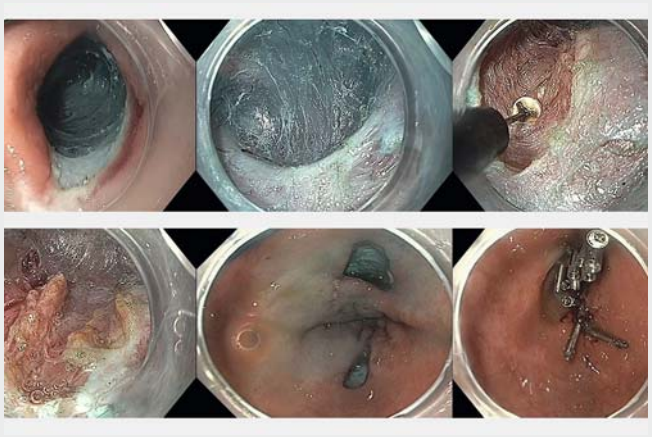
# Is two better than one? Alternative techniques for gastric peroral endoscopic myotomy

Myotomy during esophageal peroral endoscopic myotomy (POEM) results in a substantial distancing of the muscle fibers. In our experience, standard myotomy during gastric POEM (G-POEM) results in a relatively short distancing between the muscular fibers, which increases the risk of muscle tissue reformation from the healing process and thereby of symptom recurrence. We report two cases of alternative G-POEM techniques that may reduce this risk (▶ **Video 1**).

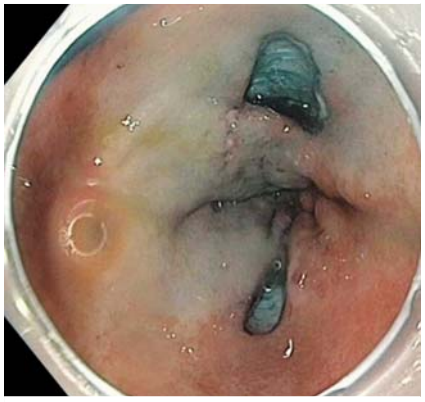
The first patient was a 20-year-old woman with idiopathic gastroparesis that was refractory to medical therapy. A submucosal tunnel was created along the greater curvature (▶ **Fig. 1 a**). The pylorus was clearly identified from within the tunnel as a distinct thick muscular ring with the duodenal mucosa running close and perpendicular to the ring (▶ **Fig. 1 b**). A gradual full-thickness pyloromyotomy was performed (▶ **Fig. 1 c**). The myotomy was extended 2 cm into the gastric antrum. Care was taken to avoid injury to the duodenal mucosa and gastric serosal layer. A second parallel pyloromyotomy was performed to the right of the first myotomy. The muscle fibers that remained between the two pyloromyotomies (▶ **Fig. 1 d**) were resected with a 10-mm cold snare, resulting in a substantial distancing of the cut muscular edges.

The second patient was a 33-year-old woman with long-standing type I diabetes that was complicated by severe gastroparesis, for which she had undergone a previous G-POEM procedure. Because of recent symptom recurrence not relieved by medications and because standard G-POEM had failed, it was decided to perform a double-tunnel G-POEM. Submucosal tunnels were created along both the greater and the lesser curvatures (▶ **Fig. 2**). Of note, we observed that, although the patient had had a previous myotomy along the greater curvature, the muscular layer had reformed. This confirmed our hypothesis that the



**Video 1** Two new approaches to G-POEM: double myotomy with muscular snare resection along the greater curvature and double-tunnel standard myotomy along the greater and lesser curvatures.


▶ **Fig. 1** Endoscopic images in a 20-year-old woman with idiopathic gastroparesis showing: **a** creation of a submucosal tunnel; **b** the pylorus identified from within the tunnel as a distinct thick muscular ring with the duodenal mucosa running close and perpendicular to the ring; **c** gradual full-thickness pyloromyotomy being performed; **d** some muscle fibers remaining between the two pyloromyotomies after a second parallel pyloromyotomy had been performed.



▶ **Fig. 2** Endoscopic image showing submucosal tunnels created both along the greater and the lesser curvature in a 33-year-old woman with severe diabetes-related gastroparesis and symptom recurrence after a previous gastric peroral myotomy procedure.

short distance between muscular fibers may increase the risk of muscle tissue reformation and symptom recurrence, and therefore the need in this case for a more radical myotomy. Two standard pyloromyotomies were performed, along both the lesser and greater curvatures. At the end of the procedure, both mucosal incisions were closed using clips.

We have described two modified approaches to G-POEM (▶ **Video 1**). Future studies comparing these approaches with standard G-POEM would be of interest.

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## Competing interests

M. A. Khashab is a consultant for Boston Scientific, Olympus America, and Medtronic and is on the advisory board of Boston Scientific and Olympus America. The other authors declare that they have no conflict of interest.

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## Bibliography

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