A case of late presentation of a gastrocolocutaneous fistula following percutaneous gastrostomy migration.

Western Reserve Health Education
A Steward Teaching Affiliate

Adam Swiger, D.O.; Peter DeVito, M.D.
Western Reserve Health Education, Warren, Ohio

Northeast Ohio Medical University

Introduction

Percutaneous Endoscopic Gastrostomy (PEG) is a safe and effective method for long-term enteral feeding. We present a case of a complex Gastrocolocutaneous Fistula (GCCF) causing intermittent intractable nausea and diarrhea five months after placement. Serial CT imaging by the emergency department demonstrated intermittent tube migration to and from the stomach and transverse colon coinciding with the waxing and waning of the patient's symptoms. Subsequently, the PEG tube was removed, and a surgical gastrostomy was placed with closure of the GCCF.

Case Report

An 86-year-old male with a past medical history significant for laryngeal cancer status post surgical excision and neck radiation, dementia, and GERD presented to the emergency department with an approximately two-week complaint of intermittent nausea, diarrhea, and foul-smelling drainage around his PEG tube. Patient underwent successful PEG tube placement 5 months prior and was tolerating tube feeds to date. The patient was treated with antidiarrheal medications without symptom alleviation. Documented tube length and PEG care had not changed.

The patient was hemodynamically stable, and physical examination demonstrated a soft, flat, nontender abdomen with slightly hyperactive bowel sounds, and minimal drainage surrounding the PEG tube, consistent with tube feeds. Laboratory studies were all within normal limits. A computed tomography (CT) scan of the abdomen and pelvis was ordered demonstrating no acute intra-abdominal or pelvic inflammatory process with no evidence of enteric obstruction or free air. The tip of the PEG tube was documented within the lumen of the stomach (Fig. 1). The length of the PEG was at 4 cm, unchanged from insertion. The patient was subsequently discharged.

The patient represented to the emergency department eleven days later with similar complaints of nausea, diarrhea, and drainage around the PEG tube site. Again, a preliminary diagnosis of PEG tube malfunction was made by the emergency department and another CT scan of the abdomen and pelvis was performed; Again, no inflammatory process was identified, and there was no free air or obstruction, but this CT demonstrated the PEG terminating within the lumen of the distal transverse colon with a tract between the stomach and transverse colon. This case is consistent with erosion of the PEG tube through the gastric wall into the colon (Fig. 2). There was no evidence of free intraperitoneal air, inflammation or abscesses.

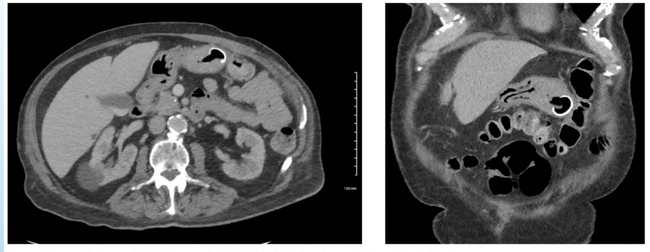


Figure 1: PEG balloon noted in the lumen of the stomach on both the axial (left) and coronal (right) views.

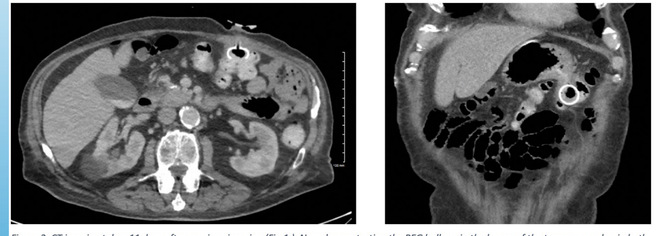


Figure 2: CT imaging taken 11 days after previous imaging (Fig 1.). Now demonstrating the PEG balloon in the lumen of the transverse colon in both the axial (left) and coronal (right) views. This suggests free and spontaneous migration of the PEG tube.

Discussion

The mechanism behind a gastrocolocutanous fistula is thought to be due to the interposed loop of colon between the anterior abdominal wall and stomach [6]. Intrabdominal adhesions from previous operations increase this risk secondary to fixation of the colon to the anterior abdominal wall, subsequently hindering the mobility of this segment of colon, even when gastric insufflation and patient positioning is performed during PEG placement [7]. The administration of tube feeds directly into the colon leads to poor absorption, decrease transit time, and ultimately intractable diarrhea, resistant to antidiarrheals. Colon contents can potentially pass through the fistula into the stomach leading to feculent emesis or diarrhea [8]. Utilizing the safe tract technique during PEG insertion can decrease the risk of inadvertent placement. Computed tomography-guided PEG tube placement or laparoscopic assistance are options when there is difficulty insufflating the stomach, or in high-risk patients with previous abdominal operations or known anatomical variations [8]. Burried bumper syndrome must be ruled out and has similar symptomatology, as documented by CT scan. Historically, treatment consisted of conservative management by removing the PEG tube and allowing the fistula to close spontaneously overtime with subsequent reseating of the PEG tube, but currently endoscopic treatments have been described. The gastric side of the fistula can be closed with hemoclips and argon plasma coagulation [9]. Kim et al. demonstrated successful closure of the gastrocolic fistula using metal clips during colonoscopy, with subsequent spontaneous closure of the colocutaneous fistula after removal of the PEG. Laparoscopy or laparotomy is typically reserved for patients with peritonitis [10].

Acknowledgment

1. Pitsinis V, Roberts P. Gastrocolic fistula as a complication of percutaneous endoscopic gastrostomy. Eur J Clin Nutr. 2003;57:876–878.
2. Kim HS, Bang CS, Kim YS, et al. Two cases of gastrocolocutaneous fistula with a long asymptomatic period after percutaneous endoscopic gastrostomy. Intest Res. 2014;12:251–255.
3. Huang SY, Levine MS, Raper SE. Gastrocolic fistula with migration of feeding tube into transverse colon as a complication of percutaneous endoscopic gastrostomy. AJR Am J Roentgenol. 2005;184:S65–S66.
4. Lenzen H, Weismuller T, Bredt M, Bahr M. Education and imaging. Gastrointestinal: PEG feeding tube migration into the colon; a late manifestation. J Gastroenterol Hepatol. 2012;27:1254.
5. Minocha A, Rupp TH, Jaggers TL, Rahal PS. Silent colo-gastrocutaneous fistula as a complication of percutaneous endoscopic gastrostomy. Am J Gastroenterol. 1994;89:2243–2244.
6. Payne KM, King TM, Eisenach JB. The technique of percutaneous endoscopic gastrostomy. A safe and cost-effective alternative to operative gastrostomy. J Crit Illn. 1991;6:611–619.
7. McClave SA, Chang WK. Complications of enteral access. Gastrointest Endosc. 2003;58:739–751.
8. Chang WK, Hsieh TY. Safety of percutaneous endoscopic gastrostomy in high-risk patients. *J Gastroenterol Hepatol*. 2013;28 Suppl 4:118-122. doi:10.1111/jgh.12300
9. Lee J, Kim J, Kim HI, et al. Gastrocolocutaneous Fistula: An Unusual Case of Gastrostomy Tube Malfunction with Diarrhea. *Clin Endosc*. 2018;51(2):196-200. doi:10.5946/ce.2017.062
10. Friedmann R, Feldman H, Sonnenblick M. Misplacement of percutaneously inserted gastrostomy tube into the colon: report of 6 cases and review of the literature. JPEN J Parenter Enteral Nutr. 2007;31:469–476.