Concomitant endoscopic fundoplication – can it reduce the risk of gastroesophageal reflux following peroral endoscopic myotomy?

Gastroesophageal reflux is an emerging concern after peroral endoscopic myotomy (POEM) with a reported incidence of up to 50% [1]. Recently, a novel natural orifice transluminal endoscopic surgery (NOTES) procedure that creates an endoscopic anterior partial fundoplication (POEM+F) was reported [2]. We report on four patients with achalasia cardia treated using POEM+F.

Four patients (three women, one man; mean age 38.8 years) with type II achalasia confirmed on esophagogastroduodenoscopy (EGD) and high-resolution manometry (HRM) consented to undergo POEM+F. The mean Eckhardt score was 10 and symptom duration 9.5 months. All procedures were performed under general anesthesia. A standard anterior POEM was performed using a gastroscope (GIF-190H; Olympus Corporation, Tokyo, Japan) with a distal transparent attachment.

After completion of a full-thickness myotomy across the gastroesophageal junction, a 5.7 mm ultraslim gastroscope (GIF-190P) was introduced alongside the gastroscope into the gastric fundus. Using double-endoscope transillumination with the gastroscope in the tunnel (Fig. 1), the serosa overlying the myotomy was divided for entry into the peritoneal cavity. The scope was angled upward and to the left to reach the gastric fundus (Fig. 2), which was grasped and retracted into the tunnel to create the wrap. The procedure was continuously monitored by ultraslim gastro-
Once the wrap was satisfactory, the spot on the fundic serosa was marked. The gastroscope was withdrawn from the tunnel, a 3 cm endoloop clasped in a reconstrainable clip was passed through the scope, and the scope was reintroduced into the peritoneal cavity. The endoloop was fixed to the fundus using four clips. The gastroscope was withdrawn into the tunnel and the loop was proximally fixed to the end of the myotomy and peritoneal opening. The endoloop was tightened, the loop tail trimmed using a loop cutter, and the mucosal incision was closed (Video 1).

After 24 hours of fasting, the patients resumed oral diet and were discharged. On follow-up at four weeks, EGD revealed an intact wrap in all patients (Fig. 5). Eckhardt scores had normalized and no patient reported symptoms of gastroesophageal reflux disease. On follow-up, pH studies in two of four patients confirmed the absence of abnormal acid reflux.

Competing interests

None

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DOI https://doi.org/10.1055/a-1000-8196
Published online: 2019
Endoscopy
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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Fig. 4 External view of the endoscope with the clip in the channel and carrying the open endoloop alongside the scope. The ultraslim endoscope is already positioned in the gastric fundus.

Fig. 5 Well-maintained wrap seen at one-month gastroscopy following peroral endoscopic myotomy and fundoplication.