CASE REPORT

Wandering Gastrostomy

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Abstract Percutaneous endoscopic gastrostomy (PEG) is a relatively safe and effective method of providing nutrition to patients with neurologic deficits or proximal gastrointestinal pathology. Complications that follow this common procedure include dislodgement, dysfunction, infection, gastric/colonic perforation, bleeding, peritonitis, or death. The emergency physician should be aware of the complications and symptoms/signs associated for appropriate management of these patients. We present a case of a young lady who developed a cerebral infarction following amniotic fluid embolism during her cesarean section and had undergone a PEG tube placement. She developed displacement of this PEG tube and underwent another PEG tube placement. She later presented to us with PEG tube migration into the transverse colon and required surgical removal of the same PEG tube.

Keywords Percutaneous endoscopic gastrostomy · Complications · Colocutaneous fistula · Migration of PEG tube

Introduction

Percutaneous endoscopic gastrostomy is a relatively safe and effective method of providing nutrition to patients with neurologic deficits or proximal gastrointestinal

pathology. Complications that follow this common procedure include dislodgement, dysfunction, infection, gastric/colonic perforation, bleeding, peritonitis, or death. The emergency physician should be aware of the complications and symptoms/signs associated for appropriate management of these patients. We present a case of a young lady who presented with PEG tube migration into the transverse colon and required surgical removal of the same PEG tube.

Case Report

A 35-year-old lady had developed a cerebral infarction following amniotic fluid embolism during her cesarean section 4 years ago and had undergone a PEG tube placement then. A year later, she had again undergone a second PEG tube placement, because of inability to feed through the first PEG tube. The first PEG tube had not been removed for some reason. She presented to our hospital around a month ago with purulent discharge from the initially inserted PEG tube site; she was, however, tolerating feeds through the second PEG tube. The patient was hemodynamically stable and her hemogram and blood biochemistry was essentially normal. She underwent a contrast enhanced CT scan of the abdomen that revealed migration of the bumper of the feeding tube into the transverse colon with a possible colocutaneous fistula (Fig. 1). We proceeded with a mini laparotomy, wherein the bumper of the PEG tube was found to lie within the transverse colon (Fig. 2), resulting in a colocutaneous fistula, and the stomach was not involved in the fistula. The transverse colon was opened longitudinally, the PEG tube removed, and the defect was closed transversely in two layers. The patient made an uneventful recovery.

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Fig. 1 CT abdomen showing the bumper of the PEG tube within the transverse colon, (inset) sagittal section depicting the relative positions of the two PEG tubes

Discussion

Percutaneous endoscopic-guided gastrostomy (PEG) is done routinely on patients with inability to feed by mouth and is considered a safe procedure when performed by experienced physicians with endoscopic training. As with any surgical procedure, there are a number of known complications; one of this is malposition, which happens when the gastrostomy tube or its hub is placed in an organ other than the stomach. This includes the small bowel, large bowel, peritoneal cavity, or abdominal wall. PEG malposition can occur acutely while inserting the tube or as a result of chronicity [1]. Colonic misplacement of the PEG tube may lead to serious complications, in particular the development of gastrocolic,

Fig. 2 Intraoperative photograph showing removal of the bumper from within the transverse colon

colocutaneous, or gastrocolocutaneous fistulae [2]. Its probable etiology is the penetration of a bowel loop (mostly the transverse colon) interposed between the stomach and the abdominal wall, either by inadvertent puncture during tube placement or, more commonly, due to gradual erosion of the tube into the adjacent bowel [3]. Factors predisposing to its occurrence in acute settings are insufficient gastric insufflation, past history of laparotomy causing adhesions and consecutive trapping of bowel loops, and improper transillumination. Proper transillumination with slow advancement of a small gauge anesthetic needle on an aspirating syringe filled with saline could be used to identify the intervening colon between the skin and the stomach if air bubbles appeared in the syringe prior to the endoscopic visualization of the needle in the gastric lumen [4]. The most common clinical symptoms associated with fistulae are watery diarrhea containing feed, or the presence of stool around the PEG tube. Rarely, fistulae present acutely with peritonitis, infection, fasciitis, or failure of the formula infusion [2]. A combination of endoscopy, contrast study through the PEG tube, and the CECT abdomen would help in the diagnosis of PEG malposition. CT scan with oral gastrograffin (or contrast injected in the PEG tube) is the imaging method of choice for PEG malposition. CT scan shows the position of the hub and the tube. Endoscopy of the stomach may show absence of PEG in the stomach which confirms its migration from the stomach. Gastrocolic fistula or a scar at the gastrostomy site may be seen as well. Colonoscopy verifies position of the

hub in the colon contrast study of the gastrostomy tube by injecting gastrograffin in the tube and taking plain abdominal X-ray, or doing fluoroscopy will show the position of the hub and any extravasation of the contrast into the peritoneal cavity [1]. Quite a few cases of colocutaneous fistula have been reported in the literature [5]. Several approaches have been suggested for fistula management, ranging from conservative removal of the PEG tubes without laparotomy, hereby allowing the fistula tract to close spontaneously within a few days, to invasive exploration of the colon. Kim reports on endoscopic clipping of colocutaneous fistula with good results, while Bertolini reported on colonoscopic closure of gastrocolocutaneous fistula with over-the-scope clip system. These options, though sophisticated, may be considered in the management of these patients [6, 7]. A combined laparoendoscopic approach may also be used in the management of buried bumper syndrome, as has been successfully done and reported by Ehsan et al. [8].

In our patient, we are not sure about the exact events leading to the colocutaneous fistula; we presume that the initial PEG tube might have been inserted through the colon and had subsequently migrated out of the stomach to rest in the colon. The second endoscopist would have refrained from removing the initial PEG tube likely due to the general condition of the patient. In conclusion, we reiterate that PEG tube insertion may not be considered a simple procedure and is associated with life-threatening complications. A good illumination and proper technique would facilitate safe insertion of the PEG tube, and a high index of suspicion is needed for early recognition and timely management of complications.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no competing interests.

References

1. Milanchi S, Wilson MT (2008) Malposition of percutaneous endoscopic-guided gastrostomy: guideline and management. *J Minim Access Surg* 4:1–4
2. Friedmann R, Feldman H, Sonnenblick M (2007) Misplacement of percutaneously inserted gastrostomy tube into the colon: report of 6 cases and review of the literature. *JPEN J Parenter Enteral Nutr* 31: 469–476
3. Berger SA, Zarling EJ (1991) Colocutaneous fistula following migration of PEG tube. *Gastrointest Endosc* 37:86–88
4. Foutch PG, Talbert GA, Waring JP, Sanowski RA (1988) Percutaneous endoscopic gastrostomy in patients with prior abdominal surgery: virtues of the safe tract. *Am J Gastroenterol* 83:147–50
5. Friedmann R, Feldman H, Sonnenblick M (2007) Misplacement of percutaneously inserted gastrostomy tube into the colon: report of 6 cases and review of the literature. *JPEN J Parenter Enteral Nutr* 31(6):469–476
6. Kim HS, Lee DK, Baik SK, Kwon SO (2002) Endoscopic management of colocutaneous fistula after percutaneous endoscopic gastrostomy. *Endoscopy* 34:430
7. Bertolini R, Meyenberger C, Sulz MC (2014) First report of colonoscopic closure of a gastrocolocutaneous PEG migration with over-the-scope-clip-system. *World J Gastroenterol* 20(32):11439–11442
8. Ehsan S, Dyall L, Ubhi S (2012) A novel laparoscopic approach for the surgical management of buried bumper syndrome. *Ann R Coll Surg Engl* 94(1):61–62