. 5**). A 0.035-inch guidewire was coiled within the abscess. The echoendoscope was removed over the wire. An ultra-slim gastroscope was carefully advanced over the wire through the SEMS into the abscess. The DPS was grasped with a 5-F tripod forceps under endoscopic view and repositioned into the stomach under gentle traction (▶ **Video 1**).

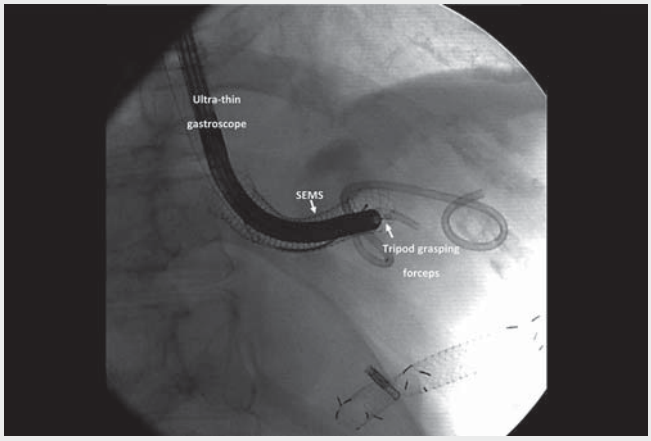
A computed tomography (CT) scan performed 2 weeks later confirmed abscess resolution with in-situ SEMS and coaxial DPS. Both stents were removed 1 week later using a standard gastroscope.



▶ **Fig. 4** Endoscopic ultrasound view of the misdeployed double-pigtail stent inside the liver abscess. Note the colse proximity to the left ventricule.

▶ **Fig. 5** Endoscopic view of the self-expandable metal stent in the distal esophagus clipped to the mucosa.

Drainage of high-grade hilar cholangiocarcinoma remains challenging. ERCP with transpapillary biliary stenting combined with left-sided EUS-guided hepatogastrostomy appears promising [3–4]. Misdeployment of a DPS within an acute collection is a potentially serious adverse event [5]. As in other related scenarios, placement of a fully covered SEMS bridged the puncture tract. This allowed transluminal access into the abscess similar to that provided by natural orifice transluminal endoscopic surgery (NOTES), and eventually DPS reposition-



Video 1 Radiological view of the insertion through the self-expandable metal stent of an ultra-thin gastroscope with a tripod grasping forceps repositioning the previously misdeployed double-pigtail stent.

ing and successful transluminal abscess drainage.

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Competing interests

Dr. Manuel Perez-Miranda is a consultant for Boston Scientific, Olympus, Medtronic and M.I.Tech.

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