The endoscopic partial stent-in-stent (PSIS) placement of self-expandable metal stents (SEMSs) is effective for the palliation of malignant hilar biliary strictures [1–5]. Despite its efficacy, however, PSIS placement is technically challenging, especially when placing second or subsequent stents. We report a novel technique for PSIS placement of three SEMSs using a short double-balloon enteroscope (DBE), which was used in a patient with a malignant hilar biliary stricture and surgically altered anatomy.

A 74-year-old man who had undergone distal gastrectomy with Billroth II reconstruction was admitted with jaundice due to cholangiocarcinoma with a Bismuth type IV hilar biliary stricture (● Fig. 1a). To aid biliary drainage, we placed a 7-Fr plastic stent in the left hepatic duct, another in the right posterior hepatic duct, and a third in the right anterior hepatic duct using a short DBE (EI-530B; Fujifilm, Tokyo; working channel, 2.8-mm diameter). Although this led to immediate resolution of the patient’s jaundice, we diagnosed unresectable cholangiocarcinoma and therefore went on to perform PSIS placement of three SEMSs (Zilver 635; Cook Medical, Winston-Salem, North Carolina, USA) using the DBE before the patient commenced chemotherapy.

First, the stricture was dilated (Quantum, 6-mm diameter; Cook Medical) then, to identify the bifurcation of the common hepatic duct and the target bile duct, two 0.018-inch landmark guidewires (Roadrunner; Cook Medical) were inserted into the right posterior hepatic duct and the right anterior hepatic duct [1,2]. The first SEMS (10-mm diameter, 80-mm long) was then placed into the left hepatic duct over a stiff 0.035-inch guidewire (THSF; Cook Medical) using a small-diameter (6-Fr), 200-cm-long delivery system, while keeping the two landmark guidewires in the right anterior and posterior hepatic ducts (● Fig. 1b). Next, a 0.035-inch hydrophilic guidewire (NaviPro; Boston Scientific, Natick, Massachusetts, USA) was easily inserted into the right posterior hepatic duct through the stricture and the interstices of the first SEMS following the landmark guidewire (● Fig. 1c). A second SEMS (10-mm diameter, 60-mm long) was then successfully placed in the right posterior hepatic duct using a stiff guidewire that had been exchanged for the hydrophilic guidewire (● Fig. 1d). The third SEMS (10-mm diameter, 60-mm long) was then placed...
into the right anterior hepatic duct over a
guidewire that had been passed in similar
fashion through the interstices of the two
previous stents (Fig. 1 e, f).
Therefore, the combined use of the 6-Fr
Zilver 635 SEMSs [5] and 0.018-inch land-
mark guidewires facilitated the PSIS
placement of multiple SEMSs for mali-
gnant hilar biliary stricture using a short
dBE with a small working channel.

Competing interests: None

Koichiro Tsutsumi, Hironari Kato,
Hiroyuki Okada, Kazuhide Yamamoto
Department of Gastroenterology &
Hepatology, Okayama University Graduate
School of Medicine, Dentistry, and
Pharmaceutical Sciences, Okayama, Japan

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Corresponding author
Koichiro Tsutsumi, MD
Department of Gastroenterology Hepatology
Okayama University Graduate School of Medicine,
Dentistry, and Pharmaceutical Sciences
2-5-1 Shikata-cho, Kita-ku
Okayama-city
Okayama, 700-8558
Japan
Fax: +81-86-2255991
tsutsumi@cc.okayama-u.ac.jp