

## Per-oral endoscopic tunneling transgastric drainage of an acute pancreatic necrotic collection



Acute pancreatic necrotic collections (APNCs) complicating necrotic pancreatitis are managed conservatively. Upon onset of complications, percutaneous, endoscopic ultrasound (EUS)-guided or surgical drainage can be applied [1, 2]. A 40-year-old with severe necrotic pancreatitis became critically ill on week 3 due to an infected APNC, diagnosed via computed tomography (CT). Percutaneous and EUS-drainage failed while surgery carried a high risk of fatal outcomes. During gastroscopy, no visible “bulge” corresponding to a compression or indentation from the collection was identified. Based on anatomy and CT, the left lateral–posterior wall of the corpus–antrum junction below the incisura exhibited optimal APNC-gastric wall contact (► **Fig. 1**). A novel endoscopic technique conforming to the principles of NOTES, termed per-oral endoscopic tunneling transgastric drainage (POET-D), was applied as a rescue therapy (► **Video 1**). First, submucosal injection of 10 cc indigo carmine-solution was performed at the left lateral–posterior wall of the corpus–antrum junction. A mucosal incision was made using an endoscopic knife. A short submucosal tunnel was created. Muscle fibers and serosa were gradually dissected near the distal end of the tunnel to allow for the preservation of a mucosal flap above the distal defect. The endoscope entered the omental bursa. The omentum, spleen and splenic ligament could be visualized. 560 cc of Klebsiella spp.-infected APNCs were aspirated and the cavity was lavaged with saline and gentamycin. A nasobiliary tube was placed inside the omental bursa for further drainage and lavage. Within 48 hours the patient improved. The tube was removed and the defect was closed with clips.

POET-D allows for preservation of a mucosal flap over the sero-muscular defect and continuous visualization of adjacent structures during dissection. It can provide rapid, large-volume drainage of viscous contents and lavage of infected cavities. POET-D can treat complicated cases of APNCs, potentially filling a therapeutic gap in-between percutaneous, EUS and surgical procedures.

Endoscopy\_UCTN\_Code\_TTT\_1AO\_2AG\_3AZ

### Contributors' Statement

Anastasios C Manolakis: Conceptualization, Supervision, Writing – original draft, Writing – review & editing. Tryfonas Mpektis: Methodology, Writing – original draft, Writing – review & editing. Konstantinos Argyriou: Methodology, Visualization, Writing – original draft, Writing – review & editing. Eirini Deligianni: Methodology, Visualization, Writing – original draft, Writing – review & editing. Dimitrios Chougias: Methodology, Visualization, Writing – original draft, Writing – review & editing. Ashish Sharma: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. Andreas Kapsoritakis: Methodology, Supervision, Writing – original draft, Writing – review & editing.

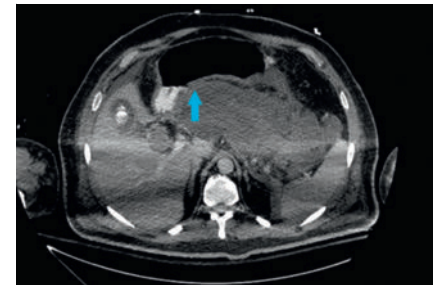
### Conflict of Interest

The authors declare that they have no conflict of interest.

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► **Fig. 1** Computed tomography image showing the site of optimal contact (blue arrow) between the pancreatic collection and the gastric wall.



► **Video 1** Per-oral endoscopic tunneling transgastric drainage (POET-D) of an acute pancreatic necrotic collection.

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## Citation Format

Endoscopy 2025; 57: E1165–E1166.  
DOI: 10.1055/a-2715-4294

## Bibliography

Endoscopy 2026; 58: 311–312

DOI 10.1055/a-2759-2586

ISSN 0013-726X

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