

# Pitfalls in stent deployment during EUS-guided gastrojejunostomy using Hot Axios™ (with videos)

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A 71-year-old man with multiple medical problems presented with gastric outlet obstruction due to pyloric stricture from a nonhealing peptic ulcer and a 10-kg weight loss in 3 months. Biopsies of the stricture and abdominal computed tomography scan were negative for malignancy and infectious causes. He underwent series of endoscopic balloon dilation up to 12 mm without adequate response. He could not tolerate a soft or regular diet and refused to undergo surgery. Thus, EUS-guided gastrojejunostomy (EUS-GJ) was undertaken.

A 30 mm custom-made single balloon catheter (7-French) with below injection was inserted into the proximal jejunum under fluoroscopic guidance [Figure 1]. A water solution containing 0.5% methylene blue and contrast media was infused until the distal duodenum, and proximal jejunum was fully distended [Figure 2]. A 10 mm × 20 mm cautery-enhanced HOT AXIOS™ stent was used to puncture the inflated small bowel loop with a free-hand technique. However, we lost the target bowel loop's visualization during the proximal flange

deployment and decided to retrieve the stent [Video 1]. Then, the puncture was reattempted using wire guided, and the stent was deployed. After complete stent deployment, peritoneal fat was visualized [Figure 3 and Video 2], suggesting perforation. Thus, the stent was removed using rat tooth forceps, and the puncture site was closed with through-the-scope clips. The patient was NPO, and intravenous fluid and antibiotics were given. He did well after 48 h of observation and was discharged. The EUS-GJ was repeated 6 weeks later, and the procedure was successful without complications [Figure 4 and Video 3].

EUS-GE has emerged as a promising alternative treatment for gastric outlet obstruction. The recent meta-analysis showed that EUS-GE had a 92%–94% technical success and a 90%–91% clinical success.<sup>[1-3]</sup> Stent misdeployment is not an unusual pitfall occurring in 9.5% of reported cases.<sup>[3]</sup> The mobility of the small bowel may result in loss of visualization and subsequent stent misdeployment.<sup>[4]</sup> Insertion of the guidewire can

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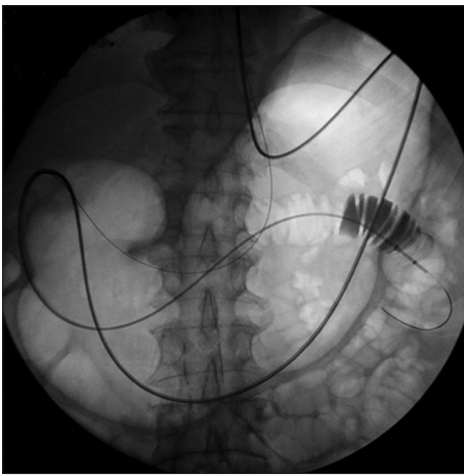
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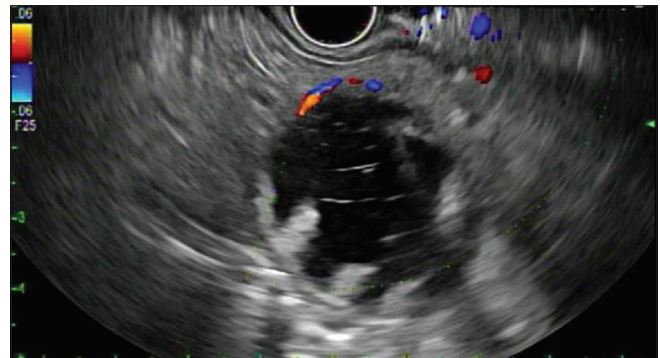
**Table 1. Proposed causes of pitfalls during stent deployment and possible rescue maneuvers**

Pitfalls	Caused by	Possible rescue maneuvers
Missed puncture The tip of the LAMS is outside the small bowel, but the first flange is not yet deployed The first flange is deployed outside the small bowel	Inadequate distension of the target small bowel with water Too much small bowel mobility  Puncture outside the target small bowel Stent is slipped during deployment due to poor visualization as the target small bowel moves	Retract the device and re-puncture after getting a better visualization of the target small bowel  If the problem is recognized during the procedure, re-sheath the opening flange back into the deployment catheter, retract the delivery system, stop the procedure, and close the puncture site. Re-attempt in the same session may be individualized Contrast injection may be performed to assess the stent position if the tip of the stent is not clearly visualized
The second flange is deployed outside the stomach	Deploying the stent outside the working channel or too far from the scope	Wire cannulation through the puncture site into the deployed stent and placement of a new stent would be needed. Surgery is also an option

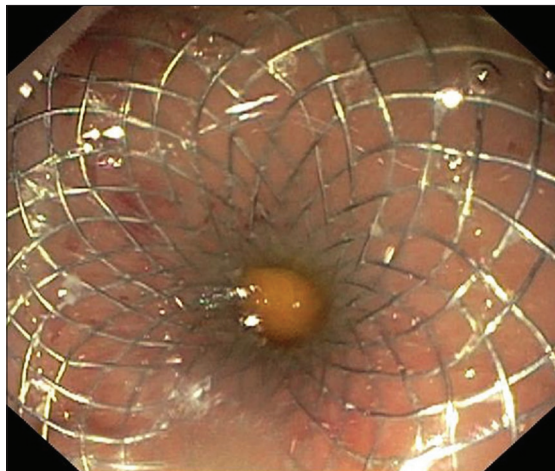
LAMS: Lumen-apposing metal stent



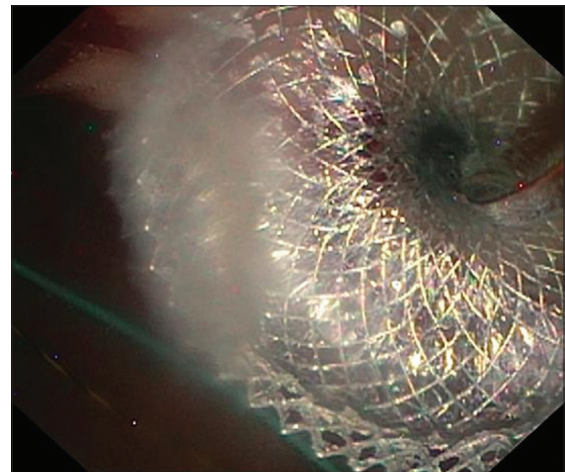
**Figure 1.** Insertion of a single balloon catheter into the proximal jejunum under fluoroscopy



**Figure 2.** EUS image of distended small bowel loop before direct puncture



**Figure 3.** Visualization of peritoneal fat after stent deployment



**Figure 4.** Successful EUS-guided gastrojejunostomy using HOT AXIOS™

push the small bowel away, thus increasing the risk of stent misdeployment.<sup>[5]</sup> Potential causes of pitfalls during stent deployment and rescue maneuvers are proposed in Table 1.

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*Declaration of patient consent*

The authors certify that they have obtained all

appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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*Conflicts of interest*

Nonthalee Pausawasdi and Thawee Ratanachu-ek are Editorial Board Members of the journal. The article was subject to the journal's standard procedures, with peer review handled independently of these Editors and their research groups.

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