

Closure of esophageal–pleural fistula using a cardiac occluder in a patient with systemic sclerosis

Oleksandr Kiosov^{1,3}, Vladyslav Tkachov^{2,3}, Sergii Gulevskiy³

¹Department of General Surgery and Postgraduate Surgical Education, Zaporizhzhia State Medical and Pharmaceutical University, Zaporizhzhia; ²Department of Faculty Surgery, Zaporizhzhia State Medical and Pharmaceutical University, Zaporizhzhia; ³Multidisciplinary Surgical Department, University Clinic of Zaporizhzhia State Medical and Pharmaceutical University, Zaporizhzhia, Ukraine

Cardiac occluders are increasingly employed beyond their approved indications to address intricate or recurrent esophageal fistulas.¹ A 69-year-old woman with systemic sclerosis underwent a thoracotomy and diverticulectomy for a symptomatic midesophageal diverticulum. However, an esophageal–pleural fistula formed postoperatively. A percutaneous endoscopic gastrostomy tube was then inserted. Different methods had been tried to no avail, including a fully covered stent positioned within the esophagus over the fistula that caused permanent pain and discomfort and was removed after 1.5 months; two consecutive endoscopic attempts at a 2-week interval to glue the fistula with Histoacryl (B/Braune); endoscopic clips, which only lasted 3 days; and two attempts to close the previously ablated fistula by securing a surgical hemostatic sponge to the mucosa with clips. Over time, the esophageal wall defect increased from 2 mm to 8 mm (Fig. 1A), causing pleurisy. A ligature was attached to the end of the delivery device of a Cardia Ultrasept (Cardia Inc.) 28×14 mm atrial septal defect occluder and grasped with biopsy forceps, which had previously been passed through the instrumental channel of the gastroscope. The delivery device was delivered parallel to the gastroscope and positioned using

forceps, and the occluder was deployed under visual control to close the fistula (Fig. 1B–D). The procedure was performed with the patient under deep propofol sedation. Esophagography performed the next day confirmed the absence of leakage and correct device placement (Fig. 2). Endoscopy performed 1 month later confirmed that the occluder remained unmoved (Fig. 3). Three months later, no recurrence was noted and the patient tolerated an unmodified diet.

Patients with systemic sclerosis tend to have chronic non-healing wounds due to pathological alterations in the immune

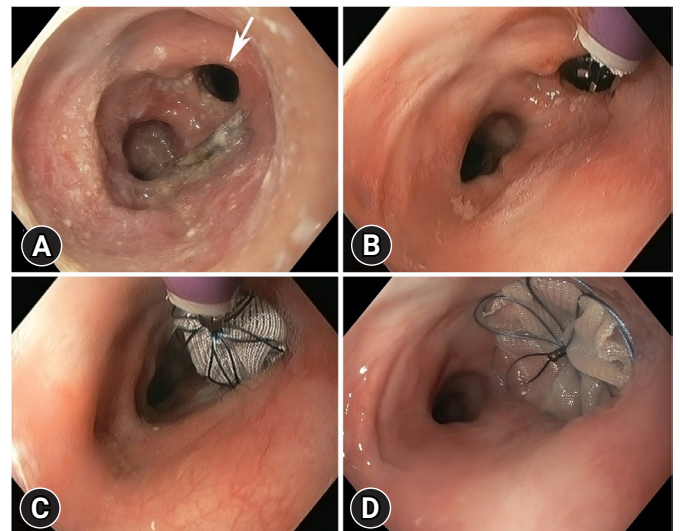


Fig. 1. (A) An image of the large 8 mm esophageal–pleural fistula (arrow) at 5 days before occluder placement. (B) Initiation of opening the occluder from the delivery device. (C) Detachment of the occluder from the delivery device. (D) Successful placement of the atrial septal defect occluder.

Received: February 16, 2024 Revised: April 2, 2024
 Accepted: April 8, 2024

Correspondence: Oleksandr Kiosov
 Zaporizhzhia State Medical and Pharmaceutical University, Zaporozhzhia,
 Dneprovsky-Porogy 19/142, Ukraine
 E-mail: kiosow015@gmail.com

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

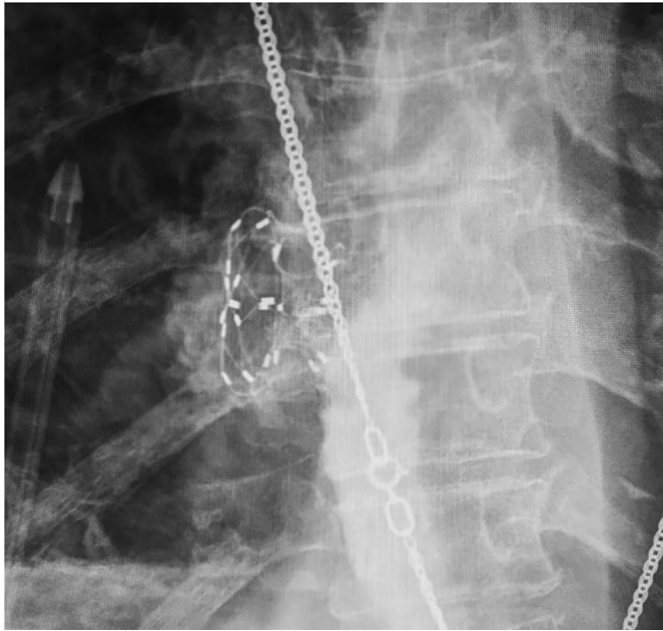


Fig. 2. X-ray taken the day after occluder placement.

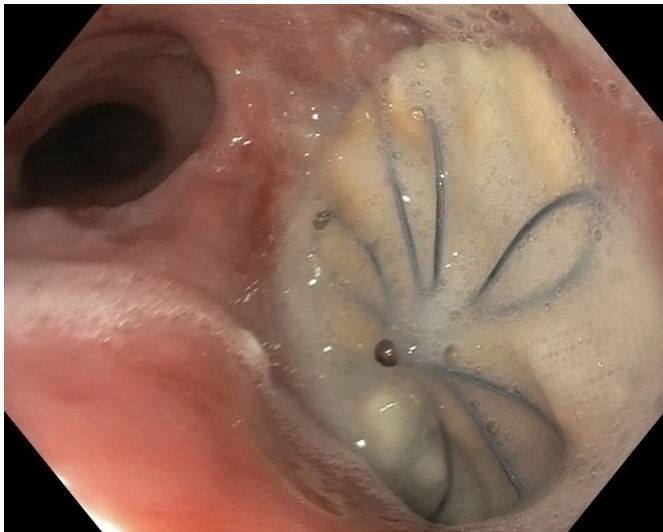


Fig. 3. Follow-up endoscopy performed 1 month after occluder placement.

and vascular systems.² The treatment of fistulas in such patients can be very difficult because of the chronic relapsing disease course; thus, non-standard approaches are required. A cardiac occluder may be an effective alternative therapy.

Conflicts of Interest

The authors have no potential conflicts of interest.

Funding

None.

Author Contributions

Conceptualization: OK, VT; Data curation: OK, VT; Investigation: OK, VT; Methodology: OK, VT; Project administration: OK; Resources: all authors; Supervision: OK; Validation: OK; Visualization: VT, SG; Writing–original draft: VT; Writing–review & editing: all authors.

ORCID

Oleksandr Kiosov	https://orcid.org/0000-0002-0212-1549
Vladyslav Tkachov	https://orcid.org/0000-0002-5583-4921
Sergii Gulevskyi	https://orcid.org/0000-0002-2115-4135

REFERENCES

1. Lassaletta AD, Laham RJ, Pinto DS, et al. Successful closure of an esophagopleural fistula with an amplatzer occluder sealed with liquid copolymer, with 3-year follow-up and review of literature. *Pleura* 2016;3:1–6.
2. Rosendahl AH, Schönborn K, Krieg T. Pathophysiology of systemic sclerosis (scleroderma). *Kaohsiung J Med Sci* 2022;38:187–195.