



Expanding the Potential of Endoscopic Ultrasound-Guided Drainage: Clinical Insights into a Novel Multi-Length Lumen-Apposing Metal Stents

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See “The Efficacy and Safety of Endoscopic Ultrasound-Guided Retroperitoneal Fluid Collection Drainage with Novel Electrocautery-Enhanced Lumen-Apposing Metal Stents (with Video)” by Sung Hyun Cho, et al. on page 454, Vol. 19, No. 3, 2025

Management of retroperitoneal fluid collections, including postoperative pancreatic fluid collections (POPFs) and peripancreatic fluid collections (PFCs), has evolved dramatically with advances in endoscopic ultrasound (EUS)-guided techniques. Traditional approaches such as percutaneous drainage or surgery are often associated with inconvenience and morbidity, whereas EUS-guided transmural drainage (EUS-TD) offers a minimally invasive alternative with internalized drainage.¹ The development of lumen-apposing metal stents (LAMS) has been pivotal in facilitating safe and effective EUS-TD by creating stable anastomoses between the gastrointestinal (GI) lumen and the fluid collection.^{2,3}

The clinical utility of LAMS in managing PFCs, including pancreatic pseudocysts and walled-off necrosis, has been well established in several landmark studies demonstrating high technical and clinical success rates.^{4,5} In contrast, although research on the use of LAMS for POPFs remains relatively limited, emerging evidence suggests similarly favorable outcomes, supporting the expanding role of EUS-TD in postoperative settings.⁶⁻⁸ Importantly, the success of EUS-TD depends not only on the technical execution but also on patient-specific anatomical factors, such as the location of the fluid collection and its adherence to the GI tract. Collections that are not closely apposed to the GI wall may pose significant challenges during stent deployment, increasing the risk of misplacement or migration.⁹

In this issue of *Gut and Liver*, Cho *et al.*¹⁰ report a study evaluating the efficacy and safety of a novel electrocautery-

enhanced multi-length LAMS (Hot-PLUMBER with Z-EUS IT; MI Tech Co., Ltd., Seoul, Korea) for EUS-guided drainage of POPFs and PFCs. This device, offering variable inter-flange lengths (13 to 33 mm), is designed to address a previously unmet need for flexible stenting options when the target lesion is located more than 1 cm away from the GI wall. Unlike conventional LAMS that primarily feature a fixed short inter-flange distance, the novel device allows endoscopists to tailor stent selection based on the anatomical situation.

Cho *et al.*¹⁰ report an impressive technical success rate of 100% and a clinical success rate of 90% across 10 patients, including challenging cases of POPF following pancreatic surgery. Only two adverse events were noted—one case of stent migration and one infection—both managed conservatively without major morbidity. The procedural videos accompanying the article demonstrate streamlined stent deployment using either a free-hand or guidewire-assisted technique, underscoring the versatility of the system.

This study adds important evidence supporting the use of EUS-TD for complex retroperitoneal fluid collections, where traditional LAMS placement can be technically challenging. Particularly, POPFs are often located at postoperative anastomosis sites and may not be closely adherent to the GI wall, necessitating longer stent lengths to ensure secure drainage.⁸ The availability of longer LAMS lengths provides a critical advantage in these scenarios. Furthermore, the electrocautery-enhanced delivery system simplifies the procedure by allowing single-step access without



the need for prior tract dilation or guidewire exchange.¹⁰

Nonetheless, several important considerations should be emphasized. The case of spontaneous stent migration observed in the study highlights a potential trade-off between extended inter-flange lengths and decreased lumen-apposing force. As fluid collections collapse following drainage, the reduced apposition force with longer stents could predispose to migration or dislodgment. Careful stent selection based on real-time EUS measurements, including evaluation of the distance between the GI wall and the fluid collection, is critical. In cases where stent migration risk is deemed high, adjunctive placement of internal plastic stents may be considered to secure the drainage tract.

Moreover, appropriate patient selection remains crucial. While EUS-TD with LAMS has proven to be safe and effective, not all patients are ideal candidates. POPFCs with complex loculations, infected debris, or poorly defined collections may require alternative or adjunctive drainage approaches, such as percutaneous drainage or surgical intervention. Future studies focusing on defining anatomical and clinical predictors of EUS-TD success in POPFCs will further refine patient selection and procedural planning.

Despite the promising early results demonstrated in this study, multicenter prospective trials with larger patient cohorts are necessary to validate these findings and to establish standardized guidelines for device selection, deployment techniques, and post-procedural management. Furthermore, long-term follow-up studies are essential to assess stent-related complications, such as buried stent syndrome, and to evaluate the durability of clinical success.

In conclusion, the study by Cho *et al.*¹⁰ provides valuable insights into the evolving field of therapeutic EUS. The novel electrocautery-enhanced multi-length LAMS appears to be a valuable addition to the interventional endoscopist's toolkit, offering an effective and versatile option for managing complex retroperitoneal fluid collections, including POPFCs. Continued innovation in device design, procedural techniques, and clinical algorithms will be critical to further advancing patient outcomes in this challenging area.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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