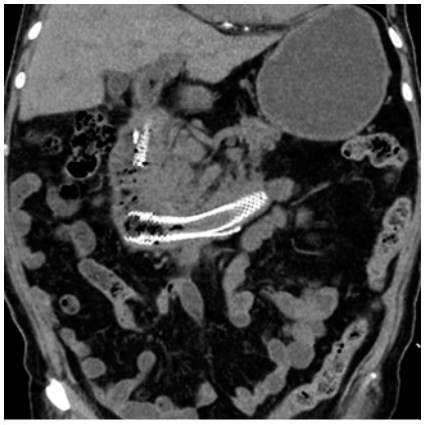
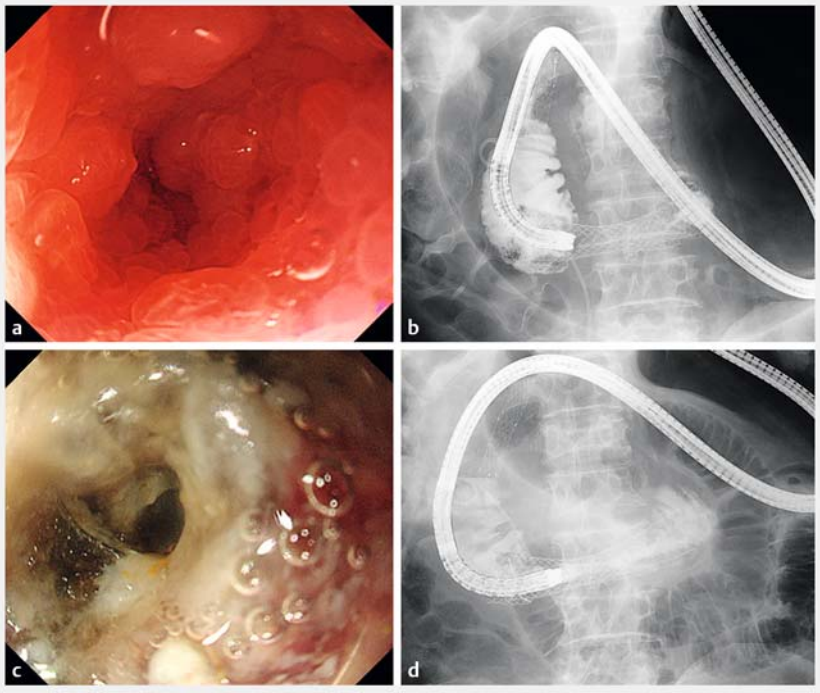
Argon plasma coagulation performed as a treatment for restenosis after placement of two duodenal self-expandable metallic stents



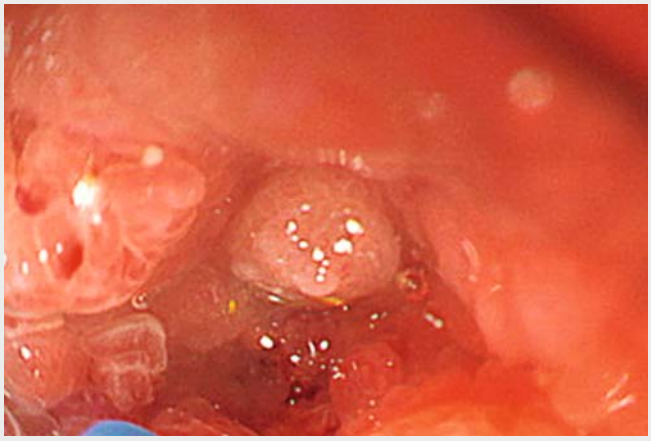
▶ **Fig. 1** Computed tomographic finding in an 82-year-old man with recurrent gastric outlet obstruction after placement of two SEMS. The first stent (WallFlex duodenal stent, 22 mm × 6 cm, uncovered type) was inserted into the third portion of the duodenum. The second duodenal stent (WallFlex duodenal stent, 22 mm × 9 cm, covered type) was inserted as a stent-in-a-stent for obstruction of the first SEMS due to tumor ingrowth.



▶ **Fig. 2** **a, b** Before the argon plasma coagulation treatment, imaging confirmed recurrent obstruction of the duodenal SEMS: **a** endoscopic findings, **b** fluoroscopic findings. **c, d** After the procedure, the duodenal lumen was visible: **c** endoscopic view, **d** fluoroscopic view.

Malignant gastroduodenal outlet obstruction (MGOO) is occasionally seen in patients with advanced pancreatic cancer. The endoscopic placement of self-expandable metallic stents (SEMS) has proven to be an effective treatment for MGOO [1, 2]. However, the optimal treatment for MGOO that recurs after the placement of a duodenal SEMS remains unknown. Although a few reports have shown argon plasma coagulation (APC) to be effective for treating stenosis of metallic esophagogastric stents [3–5], the application of APC to malfunction of a duodenal SEMS has not yet been reported. Hence, we are the first to report the case of a patient who underwent APC for recurrent MGOO after placement of two duodenal SEMS.

An 82-year-old man with unresectable locally advanced pancreatic cancer underwent gemcitabine monotherapy after insertion of a duodenal SEMS for MGOO



Video 1 Argon plasma coagulation performed as a treatment for restenosis after placement of two duodenal self-expandable metallic stents.

and endoscopic ultrasound-guided choledochoduodenostomy for obstructive jaundice. A year later, when MGOO recurred, an additional duodenal SEMS was inserted to treat it. Approximately 2 months after the second SEMS placement, the patient was admitted to our hospital with vomiting. Computed tomography revealed the SEMS to be obstructed by tumor ingrowth (▶ **Fig. 1**). Insertion of a third SEMS seemed contraindicated on the grounds of cost and the patient's overall poor prognosis. We therefore attempted to treat the duodenal SEMS malfunction using a 2.3-mm axial APC probe at the following settings: gas flow rate 1 L/min, current 40 – 50 W, effect 2 (▶ **Video 1**). Although we were able under endoscopic guidance to cauterize the hyperplastic mucosa in the proximal part of the SEMS, the vomiting showed no improvement. The APC treatment was repeated 4 days later. In addition, under fluoroscopic guidance cauterization was performed along the guidewire in the distal part of the SEMS without any complications (▶ **Fig. 2**). GOO-induced symptoms were not observed for 4 months after the APC treatment. After that, the patient died from pancreatic cancer progression.

APC may be an effective treatment for recurrent duodenal obstruction after SEMS placement.

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Competing interests

The authors declare that they have no conflict of interest.

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