Placement of an esophageal self-expandable metal stent through a percutaneous endoscopic gastrostomy tract, for endoscopic therapy of upper gastrointestinal bleeding

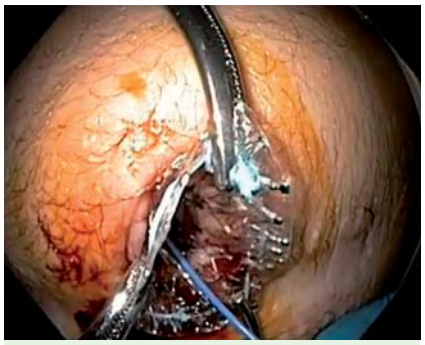

Fig. 1 Esophageal self-expandable metal stent (SEMS) deployed across percutaneous endoscopic gastrostomy (PEG) site.

Fig. 2 Dilation of transgastric self-expandable metal stent (SEMS) to 18 mm using a peripheral vascular dilating balloon with high burst pressure.

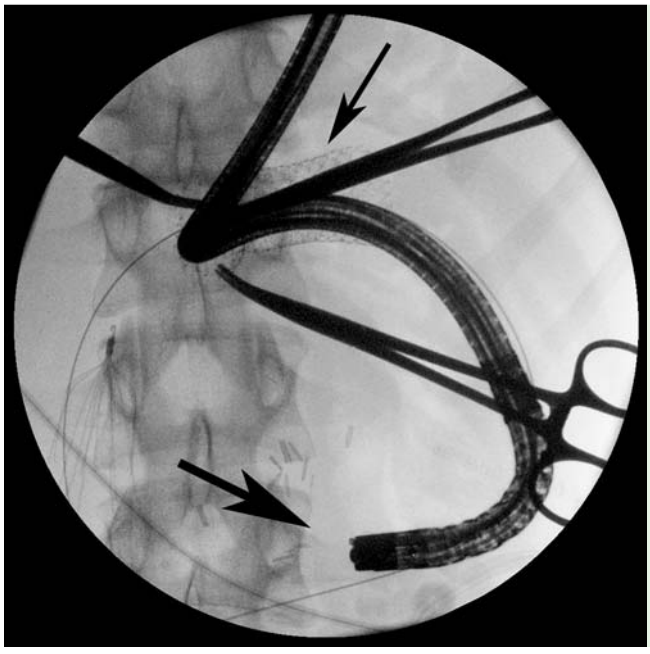

Fig. 3 Fluoroscopic view of transgastric passage of an adult (9.8-mm diameter) upper endoscope through the self-expandable metal stent (SEMS) (thin arrow) to the site of a bleeding anastomotic ulcer (thick arrow).

Fig. 4 Gastrojejunal anastomotic ulcer with visible vessel (arrow) targeted with 7-Fr bipolar thermal probe.

Fig. 5 Longitudinal scissor sectioning and retrieval of self-expandable metal stent (SEMS) (thin arrow) over larger bore (26-Fr) gastrostomy tube (thick arrow) with internal balloon bumper placed through the SEMS into the stomach.

Fig. 6 Replacement of percutaneous endoscopic gastrostomy (PEG) tube with larger bore (26-Fr) gastrostomy tube.

Slim endoscopes can be passed through gastrostomy tracts, but dilation is required for the passage of standard endoscopes, which may result in tract disruption. Large-diameter covered self-expandable metal stents (CSEMS) have been placed through percutaneous tracts to enable endotherapy.

A 20-year-old man underwent complex thoraco-abdominal surgery following traumatic injury, resulting in a cervical esophagus that was disconnected from the remaining gut. Intermittent bleeding from a gastrojejunal anastomotic ulcer was diagnosed using slim (5.9-mm) endoscopes passed through a 20-Fr mature percutaneous endoscopic gastrostomy (PEG) tract, but the small working channel precluded passage of hemostatic accessories. Attempts at angiographic embolization were unsuccessful.

An innovative endoscopic approach was undertaken to manage recurrent massive bleeding (**Figs. 1 – 6**, **Videos 1 – 3**). With the patient under general anesthesia, the gastrostomy tube was removed and an ultrathin endoscope (Olympus GIF-XP160; Olympus, Tokyo, Japan) was advanced through the gastrostomy tract toward a 2-cm marginal ulcer with a visible vessel. After guide wire placement into the jejunum, and endoscope withdrawal, a 7-cm long, 18-mm diameter CSEMS (Alimaxx; Merit Endotek, Jordan, Utah, USA) was deployed across the PEG tract, with one end exiting the skin and the other intragastrically. Balloon dilation (18-mm ATLAS PTA Dilatation Catheter; BARD Peripheral Vascular Inc., Tempe,

Arizona, USA) of the CSEMS allowed trans-SEMS passage of a 9.8-mm endoscope (Olympus GIF-H180) to enable successful ulcer hemostasis (using epinephrine injection and bipolar coagulation). A 26-Fr gastrostomy tube with balloon bumper was then inserted through the CSEMS, followed by longitudinal sectioning and removal of the stent. The patient was without recurrent bleeding at 1-month follow-up.

Video 1

Esophageal self-expandable metal stent (SEMS) placement across percutaneous endoscopic gastrostomy (PEG) site.

Video 2

Passage of an adult (9.8-mm diameter) upper endoscope through the transgastric self-expandable metal stent (SEMS) for ulcer hemostasis.

Video 3

Removal of transgastric self-expandable metal stent (SEMS) and replacement of percutaneous endoscopic gastrostomy (PEG) tube with larger bore (26-Fr) gastrostomy tube.

Temporary placement of a large-diameter CSEMS through percutaneous access tracts enables passage of large-diameter endoscopes for performance of endotherapy. Although the PEG tract could have been dilated, this can result in tract disruption. We foresee increasing use of the percutaneous CSEMS-assisted endoscopic approach for several indications and locations.

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Competing interests: None

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References

1 *Baron TH*, *Vickers SM*. Surgical gastrostomy placement as access for diagnostic and therapeutic ERCP. Gastrointest Endosc 1998; 48: 640 – 641
2 *Navarrete C*, *Castillo C*, *Caracci M* et al. Wide percutaneous access to pancreatic necrosis with self-expandable stent: new application (with video). Gastrointest Endosc 2011; 73: 609 – 610
3 *Bakken JC*, *Baron TH*. Pancreatic necrosectomy via percutaneous self-expandable metal stent placement. Gastrointest Endosc 2011: 73: AB103
4 *Bakken JC*, *Baron TH*. Use of partially covered and fully covered self expandable metal stents to establish percutaneous access for endoscopic necrosectomy. Endoscopy 2011; 43: A69
5 *Baron TH*, *Wong Kee Song LM*, *Ferreira LE* et al. Novel approach to therapeutic ERCP after long-limb Roux-en-Y gastric bypass surgery using transgastric self-expandable metal stents: experimental outcomes and first human case study (with video). Gastrointest Endosc (in press)
6 *Abu Dayyeh BK*, *Baron TH*. Development of a hybrid percutaneous-endoscopic approach for the complete clearance of gallstones. Clin Gastroenterol Hepatol (in press)

Bibliography

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