



Endoscopic suturing of a jejunal feeding tube extension to prevent recurrent gastric coiling

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Since the technique was developed in the 1980s, percutaneous endoscopic gastrostomy (PEG) has become the method of choice for long-term enteral nutrition in the United States.^{1,2} Over 200,000 PEG placements occur yearly in the United States alone.³ Although PEG placement is generally safe, adverse events may arise in the periprocedural time frame.¹ Delayed adverse events may also occur in association with PEG use and wound care after the tract has matured.^{1,2} Some adverse events associated with PEG use include peristomal pain, infection, peristomal bleeding, and GI bleeding or ulceration.^{1,2} When a PEG with jejunal extension is used, tube migration or dislodgement occurs in more than 10% of cases.⁴

Here, we present a case of endoscopic stay sutures successfully used to prevent migration of a jejunal extension of a feeding tube, allowing for enteral nutrition and avoiding parenteral nutrition or surgical gastrojejunostomy for our

patient. Although a similar technique has been previously described by Agnihotri et al,⁵ the successful outcome in our case further substantiates and provides video instruction for this technique using endoscopic suturing in cases of recurrent jejunal extension migration.⁵

A 23-year-old woman was referred for evaluation of recurrent nausea and vomiting leading to failure to thrive, secondary to idiopathic gastroparesis. She had experienced a 40-pound weight loss, with a nadir body mass index of 14.5 kg/m² despite outside surgical PEG with jejunal extension placement for nutritional support and supplementation. Three times previously, her jejunal extension had migrated proximally, with the jejunal extension coiling within the body of the stomach (Fig. 1), leading to recrudescence of her gastroparetic symptoms, including nausea and vomiting and intolerance of tube feedings.

As in prior procedures to replace and reposition the jejunal extension, the jejunal tube was removed from the gastrostomy. A pediatric endoscope was advanced through the gastrostomy tube, through the pylorus, and into the third portion of the duodenum. Through the pediatric endoscope, a guidewire was placed and coiled in the proximal jejunum. The endoscope was removed, and under fluoroscopic guidance a new 18F MIC transgastric jejunal feeding extension was placed over the guidewire.

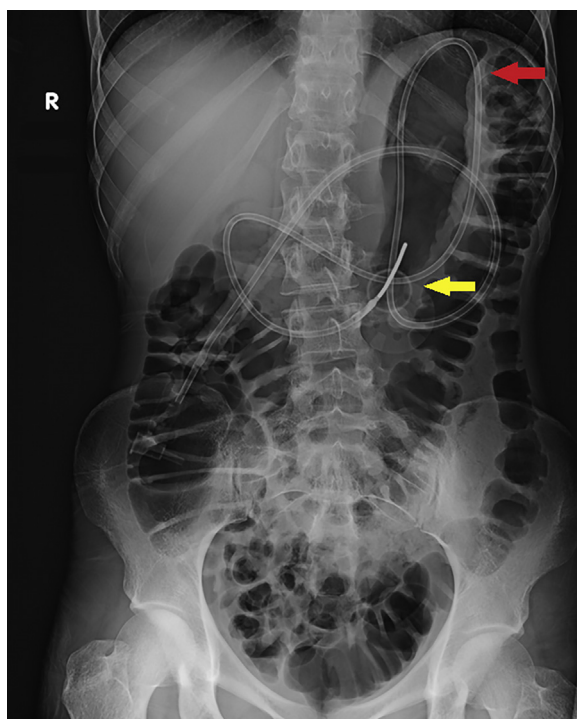


Figure 1. Radiograph showing percutaneous endoscopic gastrostomy with jejunal extension entering the skin (*yellow arrow*) and jejunal extension looping within the stomach (*red arrow*).

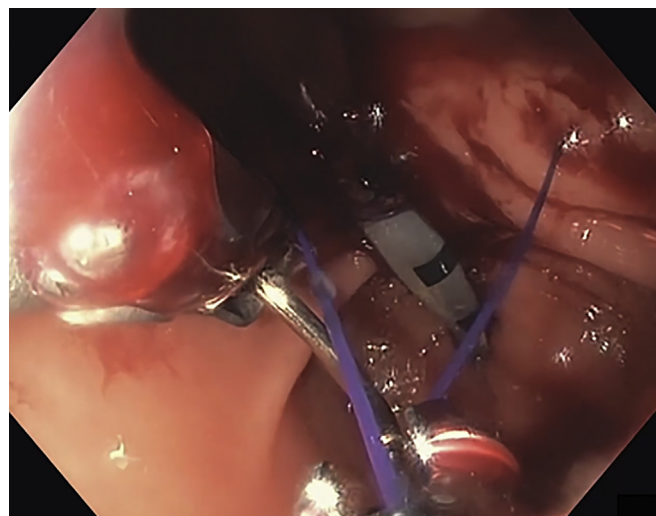


Figure 2. The jejunal extension is sutured in place using endoscopic suturing.



Figure 3. Fluoroscopic image after the procedure, showing the jejunal extension in the proper position and contrast in the jejunum.

It was apparent that the surgically placed gastrostomy tube was placed favoring a cranial position, which likely contributed to the recurrent jejunal looping. To prevent this, an endoscopic suturing device (OverStitch Apollo Endosurgery, Austin, Tex, USA) was mounted on the distal tip of the endoscope, and a total of three 2.0 polypropylene sutures were placed in a triangular running suture pattern in the antrum, incisura, and distal body of the stomach overlapping the jejunal extension, forming struts to maintain a more favorable position and angle through the pylorus and into the duodenum (Figs. 2 and 3). The patient and family were instructed to diligently care for the tube and to flush with warm tap water after every use. At last follow-up, 6 months after the procedure, the tube was still in good position on abdominal radiograph without gastric coiling. We suspect, in this case, the underlying gastroparesis may have limited the motility of the antrum, allowing the sutures to remain intact rather than becoming disrupted as is often seen in patients with normal antral motility.

The previously reported migration or dislodgement rate for percutaneous feeding tubes with a jejunal extension is

greater than 10%. This can pose a challenge for both the patient's nutrition and the clinician managing the feeding tube. Endoscopic suturing is one potential solution in cases of recurrent jejunal extension migration. In this case, our patient was unable to obtain adequate nutrition owing to recurrent proximal migration of her jejunal extension, which was finally prevented through the use of endoscopic stay sutures (Video 1, available online at www.giejournal.org).

DISCLOSURE

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Abbreviation: PEG, percutaneous endoscopic gastrostomy.

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