

First report of endoscopic ultrasound-guided cholecystogastrostomy with a Nagi covered metal stent for palliation of jaundice in extrahepatic biliary obstruction



Fig. 1 Endoscopic ultrasound (EUS) image showing the unsuccessful attempt to puncture the bile duct with a 19G fine needle aspiration (FNA) needle.

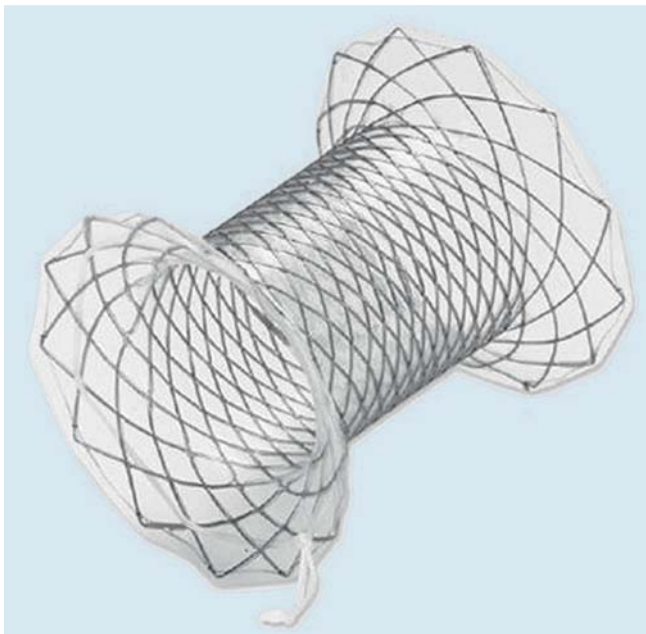


Fig. 2 The Nagi stent, a silicone-covered nitinol stent with bilateral anchor flanges.

Endoscopic ultrasound (EUS)-guided drainage procedures, such as pancreatic pseudocyst drainage, biliary drainage, and gallbladder drainage, are being increasingly performed in specialist centers [1–4]. A 30-year-old man with unresectable periampullary cancer, who had undergone biliary plastic stenting 1 year previously, presented with recurrent jaundice and gastric outlet obstruction for 2

weeks. Blood test results showed his bilirubin was 15 mg/dL with an alkaline phosphatase of 800 u/L. An ultrasound of his abdomen showed dilated intrahepatic biliary radicals and a dilated bile duct with a periampullary mass. Side-viewing endoscopy was unsuccessful despite dilation of the gastric outlet. EUS-guided choledochoduodenostomy failed because the bile duct, which was thick-

ened due to the plastic stent, could not be punctured with a 19G fine needle aspiration (FNA) needle (Fig. 1). EUS-guided cholecystogastrostomy was therefore performed using a silicone-covered nitinol stent (14 mm in diameter, 20-mm long) with bilateral 24-mm diameter anchor flanges (Nagi; Taewoong Medical Co. Ltd., Seoul, Korea) (Fig. 2). This stent provides stability and minimizes migration. The diameter of the delivery system is 10 Fr.

The gallbladder was visualized using a linear echoendoscope (GF-UCT 180; Olympus) at the level of the antrum and was punctured with a 19G needle (Cook Endoscopy, Winston-Salem, North Carolina, USA) (Fig. 3). After removal of the stylet, bile was aspirated, and contrast was injected into the gallbladder, revealing a patent cystic duct. A 0.035-inch guidewire (Jagwire; Boston Scientific, Natick, Massachusetts, USA) was inserted into the gallbladder under fluoroscopic guidance. The needle was removed and the puncture site was dilated using 6-Fr and 7-Fr dilators (Soehendra biliary catheters; Cook Endoscopy) and then with a 4-mm balloon (Hurricane; Boston Scientific, Tokyo, Japan) (Fig. 4a). Finally, a Nagi stent (Taewoong Medical Co. Ltd.) was deployed across the cholecystogastrostomy tract (Fig. 4b).

The procedure resulted in biliary decompression with resolution of the patient's jaundice. The biliary plastic stent was removed using an upper gastrointestinal endoscope. A 9-cm metal stent was placed across the duodenal stricture (Fig. 5; Video 1). The patient remains asymptomatic after 4 weeks of follow up.

Video 1

Endoscopic ultrasound (EUS)-guided cholecystogastrostomy using a Nagi covered metal stent, followed by removal of a plastic biliary stent and deployment of a duodenal metal stent.

Endoscopy_UCTN_Code_TTT_1AS_2AD

Competing interests: None

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Fig. 3 Endoscopic ultrasound (EUS) image showing the gallbladder being punctured with a 19G fine needle aspiration (FNA) needle.



Fig. 5 Radiographic image showing the stent positioned in the gallbladder and the metal stent placed across the duodenal stricture.

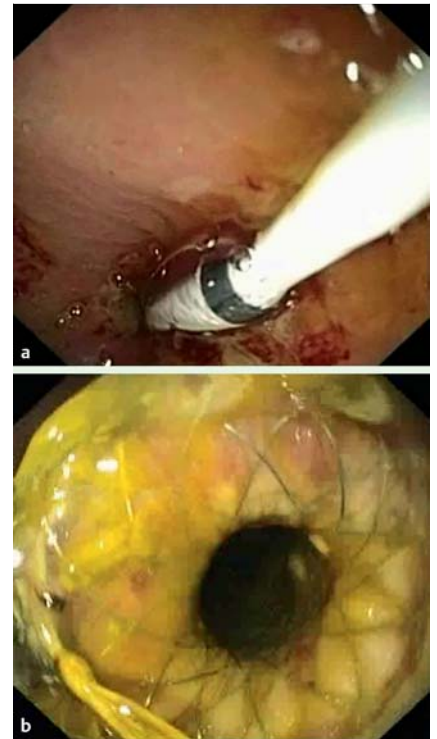


Fig. 4 Endoscopic views showing: **a** dilation of the cholecystogastrostomy tract with a 4-mm balloon; **b** the metal stent in position after its successful deployment.

Bibliography

DOI <http://dx.doi.org/10.1055/s-0034-1377286>
 Endoscopy 2014; 46: E334–E335
 © Georg Thieme Verlag KG
 Stuttgart · New York
 ISSN 0013-726X

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