



## Successful endoscopic treatment of a gastrocolocutaneous fistula due to PEG tube

Dear Editor,

Percutaneous endoscopic gastrostomy (PEG) is a medium- and long-term enteral feeding method in patients with a functional gastrointestinal tract in whom nutrient intake is expected to be inadequate in quality and quantity over a period of 2–3 weeks. Although it is known to be a safe method if performed according to the technical standards, various complications related to the procedure can be seen (1,2). Here we present the case of a patient who underwent transcolonic PEG placement.

A PEG tube was placed in a 24-year-old female patient who was insufficiently fed by the oral route and who had mucopolysaccharidosis syndrome, which is an inherited disease due to lysosomal enzyme deficiency and is characterized by skeletal deformities, visual and auditory damage, and cardiorespiratory and neurological disorders (3). After 2 months, the patient began to complain of increased abdominal pain and diarrhea after feeding. Nutrition products were changed, but the complaints continued. There was no pathological condition on the physical examination of the patient. No features were found on direct radiographs. On abdominal computed tomography (CT), the PEG tube was observed to be in the epigastrium. It was

determined that the PEG tube was not found in the stomach and was placed in the transverse colon (Figure 1). Moreover, a suspected fistula tract was found between the colon and stomach. The patient was referred to us with a preliminary diagnosis of gastrocolocutaneous fistula. On gastroscopy, a fistulous opening related to the PEG tube was seen at the greater curvature of the stomach (Figure 2). On colonoscopy, the PEG tube was observed to be found in the middle part of the transverse colon. Thus, the fistulous opening was clipped with the help of a gastroscope (Figure 3). A new PEG tube was placed from another part of the stomach. The old PEG tube was taken about 15 days later and the colocolocutaneous fistula was expected to close spontaneously (Figure 4). The patient had no problem 3 months later.

Gastrocolocutaneous fistula is one of the rare complications of PEG placement. It is usually caused by the interposition of a loop of the colon between the stomach and abdomen wall. Thus, the PEG tube is transcolonicly placed into the stomach. Patients are usually asymptomatic, and the symptoms often appear months later. Diarrhea develops when feeding begins. The diagnosis can be made with contrast-enhanced radiographs. In symptomatic cases, the PEG tube can be removed and the fistula can be expected to close spontaneously (4).



Figure 1. The PEG tube in the transverse colon



Figure 2. The fistulous opening at the greater curvature of the stomach



**Figure 3.** The fistulous opening was clipped with the help of a gastroscope



**Figure 4.** The old PEG tube was taken and the colocolocutaneous fistula was expected to close spontaneously

The Nutrition Study Group of the Turkish Society of Gastroenterology has reported different techniques of PEG tube placement in the guideline for the placement of a PEG tube. We also practice the thread pull-through method in our clinic, which is emphasized to be the safest in the guideline (5).

In the thread pull-through method, the puncture site is marked with gastroscopic monitoring of the anterior gastric wall in the region of the distal corpus by means of diaphanoscopy or the needle aspiration test. After adequate local anesthesia and an appropriate initial incision, the puncture cannula is inserted under endoscopic

control into the stomach, which has been previously fully dilated with air. A suture thread or guide wire is passed through the cannula sheath into the stomach, grasped using the biopsy forceps by the endoscopist, and drawn out through the mouth together with the gastroscope. The thread loop is tightly fastened to the external end of the PEG tube, and while applying continuous traction, it is drawn down through the esophagus and stomach and out through the puncture site (5). Determining the appropriate puncture site with good transillumination and the digital press is important in preventing transcolonic placement of a PEG tube (6).

To reduce PEG-related mortality and morbidity, it is very important to not overlook contraindications and to follow the technical standards included in the guidelines.

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## REFERENCES

1. Rahnemai-Azar AA, Rahnemaiazar AA, Naghshizadian R, Kurtz A, Farkas DT. Percutaneous endoscopic gastrostomy: Indications, technique, complications and management. *World J Gastroenterol* 2014; 20: 7739-51. [CrossRef]
2. Hossein SM, Leili M, Hossein AM. Acceptability and outcomes of percutaneous endoscopic gastrostomy (PEG) tube placement and patient quality of life. *Turk J Gastroenterol* 2011; 22: 128-33. [CrossRef]
3. Hendriksz CJ, Berger KI, Lampe C, et al. Health-related quality of life in mucopolysaccharidosis: looking beyond biomedical issues. *Orphanet J Rare Dis* 2016; 11: 119-33. [CrossRef]
4. Berger SA, Zarling EJ. Colocolocutaneous fistula following migration of PEG tube. *Gastrointest Endosc* 1991; 37: 86-8. [CrossRef]
5. Percutaneous endoscopic gastrostomy Application Guide. Nutrition Study Group of the Turkish Society of Gastroenterology. Available from: URL: <http://www.tgd.org.tr/content?id=26>
6. Tominaga K, Saigusa Y, Ito S, Hirahata K, Nemoto Y, Maetani I. Percutaneous endoscopic gastrostomy with the aid of a colonoscope to avoid gastrocolic fistula formation. *Endoscopy* 2007; 39: 112-3. [CrossRef]

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