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DOI: 10.17235/reed.2022.9151/2022

Link: [PubMed \(Epub ahead of print\)](#)

**Please cite this article as:**

Mao Li-Qi, Yu Hong-Bin, Li Jing-Jing, Wei Gui-Jun, Yao Lin-Hua. An unexpected complication of prophylactic esophageal stenting: esophageal stent impaction after thread dislocation. Rev Esp Enferm Dig 2022. doi: 10.17235/reed.2022.9151/2022.

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## **An unexpected complication of prophylactic esophageal stenting: esophageal stent impaction after thread dislocation**

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Keywords: esophagus, stents, gastroscopy

*Dear Editor,*

A 47-year-old woman was referred to our department with opportunistic endoscopic findings of two submucosal esophageal bulges, approximately half the circumference of the esophagus, both nearly 2.0 cm in size, and 24-27 cm from the incisors (Fig. 1a). Ultrasound endoscopy diagnosed smooth muscle tumors originating from the muscularis propria layer (Fig. 1b) and she next underwent Submucosal Tunneling Endoscopic Resection (Fig. 1c). Intraoperatively, part of the tumor could not be separated from the muscularis propria layer and a U-shaped tumor was finally resected (Fig. 1d). A fully covered self-expanding esophageal nitinol stent was then inserted, covering the full circumference esophageal mucosa (Fig. 2a). The stent was fixed by ears with knotted thread and proton pump inhibitors were given for 1 week. Postoperative histopathologic examination showed spindled cells arranged in interlacing fascicles. Immunohistochemical examination was positive for smooth muscle actin and desmin and negative for CD34, CD117, S100 protein, consistent with the histopathological diagnosis of esophageal smooth muscle tumor. However, the thread accidentally slipped into the esophagus during her sleep, resulting in an advanced gastroscopy on the 21st postoperative day due to upper abdominal discomfort. Upon examination, the esophageal mucosa recovered well (Fig. 2b).

Unfortunately, thread-like cut characteristics were seen at the gastric angle, with the stent having passed through the pylorus and being difficult to pull out (Fig. 2c). A conservative handling was chosen, by cutting the thread and relying on intestinal peristalsis to minimize the need for surgery. 2 days later, Computed Tomography revealed a stent shadow near the splenic flexure (Fig. 2d). On day 3, the abdominal radiograph indicated that the stent had been discharged.

## **Discussion**

Esophageal fully covered self-expandable metal stents are effective in relieving stenosis and stricture symptoms after endoscopic resection for esophageal benign disease (1,2). This large-diameter stent has also been reported to be safe and effective for the treatment of postoperative esophagogastric leaks (3). A fixed thread attached to the edge of the stent have been widely used clinically to prevent its displacement (4). In this situation, when the stent passes through the pylorus and obstruction occurs, we recommend a conservative treatment approach by cutting the thread and follow-up with Imageology examination. In fact, complications arising from migrated esophageal stents are uncommon (5). The same treatment may also be used in cases of stent dislocation into the stomach.

## **Conflict of interest**

Authors declare no conflicts of interest for this article.

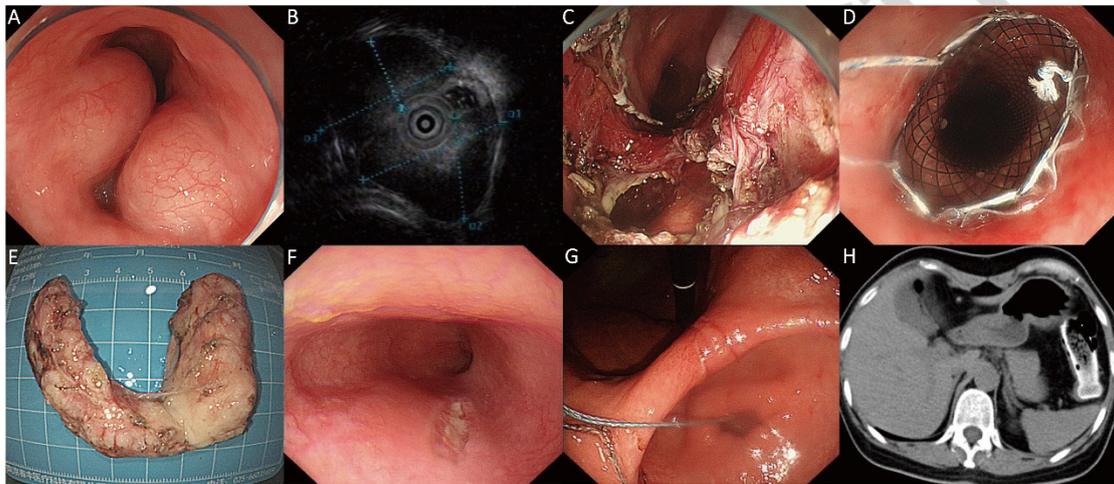
## **Author contributions:**

Lin-Hua Yao performed Submucosal Tunneling Endoscopic Resection, Lin-Hua Yao, Jing-Jing Li, Gui-Jun Wei and Hong-Bin Yu inserted the esophageal stent, Hong-Bin Yu, Lin-Hua Yao, Gui-Jun Wei and Li-Qi Mao made the treatment strategy, Li-Qi Mao, Jing-Jing Li, Lin-Hua Yao and Hong-Bin Yu prepared material and wrote the manuscript.

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**Fig. 1.** (A) Two submucosal esophageal bulges were clearly visible under endoscopy. (B) Endoscopic ultrasonography revealed hypoechoic masses originating from the muscularis propria layer, with sizes of 18.3\*12.3 mm and 17.8\*8.9 mm, respectively. (C) Mucosal wound of esophagus from Submucosal Tunneling Endoscopic Resection and (D) a U-shaped smooth muscle tumor isolated. (E) A fully covered esophageal self-expanding nitinol stent was inserted at the resection site after Submucosal Tunneling Endoscopic Resection. (F) Well healed esophageal mucosal wound on postoperative day 21. (G) The stent had passed through the pylorus leaving thread-like cut characteristics in at the gastric angle. (H) Computed Tomography 2 days after thread cutting revealed a stent shadow near the splenic flexure.