

6-12-2023

A Novel Endoscopic Ultrasound-Guided Transluminal Anchor Device

Abhishek Agnihotri

Alexander Schlachterman
Thomas Jefferson University

Follow this and additional works at: https://jdc.jefferson.edu/gastro_hepfp



Part of the [Gastroenterology Commons](#), and the [Surgery Commons](#)

[Let us know how access to this document benefits you](#)

Recommended Citation

Agnihotri, Abhishek and Schlachterman, Alexander, "A Novel Endoscopic Ultrasound-Guided Transluminal Anchor Device" (2023). *Division of Gastroenterology and Hepatology Faculty Papers*. Paper 96.
https://jdc.jefferson.edu/gastro_hepfp/96

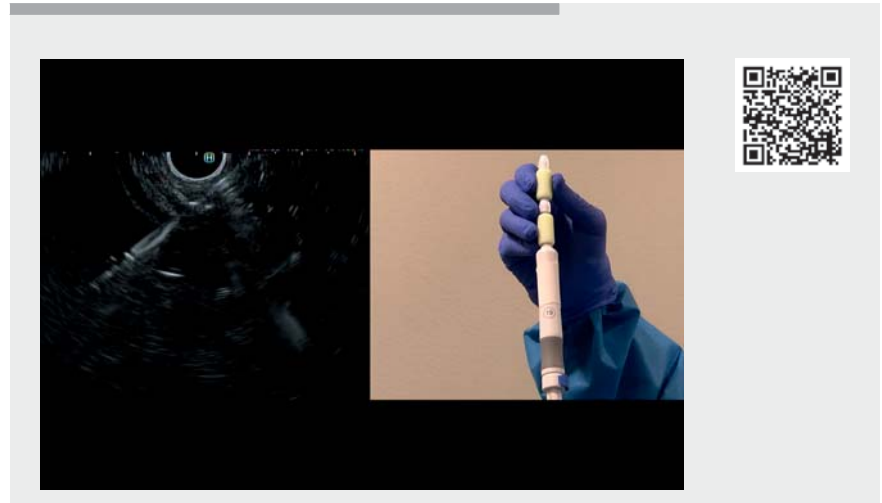
This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Division of Gastroenterology and Hepatology Faculty Papers by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.

A novel endoscopic ultrasound-guided transluminal anchor device

OPEN
ACCESS

Over the last decade, there has been significant advancement in the field of therapeutic endoscopic ultrasound (EUS) [1]. Multiple transluminal interventions are now performed, including the creation of gastrojejunostomies using a lumen-apposing metal stent (LAMS) and EUS-guided transgastric endoscopic retrograde cholangiopancreatography, among other examples [2]. These procedures carry risks of perforation, which occurs mostly because of stent misdeployment or migration [3]. Attempts to use a 19-gauge needle to place an anchor have been described previously [4,5]; however, these attempts required manual loading of the anchor, making the procedure cumbersome. We report the use of a novel EUS-guided transluminal anchor and cinch (S-Lock).

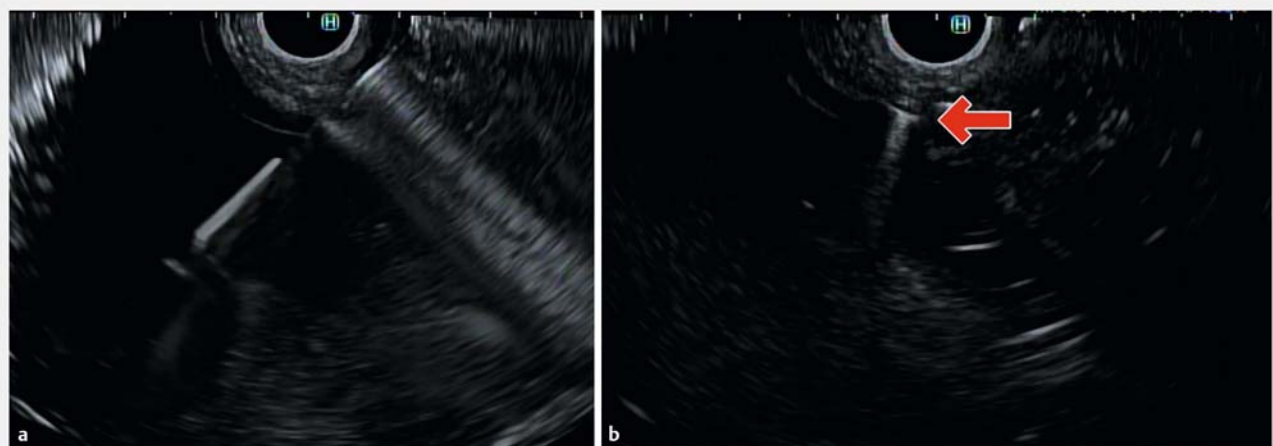
An ex vivo porcine stomach model was used to simulate two adjacent lumens (► **Video 1**). A 19-gauge EUS access needle was used to perform transluminal puncture (► **Fig. 1**) – a blunt access needle is preferred to reduce the risk of suture breakage from a sharp needle – and the stylet was removed. The transluminal anchor device was loaded and the steel



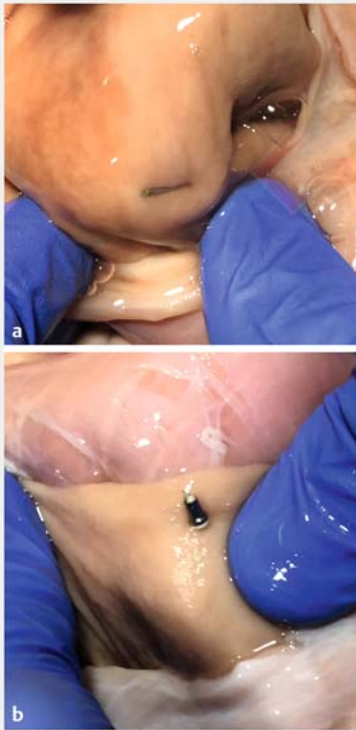
► **Video 1** Demonstration in an ex vivo porcine stomach model and step-by-step guide to the use of the device, deploying a transluminal anchor and cinching the suture in place.

insert was advanced. Under EUS guidance, the anchor was advanced through the needle and visualized to be in the lumen on EUS. The insert and the 19-gauge needle were then removed, leaving the suture and anchor in place. The suture was then cinched, leading to apposition of the two lumens (► **Fig. 2**). More than one anchor may be applied in this way.

This device significantly improves upon previously described devices, given its single platform with a loaded anchor, which obviates the need to manually load an anchor and suture. The device has the potential to make transluminal interventions using LAMSs safer and reduce the risk of stent misdeployment and migration. Further research is need-



► **Fig. 1** Endoscopic ultrasound images showing: **a** transluminal puncture using a 19-gauge needle; **b** deployment of the anchor in the lumen, with the anchor visualized as a hyperechoic shadowing reflector (red arrow), with tenting of the lumen wall on pulling the attached suture.



► **Fig. 2** Photographs showing the appearances of: **a** the anchor in the lumen; **b** the cinch in the opposite lumen.

ed on the safety and efficacy of this device in human trials.

Endoscopy_UCTN_Code_TTT_1AS_2AB

Competing interests

A. Schlachterman has provided consultancy for Fujifilm, Olympus, Apollo Endosurgery, and Lumendi. A. Agnihotri declares that he has no conflict of interest.

The authors

Abhishek Agnihotri¹  **Alexander Schlachterman**²

- 1 Division of Gastroenterology, Bayhealth Medical Center, Dover, Delaware, USA
- 2 Division of Gastroenterology, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, USA

Corresponding author

Alexander Schlachterman, MD

Division of Gastroenterology and Hepatology, Thomas Jefferson University Hospital, 111 S 11th St, Philadelphia, PA 19107-4824, USA
alexschlach@gmail.com

References

- [1] Vanella G, Bronswijk M, Arcidiacono PG et al. Current landscape of therapeutic EUS: Changing paradigms in gastroenterology practice. *Endosc Ultrasound* 2023; 12: 16–28
- [2] Honda H, Mosko JD, Kobayashi R et al. Endoscopic ultrasound-directed transgastric endoscopic retrograde cholangiopancreatography for patients with Roux-en-Y gastric bypass anatomy: technical overview. *Clin Endosc* 2022; 55: 736–741
- [3] Ghandour B, Bejjani M, Irani SS et al. Classification, outcomes, and management of misdeployed stents during EUS-guided gastroenterostomy. *Gastrointest Endosc* 2022; 95: 80–89
- [4] Wang GX, Zhang K, Sun SY. Retrievable puncture anchor traction method for endoscopic ultrasound-guided gastroenterostomy: A porcine study. *World J Gastroenterol* 2020; 26: 3603–3610
- [5] Chapman CG, Siddiqui UD, Alansari A et al. Sa2005. A novel EUS-FNA anchor traction system for EUS-guided gastroenterostomy: a porcine pilot and feasibility study. *Gastrointest Endosc* 2020; 91: AB237

Bibliography

Endoscopy 2023; 55: E775–E776

DOI 10.1055/a-2088-8753

ISSN 0013-726X

© 2023. 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>