

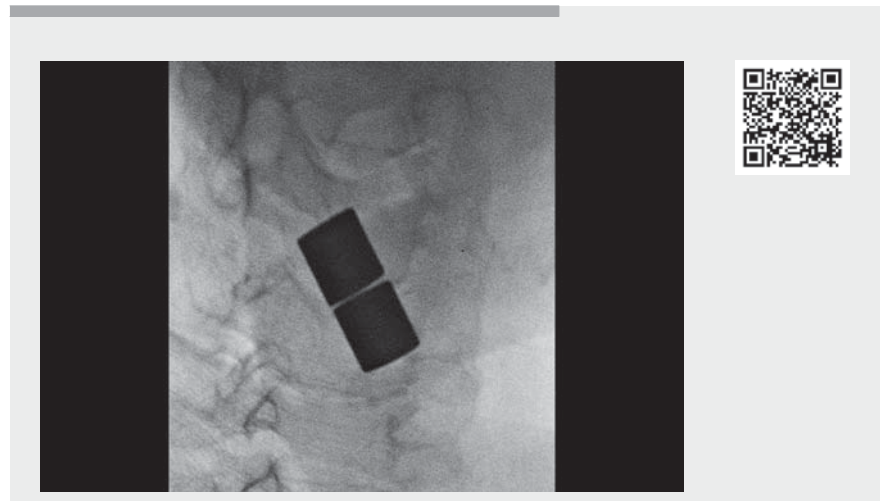
Magnetic kissing for the endoscopic treatment of a complete iatrogenic stenosis of the hypopharynx

OPEN
ACCESS

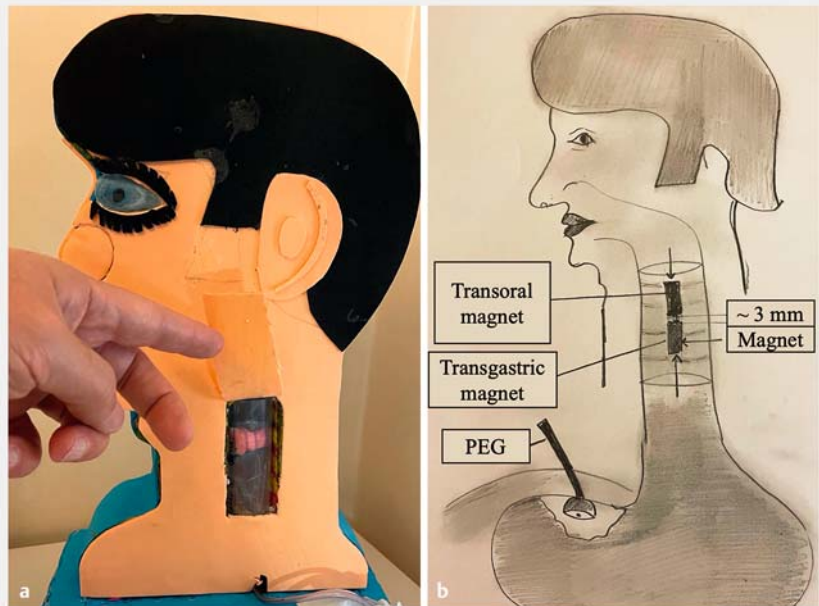
Complete hypopharyngeal stenosis is rare and challenging to treat [1]. A 72-year-old man underwent total laryngectomy with bilateral radical neck dissection, total thyroidectomy, and pectoralis major myocutaneous flap reconstruction to treat laryngeal cancer. Following adjuvant radiotherapy, the patient developed an hypopharyngeal stenosis. This was initially treated with endoscopic dilations. However, after 3 years, stricture recurrence led to complete obstruction of the hypopharyngeal lumen that required placement of a percutaneous endoscopic gastrostomy tube for nutrition. After failure of endoscopic ultrasound-guided recanalization [2], an endoscopic magnetic compression anastomosis was attempted (► **Video 1**). To our knowledge, this approach, used to repair esophageal atresia in children [3], has never been previously attempted in adults.

Following approval for compassionate care (► **Fig. 1**), two magnetic neodymium rings, with external and internal diameters of 9 mm and 3 mm, respectively, and length of 10 mm, were custom made (Cibas Srl, Milan, Italy) (► **Fig. 2**). A 6-mm diameter gastroscope was inserted through the gastrostomy site to reach the hypopharyngeal stenosis retrogradely and place a guidewire. The magnetic ring was advanced over the wire to the distal side of the stenosis, using the gastroscope as a pusher. The other magnetic ring was mounted onto a gastroscope using a distal attachment and inserted transorally in the hypopharynx. Fluoroscopy imaging monitored the attraction of the magnets, which stabilized at about 5 mm from each other.

The patient was discharged after 24 hours of uneventful observation. Magnetic attraction was monitored by X-ray every 72 hours. Eleven days later the patient expelled the magnets through the mouth. Balloon dilations were performed every week for the first month, and every



► **Video 1** Endoscopic magnetic compression anastomosis of a complete iatrogenic stenosis of the hypopharynx following surgery and radiation therapy for laryngeal cancer.



► **Fig. 1** Patient education material. **a** Physical model. **b** Illustration. PEG, percutaneous endoscopic gastrostomy.

2–4 weeks afterwards. At 9 months' follow-up, the patient was able to eat solid foods.

Endoscopic magnetic compression anastomosis to treat a complete hypopharyngeal stenosis was feasible and effective.



► **Fig. 2** Custom-made magnetic neodymium rings.

Endoscopic treatments of hypopharyngeal stenosis [4, 5] may result in lower morbidity and mortality than surgical alternatives.

Endoscopy_UCTN_Code_CPL_1AH_2AF

Acknowledgments

The authors would like to thank Cibas Srl (Milan, Italy) for kindly donating the magnetic neodymium rings used in this study.

Competing interests

Andrea Tringali is a consultant for Boston Scientific and Olympus. Ivo Bošković is a consultant for Apollo Endosurgery, Boston Scientific, Cook Medical, Nitinotes, Endo Tools, Micro Tech and Pentax; research grant Apollo Endosurgery, advisory board member Endo Tools. Guido Costamagna receives consulting fees from Cook Medical, Olympus, Boston Scientific Corp.

The authors

Pietro Mascagni^{1,2}, Andrea Tringali¹, Ivo Bošković¹, Vincenzo Bove¹, Tommaso Schepis¹, Vincenzo Perri¹, Guido Costamagna¹

- 1 Endoscopia Digestiva Chirurgica, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy
- 2 Institute of Image-Guided Surgery, IHU-Strasbourg, France

Corresponding author

Andrea Tringali, MD, PhD

Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Largo Agostino Gemelli 8, 00168 Roma, Italia
andrea.tringali@unicatt.it

References

- [1] Bourhis T, Mortuaire G, Rysman B et al. Assessment and treatment of hypopharyngeal and cervical esophagus injury: literature review. *Eur Ann Otorhinolaryngol Head Neck Dis* 2020; 137: 489–492
- [2] Mulki R, Abdelfatah MM. Endoscopic ultrasound-guided recanalization of a complete esophageal stricture. *Endoscopy* 2022; 54: E156–E157
- [3] Holler A-S, König TT, Chen C et al. Esophageal magnetic compression anastomosis in esophageal atresia repair: A PRISMA-compliant systematic review and comparison with a novel approach. *Children* 2022; 9: 1113
- [4] Schembre D, Dever JB, Glenn M et al. Esophageal reconstitution by simultaneous antegrade/retrograde endoscopy: re-establishing patency of the completely obstructed esophagus. *Endoscopy* 2011; 43: 434–437

- [5] Kim M, Kats D, Kahaleh M. Kissing scopes: treatment of complete esophageal obstruction using combined antegrade/retrograde approach. *Endoscopy* 2021; 53: E106–E107

Bibliography

Endoscopy 2023; 55: E499–E500

DOI 10.1055/a-2029-6340

ISSN 0013-726X

© 2023. The Author(s).

This is an open access article published by Thieme under the terms of the Creative Commons Attribution-NonDerivative-NonCommercial License, permitting copying and reproduction so long as the original work is given appropriate credit. Contents may not be used for commercial purposes, or adapted, remixed, transformed or built upon. (<https://creativecommons.org/licenses/by-nc-nd/4.0/>)
Georg Thieme Verlag KG, Rüdigerstraße 14, 70469 Stuttgart, Germany



ENDOSCOPY E-VIDEOS

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



Endoscopy E-Videos is an open access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online. Processing charges apply, discounts and waivers acc. to HINARI are available.

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