

Peroral endoscopic myotomy with endoscopic fundoplication in a patient with idiopathic achalasia

A 28-year-old man diagnosed with type II achalasia cardia underwent peroral endoscopic myotomy (POEM) via the anterior route (12–2 o'clock) using the standard technique. In this case we performed an endoscopic fundoplication in addition to the POEM procedure to prevent post-procedure reflux. Inoue et al. recently described the technique of POEM plus fundoplication [1].

The steps of fundoplication were as follows (▶ **Video 1**). First, the loose areolar tissue was dissected using a coagulation forceps (Coagrasper G, FD-412LR; Olympus, Tokyo, Japan). Subsequently, a small opening was created in the peritoneum and enlarged using the coagulation forceps (▶ **Fig. 1**). The scope was inserted into the peritoneum, and the serosal aspect of the stomach and surface of the liver were visualized (▶ **Fig. 2**). An ultra-slim endoscope was passed into the gastric lumen to help in selecting an appropriate site along the anterior gastric wall. The selected site was marked with a coagulation forceps for later identification (▶ **Fig. 3**). Subsequently, the scope was pulled out and re-introduced into the peritoneal cavity with an endloop-endoclip unit. Multiple endoclips were applied along the anterior gastric wall (▶ **Fig. 4**). The scope was withdrawn from the peritoneal cavity to the distal end of the myotomy, where a second series of endoclips was applied (▶ **Fig. 5**). The endloop was then tightened and the redundant part of the endloop trimmed using an endoscopic loop cutter. On endoscopy, with the scope in the retroflexed position, the fundoplication wrap could be seen (▶ **Fig. 6**).

POEM is a safe and effective treatment option for achalasia cardia [2]. However, the incidence of gastroesophageal reflux is high after POEM [3]. Recently, Inoue et al. described a novel technique of natural



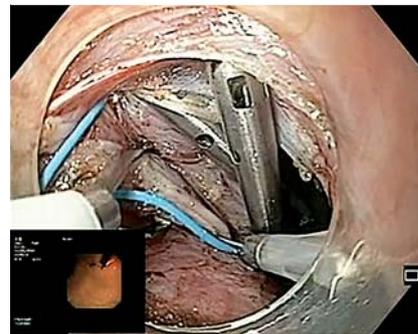
▶ **Fig. 1** Endoscopic fundoplication following peroral endoscopic myotomy (POEM) for achalasia: creation of a small opening in the peritoneum.



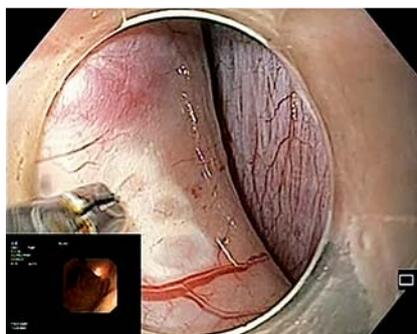
▶ **Fig. 4** Application of multiple endoclips over an endloop along the anterior gastric wall.



▶ **Fig. 2** Entry into the peritoneal cavity and identification of gastric wall (on left) and surface of liver (on right).



▶ **Fig. 5** Application of second series of endoclips along the distal edge of the myotomy site.



▶ **Fig. 3** Marking of an appropriate site along the anterior gastric wall using coagulation forceps.



▶ **Fig. 6** Endoscopic visualization of the partial fundoplication wrap.



Video 1 Peroral endoscopic myotomy (POEM) with fundoplication using the principles of natural orifice transluminal endoscopic surgery (NOTES).

orifice transluminal endoscopic surgery (NOTES) fundoplication in patients who underwent POEM [1]. This is a novel and minimally invasive technique to prevent gastroesophageal reflux after POEM. However, the efficacy and long-term durability of endoscopic fundoplication remain to be seen [4].

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Competing interests

None

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