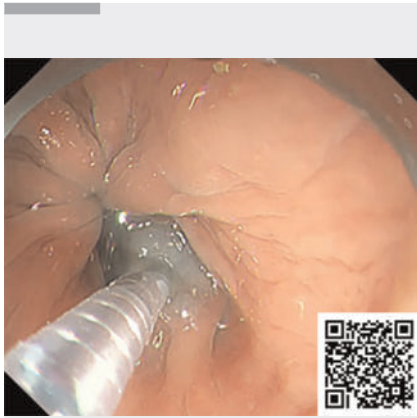
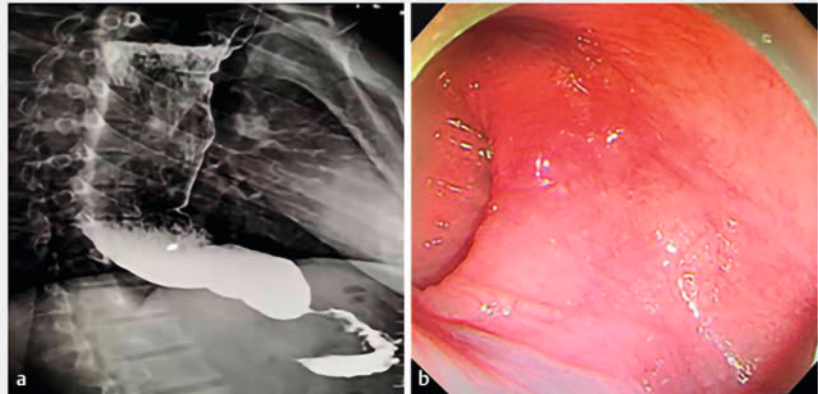


## Retrograde navigational tunnel technique in peroral endoscopic myotomy for sigmoid-type achalasia

OPEN  
ACCESS



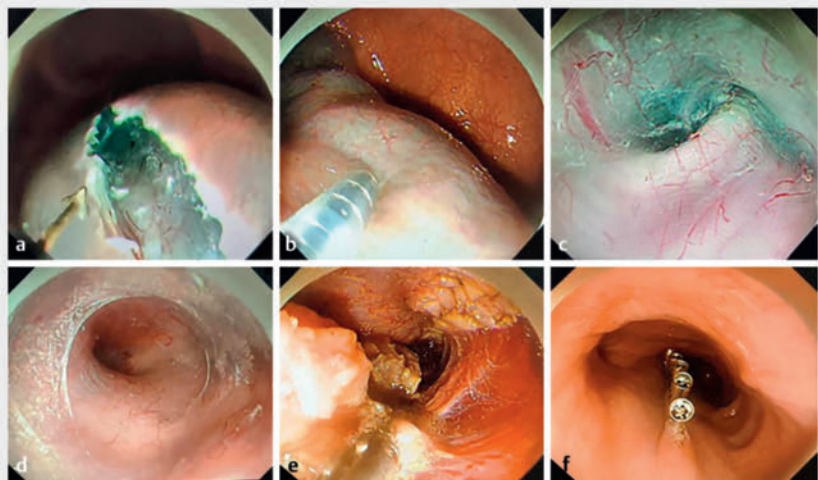
**▶ Video 1** The navigational tunnel technique is used during peroral endoscopic myotomy for a patient with sigmoid-type achalasia.



**▶ Fig. 1** The appearance of sigmoid-type achalasia on: **a** barium swallow, showing a diffusely dilated esophagus with a beak-like appearance at the lower end of the cardia; **b** endoscopic view, showing sigmoid contortion of the lower esophagus and closed cardia.

Standard peroral endoscopic myotomy (POEM) techniques are effective for typical achalasia [1–4]; however, limitations are encountered when treating the sigmoid type owing to its complex anatomy. Here, we introduce a novel retrograde navigational tunnel technique in POEM that aims to address these challenges.

A 31-year-old man was admitted to our hospital with a history of postprandial choking sensations for 5 years. Upon admission, a barium meal showed that the esophagus was diffusely dilated with a beak-like appearance at the lower end of the cardia (**▶ Fig. 1 a**). We chose to perform POEM after undertaking multidisciplinary consultation and obtaining consent from the patient (**▶ Video 1**). The procedure was performed with the patient under general anesthesia with endotracheal intubation. A triangular knife was used throughout the surgical procedure. The lower end of the esophagus exhibited a sigmoid contortion and the cardia was seen to be closed (**▶ Fig. 1 b**). First, a submucosal injection was administered 30 cm from the incisors to establish the tunnel entrance (**▶ Fig. 2 a**). Second, a retrograde submucosal injection



**▶ Fig. 2** Endoscopic images during the treatment of sigmoid-type achalasia by the navigational tunnel technique for peroral endoscopic myotomy showing: **a** the established tunnel entrance; **b** submucosal injection being performed in retrograde fashion from the cardia to the tunnel entrance; **c** the submucosal dissection navigation route at the flexion; **d** establishment of the submucosal tunnel; **e** incision of the annular and longitudinal muscles; **f** closure of the tunnel entrance with metal clips.

was performed from the cardia to the tunnel entrance (**▶ Fig. 2 b**). Third, submucosal dissection was performed in the tunnel to navigate from the entrance to 3 cm below the cardia (**▶ Fig. 2 c, d**). Both

the annular and longitudinal muscles were incised in the tunnel (**▶ Fig. 2 e**). Hemostasis was achieved using hot forceps, and the tunnel entrance was closed with metal clamps (**▶ Fig. 2 f**). The opera-

tion was successfully completed in 47 minutes, without any complications being experienced.

Postoperatively, the patient was fasted and given anti-infection therapy; he was discharged 3 days after the surgery. At 12-month follow-up, the patient had had no recurrence of his choking after eating.

The retrograde navigational tunnel technique in POEM for sigmoid-type achalasia offers two major advantages: (i) reduced surgical time because of continuous submucosal injection; (ii) enhanced accuracy in tunnel navigation, minimizing disorientation during submucosal stripping. In conclusion, the retrograde navigational tunnel technique in POEM is a viable and effective approach for the treatment of sigmoid-type achalasia.

Endoscopy\_UCTN\_Code\_TTT\_1AO\_2AP

## Funding Information

Jiangsu Provincial Medical Key Discipline  
Cultivation Unit  
JSDW202233

## Conflict of Interest

The authors declare that they have no conflict of interest.

## The authors

Zhenguo Pan<sup>1‡</sup>, Zhiying Gao<sup>1‡</sup>, Zhongshang Sun<sup>1</sup>, Feng Pan<sup>1</sup>

- 1 Department of Gastroenterology, The Affiliated Huaian No.1 People's Hospital, Nanjing Medical University, Huai'an, China

## Corresponding author

### Feng Pan, MD

Department of Gastroenterology, The Affiliated Huaian No.1 People's Hospital, Nanjing Medical University, No.1 Huanghe West Road, Huai'an, Jiangsu, 223300, China  
fengliupan@126.com

## References

- [1] Ujiki MB, VanDruff VN. Peroral endoscopic myotomy for achalasia. *World J Surg* 2022; 46: 1542–1546. doi:10.1007/s00268-022-06477-1
- [2] Parsa N, Friedel D, Stavropoulos SN. POEM, GPOEM, and ZPOEM. *Dig Dis Sci* 2022; 67: 1500–1520. doi:10.1007/s10620-022-07398-8
- [3] Rolland S, Paterson W, Bechara R. Achalasia: Current therapeutic options. *Neurogastroenterol Motil* 2023; 35: e14459. doi:10.1111/nmo.14459
- [4] Gong F, Li Y, Ye S. Effectiveness and complication of achalasia treatment: A systematic review and network meta-analysis of randomized controlled trials. *Asian J Surg* 2023; 46: 24–34. doi:10.1016/j.asjsur.2022.03.116

## Bibliography

Endoscopy 2024; 56: E344–E345

DOI 10.1055/a-2285-2627

ISSN 0013-726X

© 2024. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited.

(<https://creativecommons.org/licenses/by/4.0/>)

Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



### ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



*E-Videos* is an open access online section of the journal *Endoscopy*, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high-quality video and are published with a Creative Commons CC-BY license. Endoscopy E-Videos qualify for HINARI discounts and waivers and eligibility is automatically checked during the submission process. We grant 100% waivers to articles whose corresponding authors are based in Group A countries and 50% waivers to those who are based in Group B countries as classified by Research4Life (see: <https://www.research4life.org/access/eligibility/>).

This section has its own submission website at <https://mc.manuscriptcentral.com/e-videos>

<sup>‡</sup> Zhenguo Pan and Zhiying Gao are joint first authors.