

# Duodenal Stent Fixation Using Through-The-Scope Helix Tack and Suture Device

Natalie Wilson, MD<sup>1</sup>, Nicholas McDonald, MD<sup>2</sup>, Bryant Megna, MD<sup>2</sup>, Mohamed Abdallah, MD<sup>2</sup>, Mohammad Bilal, MD<sup>3</sup>

<sup>1</sup>University of Minnesota Medical Center, Department of Internal Medicine, Minneapolis, MN, USA

<sup>2</sup>University of Minnesota Medical Center, Division of Gastroenterology and Hepatology, Minneapolis, MN, USA,

<sup>3</sup>Minneapolis Veterans Affairs Health Care System, Minneapolis, MN, USA

## INTRODUCTION

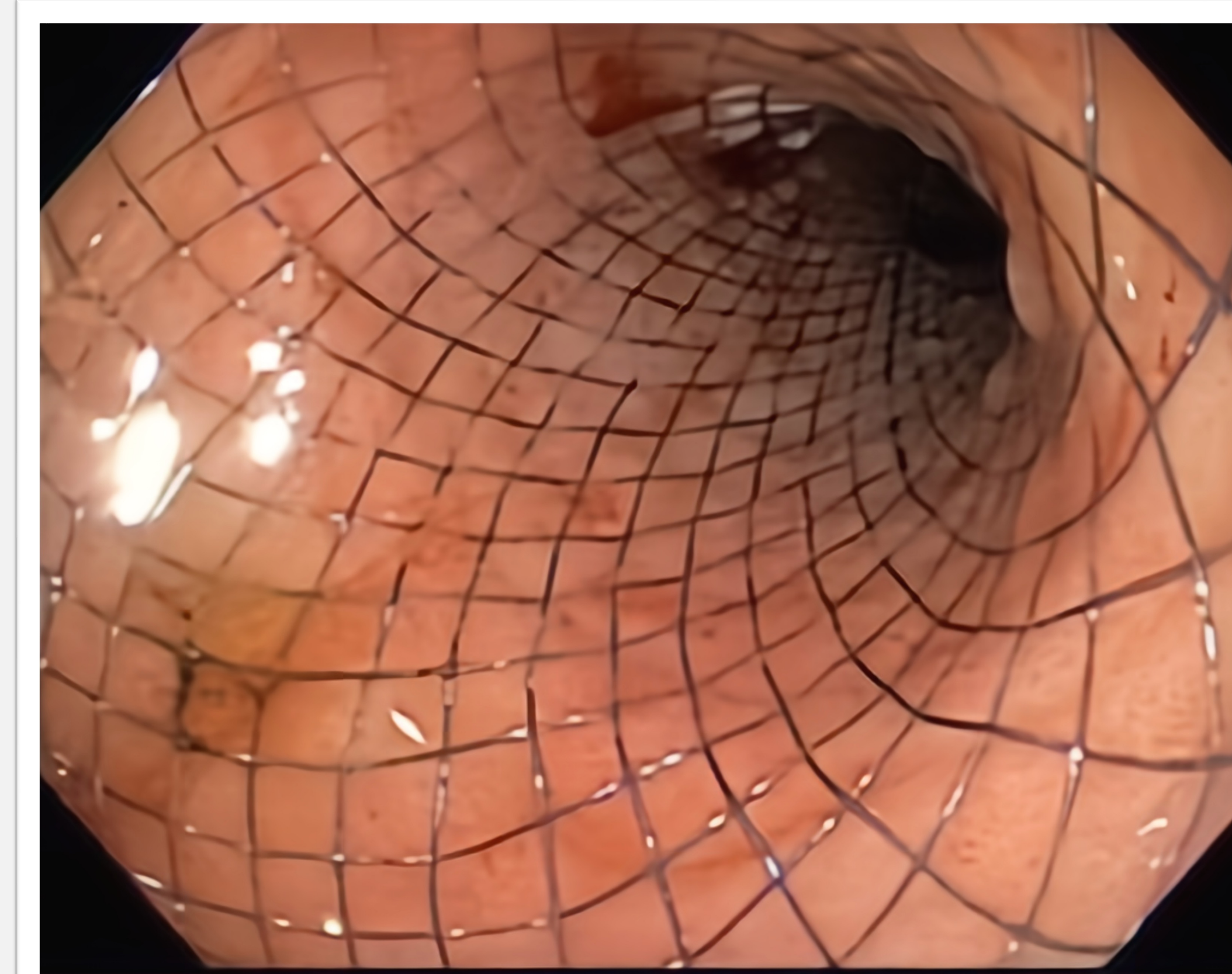
- Malignant gastroduodenal strictures are often managed with endoscopic stent placement<sup>1</sup>
- One of the main limitations of duodenal self-expanding metal stents (SEMS) is the risk of migration<sup>2</sup>
- Multiple techniques have been used to prevent stent migration, including stent fixation using through-the-scope (TTS) clips, over-the-scope stent fixation devices, and endoscopic suturing<sup>3-4</sup>
- TTS suturing using the helix tack and suture device is a novel suturing method that is generally used for defect closure, though it has been rapidly gaining popularity for alternate uses<sup>5</sup>

## CASE PRESENTATION

- 73-year-old male with pancreatic adenocarcinoma on chemotherapy presented with 3 weeks of abdominal distension and vomiting
- Imaging showed duodenal obstruction secondary to pancreatic adenocarcinoma
- Esophagogastroduodenoscopy (EGD) showed duodenal stenosis from tumor infiltration at the duodenal sweep (**Figure 1**)
- Stenosis measured 2 cm in length
- EUS-guided gastrojejunostomy was not an option as the patient was a possible surgical candidate (institution protocol)
- A 25 mm x 10 cm uncovered self-expanding metal stent was placed (**Figure 2**)
- Decision was made to fixate the stent to reduce migration prior to stent expansion and tissue ingrowth
- A TTS suturing device (X-tack, Apollo Endosurgery, Austin, TX, USA) was used to fixate the stent by placing four tacks in a stent-mucosa-mucosa-stent fashion (**Figure 3**)
- No adverse events were reported within the first 4 weeks of the procedure



**Figure 1.** A duodenal stenosis is seen on upper endoscopy at the duodenal sweep



**Figure 2.** Uncovered self-expanding metal stent placed across the stenosis

## CONCLUSION

While uncovered stents typically carry a lower risk of migration compared to covered stents<sup>1,2</sup>, in this case the tissue apposition was less than desired and thus the through-the-scope suturing device was successfully used for stent fixation



**Figure 3.** Final view of the duodenal stent after fixation with four tacks placed in a stent-mucosa-mucosa-stent fashion using the TTS tack and suture device

## REFERENCES

1. Jue T, Storm A, Naveed M, et al. ASGE guideline on the role of endoscopy in the management of benign and malignant gastroduodenal obstruction. *Gastrointest Endosc* 2021; 93: 309-322
2. Tringali A, Costa D, Anderloni A, et al. Covered versus uncovered metal stents for malignant gastric outlet obstruction: a systematic review and meta-analysis. *Gastrointest Endosc* 2020; 92: 1153-1163
3. Hori Y, Hayashi K, Naitoh I, et al. Feasibility and safety of duodenal covered self-expandable metallic stent fixation: an experimental study. *Surg Endosc* 2019; 33: 4026-4031
4. Takahara N, Isayama H, Nakai Y, et al. A novel partially covered self-expandable metallic stent with proximal flare in patients with malignant gastric outlet obstruction. *Gut Liver* 2017; 11: 481-488
5. Mahmoud T, Wong Kee Song LM, Stavropoulos SN, et al. Initial multicenter experience using a novel endoscopic tack and suture system for challenging GI defect closure and stent fixation (with video). *Gastrointest Endosc* 2022; 95: 373-382