

DEN Video Article

Case of endoscopic bilateral stent-in-stent placement using long metallic stents for pancreatic cancer and plexus invasion

Masanari Sekine, Keita Matsumoto and Hirosato Mashima

Department of Gastroenterology, Jichi Medical University Saitama Medical Center, Saitama, Japan

BRIEF EXPLANATION

A 75-YEAR-OLD MAN presented with obstructive jaundice due to pancreatic cancer (Fig. 1). He had a

long malignant biliary obstruction consisting of two stenoses: one in the distal bile duct caused by pancreatic cancer and the other (type 2 according to the Bismuth classification) caused by plexus invasion along the

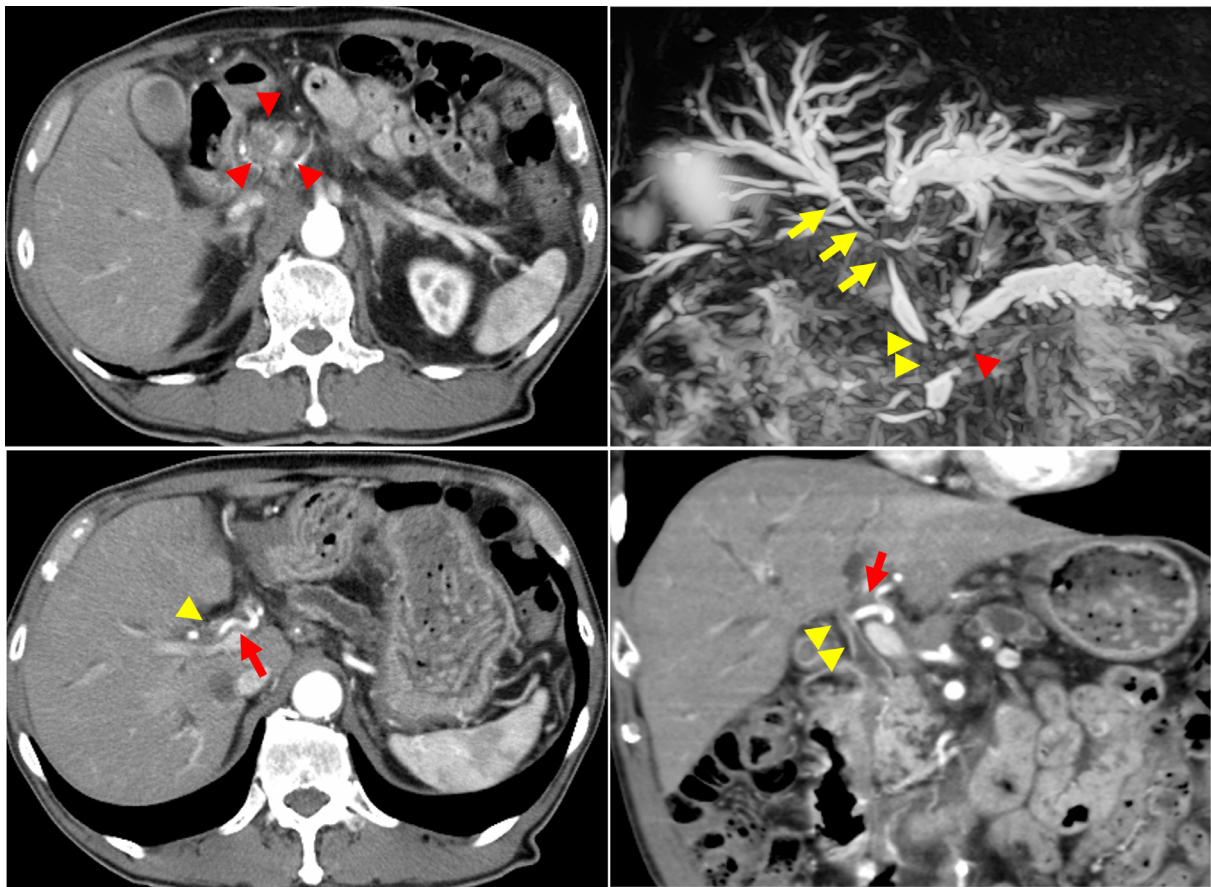


Figure 1 (Upper left) Contrast-enhanced computed tomography (CE-CT) showing pancreatic head cancer (arrowheads). (Upper right) Magnetic resonance cholangiopancreatography showed a long malignant biliary obstruction from the distal bile duct (arrowheads, yellow) to the hilar bile duct (arrows) and pancreatic duct stenosis (arrowhead, red). (Lower left and right) CE-CT showed wall thickening of the common bile duct (arrowheads) and a low-density area around the right hepatic artery (arrows).

Corresponding: Masanari Sekine, Department of Gastroenterology, Jichi Medical University Saitama Medical Center, 1-847 Amanuma-cho, Omiya-ku, Saitama City, Saitama 330-8503, Japan. Email: msekine@jichi.ac.jp

Received 19 November 2021; accepted 24 January 2022.



Figure 2 Partial stent-in-stent method for malignant biliary obstruction from the distal bile duct to the hilar bile duct. The length of each stent was determined by measuring from the intact intrahepatic bile duct to the duodenum or into the first stent.

gastrooduodenal artery to the right hepatic artery. First, bilateral endoscopic drainage was performed using two plastic stents. However, their patency was short. We then attempted partial stent-in-stent (pSIS) placement using a long stent (Zilver635; Cook Medical Endoscopy, Winston-Salem, NC, USA). Two guidewires were advanced into the left and anterior branch of the right hepatic duct. On fluoroscopic imaging, the first stent (diameter, 8 mm; length, 12 cm) was inserted into the left bile duct across the ampulla of Vater. Next, a contrast catheter was advanced with a guidewire passed through the stent cell. The second stent (diameter, 8 mm; length, 10 cm) was easily placed through the mesh from the anterior branch of the right hepatic duct to above the ampulla (Fig. 2, Video S1). Bilateral metallic stenting can be achieved by pSIS or side-by-side (SBS) methods.¹ While technically challenging, the safety and efficacy of this approach has been demonstrated.^{2,3} We selected pSIS because it showed superior technical feasibility or patency than SBS by referring to the meta-analysis.^{4,5} Most metallic stents used in pSIS are 6–8 cm in length. We occasionally experience cases of long

malignant biliary obstruction, requiring three metallic stents: one for the distal bile duct and two for the hilar bile duct obstruction. In this case, two long metallic stents were sufficient. With this approach, cost reduction can be expected. A long metallic stent may be useful for pSIS placement in cases involving malignant biliary obstruction from the distal bile duct to the hilar bile duct.

Authors declare no conflict of interest for this article.

REFERENCES

- 1 Lee TH, Moon JH, Choi JH *et al.* Prospective comparison of endoscopic bilateral stent-in-stent versus stent-by-stent deployment for inoperable advanced malignant hilar biliary stricture. *Gastrointest Endosc* 2019; **90**: 222–30.
- 2 Lee TH, Kim TH, Moon JH *et al.* Bilateral versus unilateral placement of metal stents for inoperable high-grade malignant hilar biliary strictures: A multicenter, prospective, randomized study (with video). *Gastrointest Endosc* 2017; **86**: 817–27.
- 3 Kawakubo K, Kawakami H, Toyokawa Y *et al.* Risk factors for technical failure of endoscopic double self-expandable metallic stent placement by partial stent-in-stent method. *J Hepatobiliary Pancreat Sci* 2015; **22**: 79–85.
- 4 de Souza GMV, Ribeiro IB, Funari MP *et al.* Endoscopic retrograde cholangiopancreatography drainage for palliation of malignant hilar biliary obstruction – stent-in-stent or side-by-side? A systematic review and meta-analysis. *World J Hepatol* 2021; **13**: 595–610.
- 5 Shim SR, Lee TH, Yang JK *et al.* Endoscopic bilateral stent-in-stent versus stent-by-stent deployment in advanced malignant hilar obstruction: A meta-analysis and systematic review. *Dig Dis Sci*. Published online: 24 Feb 2021; DOI: 10.1007/s10620-021-06885-8.

SUPPORTING INFORMATION

ADDITIONAL SUPPORTING INFORMATION may be found in the online version of this article at the publisher's web site.

Video S1 The long metallic stents were successfully placed by partial stent-in-stent for malignant biliary obstruction from the distal bile duct to the hilar bile duct due to pancreatic cancer and plexus invasion.