A fractured duodenal self-expanding metal stent in a patient with pancreatic cancer

A 65-year-old man with biliary and duodenal obstruction due to metastatic adenocarcinoma of the pancreas underwent placement of an uncovered biliary self-expanding metal stent (SEMS). Subsequently, palliative chemotherapy with gemcitabine and nab-paclitaxel was initiated. Because the patient developed worsening symptoms of gastric outlet obstruction, an uncovered, 12-cm duodenal SEMS (Niti S-ental D type, diameter 20 mm; TaeWoong Medical, Seoul, South Korea) was placed 4 weeks later.

After 2 months a partial tumor response was documented; however, 6 weeks later he presented again with recurrent symptoms of gastric outlet obstruction. Computed tomography (CT) demonstrated fracture of the duodenal SEMS, which had partially migrated into the distended stomach (Fig. 1). A remnant of the SEMS was still in place but was not patent (Fig. 2). After the migrated piece of the SEMS had been removed with a snare, an additional uncovered 8-cm SEMS (same type, diameter 22 mm) was placed in the remnant duodenal SEMS (Fig. 3). Examination of the removed piece of SEMS showed that the wire mesh was broken (Fig. 4). The biliary stent remained patent. After this procedure, the patient was able to eat soft food again.

Placement of a duodenal SEMS is the standard palliative treatment for malignant gastric outlet obstruction and results in prompt relief of symptoms. Distal stent migration can occur in up to 56% of patients who have covered SEMSs placed [1,2]. In contrast, stent migration is rare in patients who have had uncovered duodenal SEMSs placed, being reported in less than 2% of patients in a recently published prospective multicenter study [3]. An extremely rare adverse event of such SEMSs is complete stent fracture and subsequent migration of the broken part. To date, 12 cases of complete fracture of a SEMS, mostly esophageal SEMSs, have been reported [4].

In cases where symptoms of gastric outlet obstruction recur after initially successful placement of a duodenal SEMS, tumor ingrowth, stent migration, and stent fracture, as reported in the present case, should all be considered.

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Fig. 4 The removed piece of self-expanding metal stent (SEMS) showing a broken wire mesh (arrow).