

Successful peroral endoscopic removal of migrated metal stent

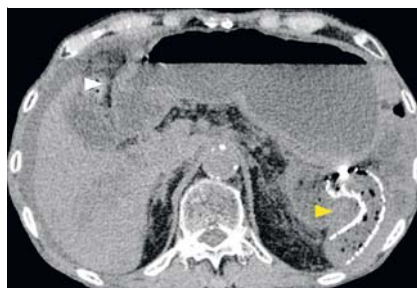
Duodenal covered self-expandable metal stents (C-SEMSs) are designed with stent mesh to prevent tumor ingrowth [1]. However, stent migration is a major adverse event associated with C-SEMS, occurring in 8%–25% of cases [2,3]. In some cases, migrated stents exit via the rectum or remain in the body without complications [4]. However, when stent migration causes an intestinal obstruction, surgical removal is required [5]. To our knowledge, there are few reports of migrated SEMS removal via peroral endoscopy. Here, we outline a case of successful removal of a migrated duodenal C-SEMS using enteroscopy through an expanded second duodenal SEMS (▶ **Video 1**).

An 80-year-old man diagnosed with a malignant duodenal obstruction caused by pancreatic cancer underwent endoscopic duodenal C-SEMS placement (▶ **Fig. 1**). He was discharged once he was able to consume food by mouth. He was admitted to the emergency ward 17 days after the procedure with abdominal distension and vomiting.

Computed tomography showed that the stent had migrated into the jejunum, causing an intestinal obstruction without perforation (▶ **Fig. 2**). As the position of the migrated stent did not change on follow-up X-rays, we decided to remove the stent using enteroscopy. However, the enteroscope would not pass because of duodenal stenosis, so we decided to place a second duodenal SEMS (▶ **Fig. 3**). The second SEMS was fully expanded 2 days later, and we successfully passed the stenosis and reached the first, migrated C-SEMS. To prevent gastrointestinal injury during stent removal, we attached an overtube to the enteroscope and gently placed it through the stenosis. Using grasping forceps and a snare, we captured the migrated C-SEMS within the overtube and safely removed it per



▶ **Fig. 1** A covered self-expandable metal stent was successfully placed for duodenal obstruction caused by pancreatic cancer.



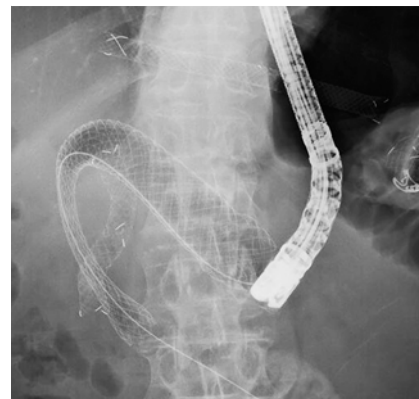
▶ **Fig. 2** The stent migrated into the jejunum (yellow triangle), and we confirmed intestinal obstruction (white triangle) without perforation.

orally (▶ **Fig. 4**). No necrosis or perforation was observed where the migrated C-SEMS had been stuck. After SEMS removal, the patients' symptoms resolved. This technique might be a useful option for removing a migrated SEMS per orally without surgery.

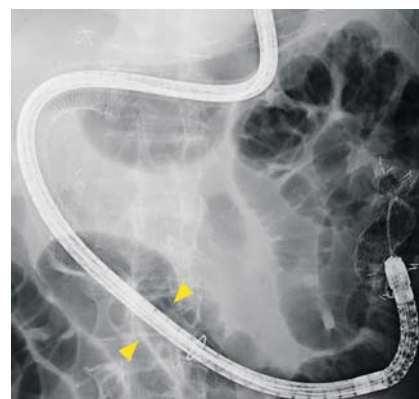
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Competing interests

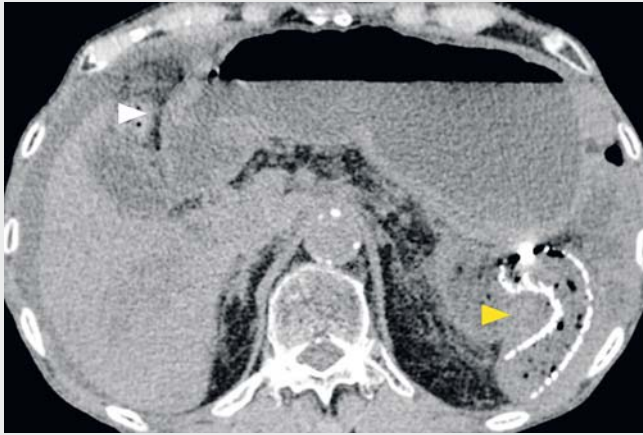
None



▶ **Fig. 3** The enteroscope could not pass the malignant duodenal stenosis; therefore, we placed a second duodenal self-expandable metal stent. Even with balloon dilation, we were unable to pass through the duodenal stenosis.



▶ **Fig. 4** The second self-expandable metal stent (SEMS) was fully expanded 2 days after duodenal placement, and we were able to pass through the duodenal stenosis. We were then able to reach the first migrated covered SEMS that had lodged in the jejunum. Next, we placed the overtube through the duodenal stenosis (yellow triangle) and straightened the proximal enteroscope. Using grasping forceps and a snare, we successfully captured the migrated covered SEMS within the overtube and safely removed it per orally.



Video 1 Successful peroral removal of a migrated self-expandable metal stent using an enteroscope. (Yellow triangle, stent; white triangle, obstruction.)

Bibliography

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The authors

Yasuki Hori¹, Kazuki Hayashi¹, Yu Sobajima², Itaru Naitoh¹, Katsuyuki Miyabe¹, Michihiro Yoshida¹, Hiromi Kataoka¹

- 1 Department of Gastroenterology and Metabolism, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan
- 2 Department of Gastroenterology, Ichinomiya Municipal Hospital, Ichinomiya, Japan

Corresponding author

Yasuki Hori, MD, PhD

Department of Gastroenterology and Metabolism, Nagoya City University Graduate School of Medical Sciences, 1 Kawasumi, Mizuho-cho, Mizuho-ku Nagoya 467-8601, Japan
 Fax: +81-52-8520952
yhori@med.nagoya-cu.ac.jp

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