



How to perform direct percutaneous gastrostomy with T-fastener gastropexy using endoscopic guidance

Ammar Ismail, MD, Donna Salam, MD, Hassan Siddiki, MD

INTRODUCTION

Percutaneous gastrostomy has been performed since the early 1980s^{1,2} and has several indications that include neoplasms involving the digestive system proximal to the stomach. Traditionally, these tubes have been placed either surgically or endoscopically; however, over the past 2 to 3 decades, interventional radiologists have increasingly performed these procedures successfully.³ In patients with severe malignant esophageal strictures due to carcinomas, insertion of mushroom-retained PEG, which is pulled from the patient's mouth into the stomach using the standard pull technique, has an associated risk of tumor seeding.^{4,6} In such scenarios, it is preferred to use the balloon-retained gastrostomy tube⁷ via the direct percutaneous gastrostomy technique using the Introducer Kit for Gastrostomy Feeding Tube (Avanos Medical, Inc, Alpharetta, Ga, USA; Fig. 1), which includes gastropexy T-fasteners⁸ and a telescopic serial dilator for the gastrostomy track, to introduce the feeding tube percutaneously. The kit comes with different sizes that reflect the size of the included telescopic serial dilator system, starting from 16F to 22F, with each size having a different dilator color (Fig. 1 shows the 18F kit). The dilator system has 5 progressively wider dilators, with the third (middle) dilator always red in color and 14F in size (Video 1, available online at www.videogie.org).

CASE REPORT

An 83-year-old man with known metastatic lung adenocarcinoma presented with severe dysphagia and an inability to tolerate oral liquids or solids. The patient complained of progressive dysphagia for the previous 2 months and reported a 20-pound weight loss. Cross-sectional im-

aging was performed with CT, which showed esophageal obstruction associated with a mass, likely metastatic disease.

EGD showed severe esophageal stricture. The standard upper scope did not pass, and the scope was downsized to a neonatal scope. An appropriate position for the gastrostomy site was selected with trans-illumination and manual pressure; however, the previous PEG tube site could not be visualized. The skin was cleaned with chlorhexidine. Glucagon 0.5 mg to 1 mg intravenously could have been used to diminish gastric peristalsis, help maintain proper gastric insufflation, and prevent T-fastener placement in the posterior gastric wall. Three of the 4 T-fasteners were deployed (Fig. 2). The fourth T-fastener was present in case one got misdeployed. Dilation was performed using a telescopic dilator consisting of 5 progressively wider dilators, with the third dilator colored red (Fig. 3). Once the tract was dilated up to 20F, a 16F gastrostomy tube (G-tube) was inserted. A 20F dilator is required for the 16F G-tube because the balloon is attached to the outside of the tube and adds 4F. The balloon of the PEG tube was then filled with 5 mL of sterile water to fix the tube in place (Fig. 4). Water in the balloon should be refreshed every week. Sutures usually dissolve and buttons fall off within 3 to 4 weeks.

Follow-up in 2 weeks showed a functioning PEG tube, and the patient did not report any pain or infection at the gastrostomy site. The patient is tolerating G-tube feeding and continues to undergo chemotherapy and radiation therapy for palliation.

CONCLUSION

The decision to use the direct percutaneous gastrostomy technique in cases with tumors causing esophageal strictures was successful and may have helped to avoid metastatic adverse events reported with PEG tube insertion using the pull technique.^{5,6}

DISCLOSURE

The authors disclosed no financial relationships relevant to this publication.

Abbreviation: G-tube, gastrostomy tube.

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Digestive Disease and Surgery Institute, Cleveland Clinic, Cleveland, Ohio.

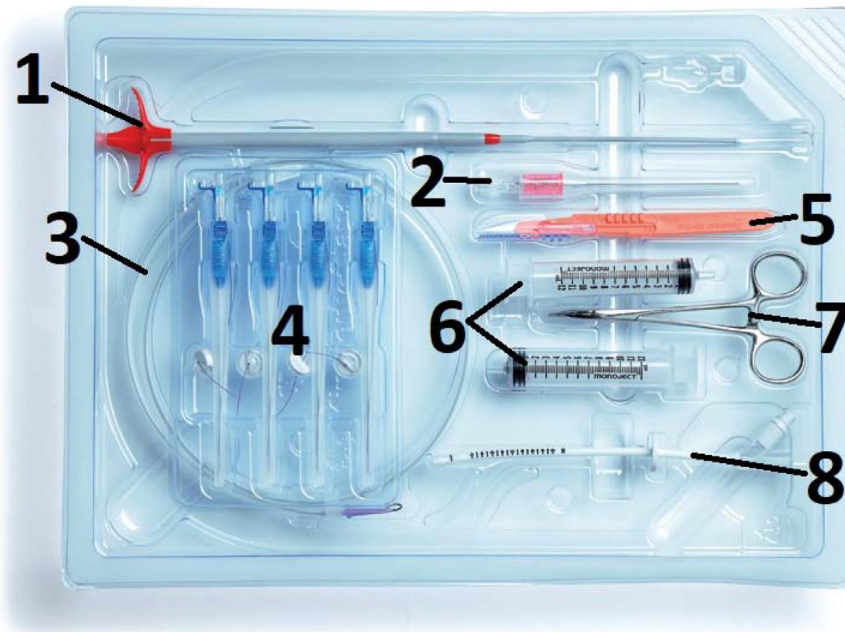


Figure 1. Eighteen-French Introducer Kit for Gastrostomy Feeding Tube (Avanos Medical, Inc, Alpharetta, Ga, USA). **1**, Telescopic dilator set. **2**, Guidewire introducing needle. **3**, Guidewire. **4**, T-fasteners, GI anchor set. **5**, Scalpel. **6**, Two 10-mL syringes. **7**, Forceps. **8**, Stoma measuring device (primarily used in low-profile gastrostomies).



Figure 2. Three T-fasteners in place.



Figure 3. Third dilator (*red*) of the telescopic dilator set, seen inside the stomach.

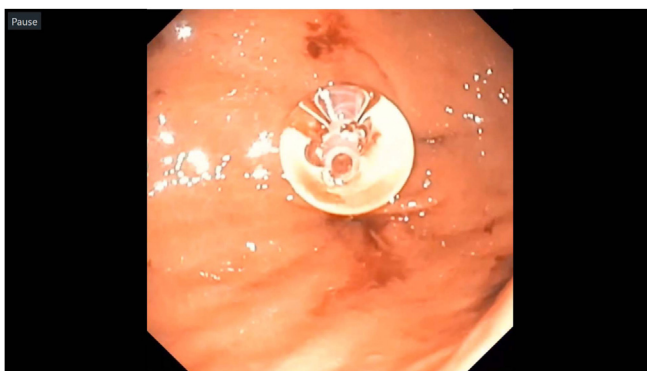


Figure 4. Gastrostomy tube balloon filled with 5 mL of sterile water, seen inside the stomach.

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