DDW2026
Digestive Disease Week®
MAY 2–5, 2026 | CHICAGO, IL
EXHIBIT DATES: MAY 3–5, 2026

Development of a Novel Anchor Device for EUS-guided Gastrojejunostomy

A single-step 19G needle-compatible anchoring system to improve safety

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INTRODUCTION

- Recent advances in interventional EUS have enabled endoscopic alternatives to surgical procedures.
- EUS-guided gastrojejunostomy (EUS-GJ) is a minimally invasive option for gastric outlet obstruction.
- However, EUS-GJ is technically demanding and requires a high level of expertise.(1)
- The jejunum is not fixed and may move away during puncture or device deployment.
- In LAMS-based EUS-GJ, close apposition of the two lumens is essential.
- Anchoring the target organ may improve stability and procedural safety.
- However, existing anchoring techniques can be complex and time-consuming.(2)
- Therefore, we developed a novel anchor device deployable through a 19G needle.(3)
- This device aims to approximate and stabilize the jejunum to the gastric wall.

AIM

To evaluate the feasibility of a newly developed anchor device designed for EUS-GJ.

METHOD

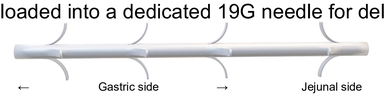
• Study period: May–November 2025

• Subjects: 5 live pigs (30–36 kg)

• Necropsy: 4 immediate, 1 at 1 month Procedure:

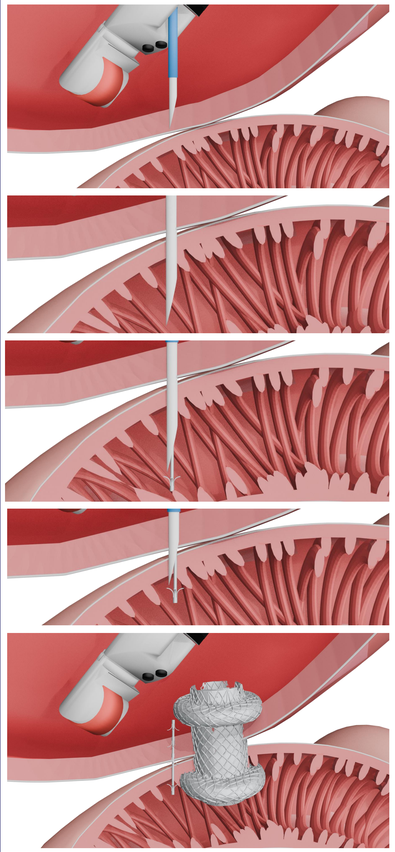
Anchoring Device (KOEDA anchor)

- Length: 20 mm or 30 mm
- Material: Nitinol
- Removable using a standard polypectomy snare
- Preloaded into a dedicated 19G needle for delivery

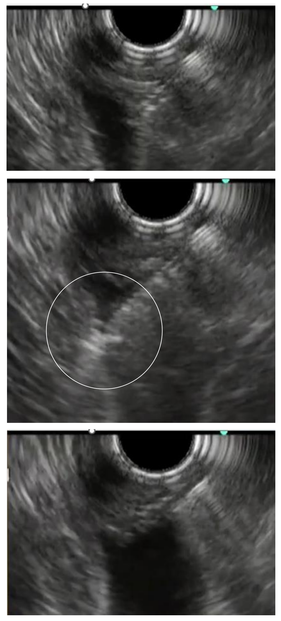


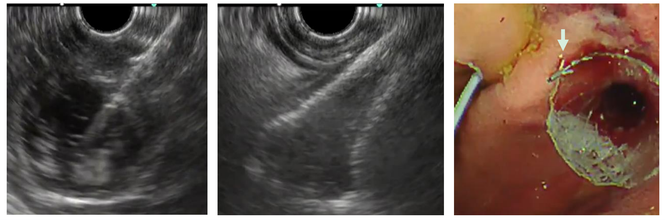
Endpoints

- Technical success of anchor deployment
- Rate of anchor retention at necropsy
- Anchor deployment time



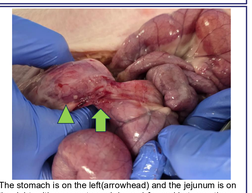
- An EUS scope is advanced into the stomach.
- The dilated jejunum is punctured using a dedicated 19G needle preloaded with the KOEDA anchor.
- The anchor is advanced by pushing the stylet.
- The distal arms of the anchor are deployed within the jejunal lumen.
- The needle is gently withdrawn to approximate and fix the jejunal wall to the gastric wall.
- The 19G needle is removed from the scope.
- Adjacent to the KOEDA anchor, a cautery-enhanced LAMS is deployed to create the gastrojejunostomy





RESULTS

- Anchor deployment was successful in all cases,
- Retention between the gastric and jejunal walls was confirmed at necropsy in all pigs
- The mean deployment time was **57 seconds** (34-85 seconds).



The stomach is on the left(arrowhead) and the jejunum is on the right, with an anastomosis(arrow) formed between them.

CONCLUSIONS

The novel anchor device enabled simple and rapid wall fixation during EUS-GJ. This device may have the potential to reduce adverse events such as misdeployment or dislocation and improve the safety of EUS-GJ procedures.

REFERENCES

(1)AbiMansour JP, Aggarwal M, Zeid HA, et al. Gastrointest Endosc. 2025.
(2)Zhang K, Sun S, Guo J, et al. Gastrointest Endosc . 2018;88:957–63.
(3)Okuzono T, Miyamoto K-I, et al. J Hepatobiliary Pancreat Sci**. 2022;29:825–31.

DISCUSSION

Advantages

- Stronger wall fixation may reduce the risk of stent dislodgement and maldeployment
- Potential to improve procedural stability and safety, especially for non-expert operators

Limitations / Trade-offs

- Additional device cost and deployment time
- Increased number of punctures (approximately doubled)
- Anchor-related adverse events remain unknown (require further clinical validation)

- Comparison of dislodgement force in 15-mm LAMS with and without anchoring (0.5mm-thickness silicon membrane with a 15mm hole)

ACKNOWLEDGEMENTS

- JST START program （Grant Number JPMJST2018）
- AMED seeds C(a)（Grant Number JP22ym0126085）
- AMED Medical Device Development Support Program for Global Expansion（Grant Number JP22ym0126085）
- METI R&D Support Program for Growth-oriented Technology SMEs

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