



Long-lasting patent fistula after EUS-guided choledochoduodenostomy in a patient with refractory benign biliary stricture

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Endoscopic management of benign biliary stricture (BBS) in patients with chronic pancreatitis (CP) is challenging. Recently, fully-covered self-expanding metal stents (FCSEMSs) have been used to treat BBS because they can be removed readily and are characterized by long patency duration and fewer endoscopic treatments.¹⁻³ Some cases, however, do not respond to repeated endoscopic treatments.

The patient was a 56-year-old man with symptomatic BBS due to alcoholic CP. The patient had undergone placement of single or multiple plastic stents 11 times and a 3-month temporary FCSEMS placement during the past 3 years (Figs. 1 and 2). EUS-guided FNA was performed 3 times in the treatment period and other possible diseases such as autoimmune pancreatitis and pancreatic cancer were ruled out.

The pancreatic duct stricture was successfully treated, whereas the bile duct stricture was not resolved even

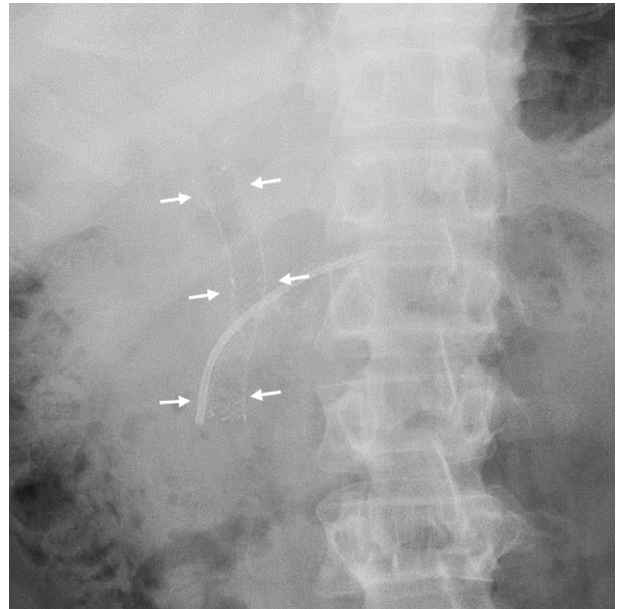


Figure 2. One 10-mm diameter fully covered self-expanding metallic stent (arrows) and one 7F pancreatic stent are placed for the stricture of chronic pancreatitis.

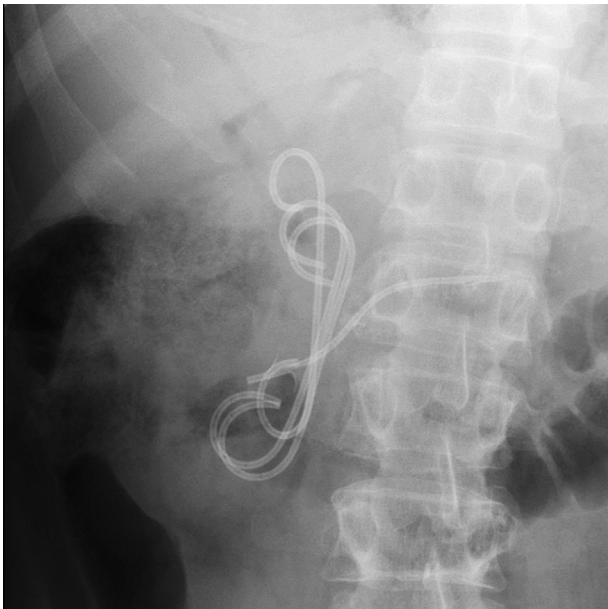


Figure 1. Three 7F double-pigtail biliary stents and one 7F pancreatic stent are placed for the stricture of chronic pancreatitis.



Figure 3. The fully covered self-expanding metallic stent designed to minimize stent-induced bile duct injury; 10 mm at both convex ends, 8 mm in diameter at the midportion, and 60 mm in total length.

Written transcript of the video audio is available online at www.VideoGIE.org.

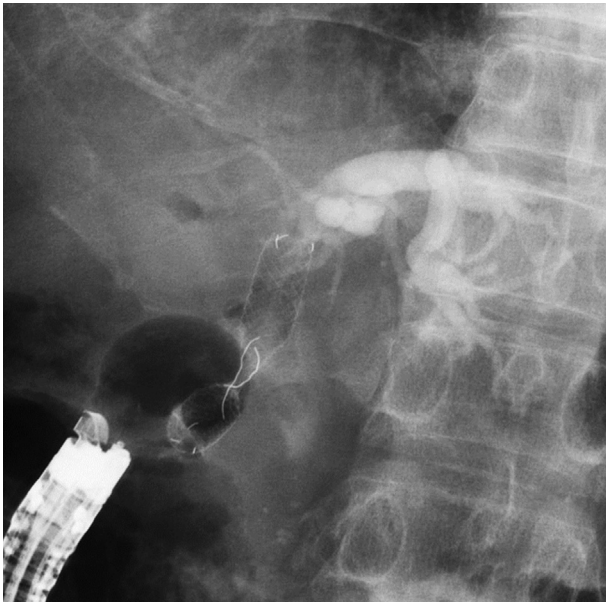


Figure 4. Stent deployment in the duodenal bulb by EUS-guided choledochoduodenostomy.

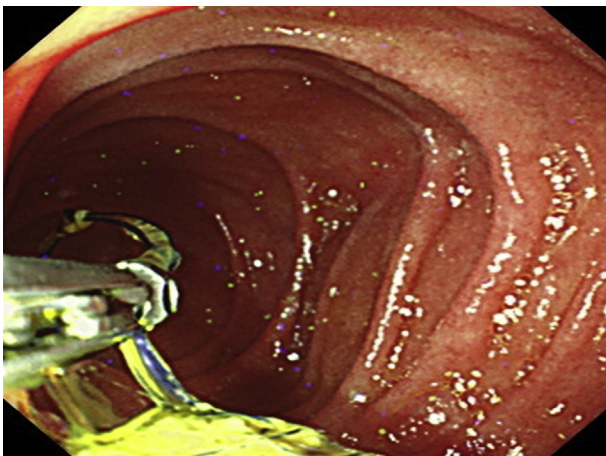


Figure 5. Retrieval lasso grasped with forceps to remove a fully covered self-expanding metallic stent.

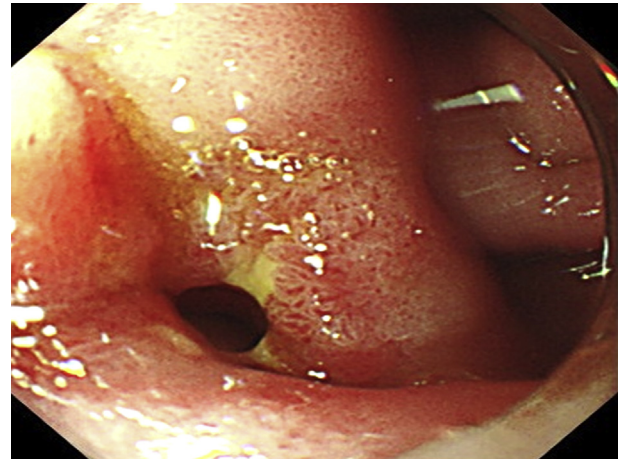


Figure 6. Opening of a fistula in the duodenal bulb.



Figure 7. Cholangiogram contrasted from a created fistula showing disruption of the distal bile duct.

though the patient stopped drinking. We recommended that he undergo surgery rather than more endoscopic treatment, but he refused. Therefore, we proposed to create a new drainage route by EUS-guided choledochoduodenostomy (EUS-CDS) using a modified FCSEMS (Bonastent M-Intraductal; Standard Sci-Tech Inc, Seoul, South Korea). This stent is designed to minimize stent-induced bile duct injury. It has a convex margin at both ends to minimize stent-induced tissue hyperplasia, a saddleback part at the central portion for anchoring, and a retrieval lasso attached to the distal end.⁴ The stent we used is 10 mm at both ends, 8 mm in diameter at the

midportion, and 60 mm in total length (Fig. 3). EUS-CDS was performed with a forward-viewing echoendoscope, and a modified FCSEMS was deployed in the duodenal bulb (Fig. 4; Video 1, available online at www.VideoGIE.org).

No adverse event occurred during the procedure or during the stent placement period of 6 months. The stent was removed successfully by pulling a retrieval lasso (Fig. 5), and a firm fistula was created in the duodenal descending part (Figs. 6 and 7). CT at 6 months after metallic stent removal showed gases in the intrahepatic and extrahepatic bile ducts. The

patient hasn't had any fever or abdominal pain, and biochemical blood test results have been normal during the 8-month follow-up after stent removal.

In conclusion, placement of FCSEMSs by EUS-CDS for 6 months followed by removal could successfully create a new biliary drainage route. Although further studies about the indication for this procedure, the choice of appropriate stent, and the stent placement period are necessary, EUS-CDS is not only appropriate for malignant biliary stricture but also can be a treatment choice in patients with refractory BBS.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

Abbreviations: BBS, benign biliary stricture; CP, chronic pancreatitis; EUS-CDS, EUS-guided choledochoduodenostomy; FCSEMS, fully-covered self-expanding metal stent.

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