

## Endoscopic placement of a self-expandable metal stent for malignant small-intestine obstruction using a digital cholangioscope-guided approach

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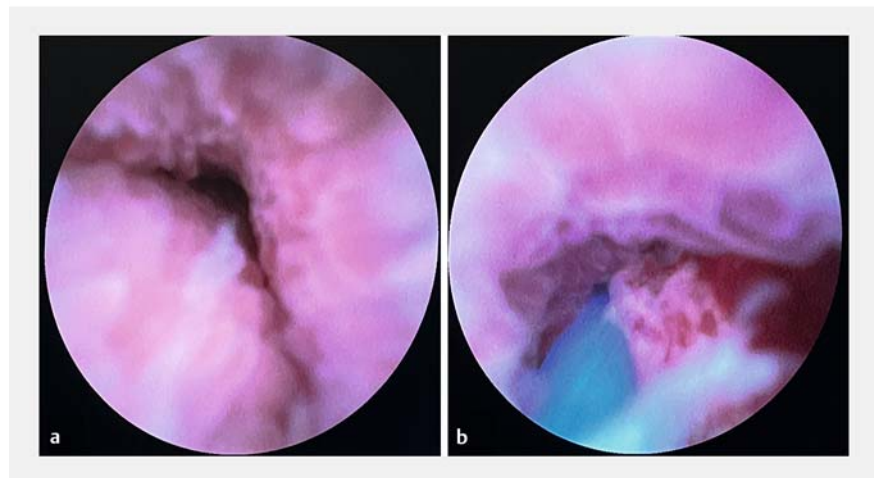
For malignant gastrointestinal obstruction in inoperable patients, the self-expandable metal stent (SEMS) is a useful nonsurgical palliative treatment to improve patients' quality of life [1–4]. The common method of intestinal stent placement is to navigate the guidewire through the narrow segment, which often takes a long time, and sometimes leads to stent placement failure because the guidewire cannot pass through the narrow segment. Here, we describe the successful endoscopic placement of an SEMS using a guidewire after a digital cholangioscope was used to pass through the narrow small intestine.

A 46-year-old man was diagnosed with unresectable primary carcinoma of the horizontal segment of the duodenum with severe intestinal obstruction. After failure of conventional stent placement, we attempted to use a digital cholangioscope to place the guidewire through the narrow segment and guide the SEMS (► **Video 1**). First, a digital cholangioscope (eyeMax; Micro-Tech Nanjing, Co., Ltd, Nanjing, China) was inserted through the stenosis and a 0.35-mm guidewire was introduced into the distal small intestine under direct visualization (► **Fig. 1**). After retrieval of the digital cholangioscope, the uncovered SEMS was advanced over the wire through the stenosis and gradually deployed under continuous X-ray monitoring (► **Fig. 2**). Stent patency was evaluated with iodine contrast agent immediately after placement (► **Fig. 3**).

The patient was allowed to drink clear liquid on the second day after the operation, and advanced to a low-residue diet on the third day.



► **Video 1** Endoscopic placement of a self-expandable metal stent was performed using a digital cholangioscope-guided approach.



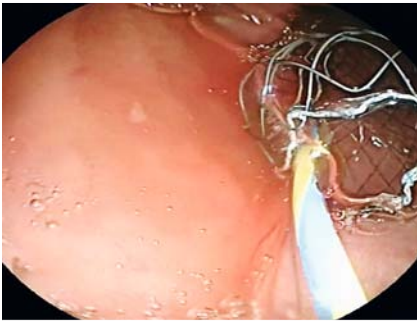
► **Fig. 1** Guidewire placement into the distal small intestine under direct visualization using a digital cholangioscope. **a** A digital cholangioscope was inserted through the stenosis. **b** A 0.35-mm guidewire was placed into the distal small intestine under direct visualization.

For patients with intestinal obstruction, this technique is a fast and effective method for stent placement.

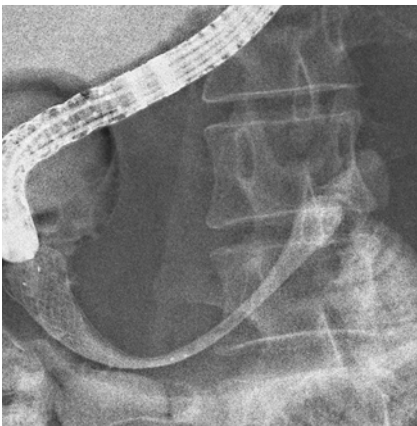
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### Competing interests

The authors declare that they have no conflict of interest.



► **Fig. 2** Endoscopic view of the stent placed for the treatment of intestinal obstruction due to primary carcinoma of the horizontal segment of the duodenum.



► **Fig. 3** Stent patency was evaluated immediately after placement using X-ray with iodine contrast agent.

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## Bibliography

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