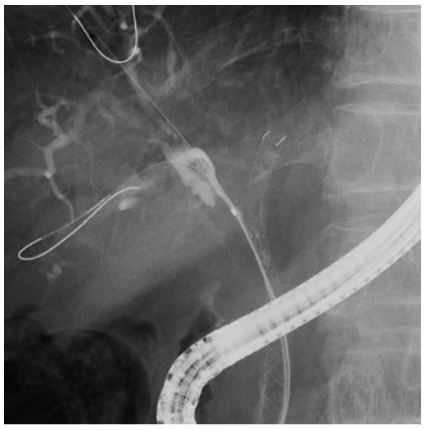
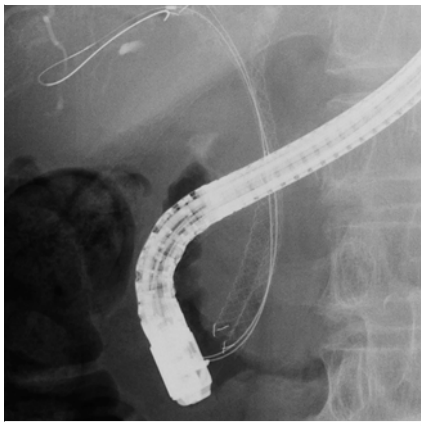
Across-the-papilla side-by-side deployment of three braided stents for malignant hilar biliary obstruction

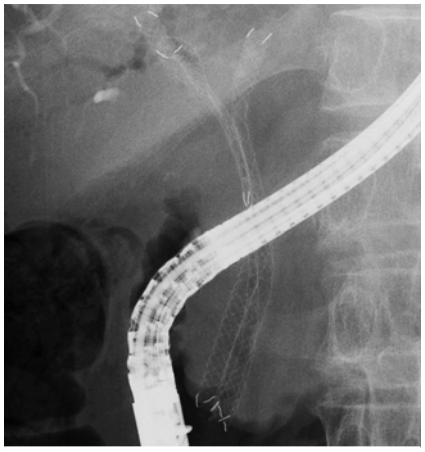
▶ **Fig. 1** A novel 6-mm fully covered self-expandable metal stent with a 6-Fr stent delivery system.



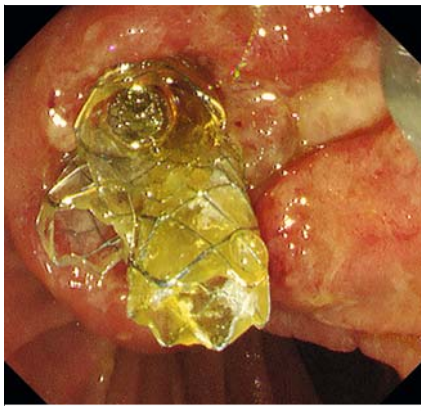
▶ **Fig. 2** Guidewires were deployed in the anterior and posterior bile ducts.



▶ **Fig. 3** The 6-mm braided stent was deployed in the posterior bile duct.



▶ **Fig. 4** Three across-the-papilla side-by-side metal stent deployments were successfully performed.



▶ **Fig. 5** Endoscopic image after the three across-the-papilla side-by-side metal stent deployments.

Malignant hepatic hilar obstruction is treated by biliary stenting under the guidance of endoscopic retrograde cholangiopancreatography. In inoperable cases, uncovered self-expandable metal stents (SEMSs) may be deployed for palliative drainage [1–4]. Multiple SEMS deployment using the stent-in-stent (SIS) technique is challenging, especially in nonexpert hands. The side-by-side (SBS) technique is considered easier than the SIS technique, but simultaneous deployment of three SEMSs using the SBS technique is also challenging. Recently, a novel 6-mm fully covered SEMS (FCSEMS) with a 6-Fr stent delivery system (EGIS braided 6; S&G Biotech Inc., Yongin-si, South Korea) has become available in Japan (▶ **Fig. 1**). Because of the fine gauge of the stent delivery system, second and third stent insertions beside the first stent deployment may be feasible. We describe technical tips for SBS deployment of three stents in one case.

A 57-year-old man had undergone placement of a plastic stent in the right hepatic bile duct for malignant hilar obstruction. However, since the obstructive jaundice had not resolved, reintervention was attempted. First, a 6-mm braided stent was deployed beside the plastic stent across the papilla. After removal of the plastic stent, contrast medium was injected. Since both anterior and posterior bile duct obstruction was observed, stent deployment was attempted at both sites. First, guidewires were deployed in the anterior and posterior bile ducts (▶ **Fig. 2**). Next, a second 6-mm braided stent was deployed in the posterior bile duct across the papilla (▶ **Fig. 3**). Finally, the stent delivery system was successfully inserted into the posterior bile duct beside the two stents and a third 6-mm braided stent was deployed in the anterior bile duct across the papilla (▶ **Fig. 4**, ▶ **Fig. 5**; ▶ **Video 1**) without any adverse events.

The 6-mm braided stent may facilitate SBS stent deployment, although its utility for across-the-papilla SBS stenting needs to be evaluated in prospective clinical trials.

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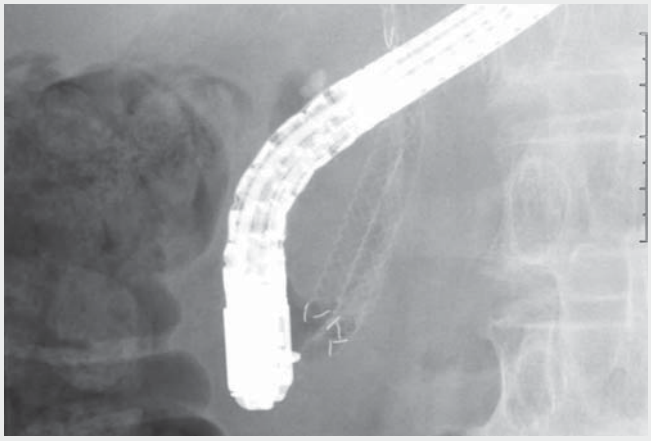

Video 1 A 6-mm braided fully covered self-expandable metal stent was deployed in the left hepatic bile duct. After removal of the existing plastic stent, guidewires were deployed in the anterior and posterior bile ducts. First, a 6-mm braided stent was deployed in the posterior bile duct. Then, the stent delivery system was inserted into the anterior bile duct. Finally, three across-the-papilla side-by-side metal stent deployments were successfully completed.

Competing interests

The authors declare that they have no conflict of interest.

The authors

Saori Ueno, Takeshi Ogura, Jyunichi Kawai, Masahiro Yamamura, Kazuhide Higuchi
Second Department of Internal Medicine, Osaka Medical College, Osaka, Japan

Corresponding author

Takeshi Ogura, MD
Second Department of Internal Medicine, Osaka Medical College, 2-7 Daigakuchou, Takatsukishi, Osaka 569-8686, Japan
oguratakeshi0411@yahoo.co.jp

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Bibliography

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