

Case Report

Laparoscopic Salvage of Percutaneous Endoscopic Gastrostomy Tract Dehiscence Following Blind Reinsertion: A Case Report

Tay JC^{1,2} (✉), Muthkumaran G¹, Mahendran HA², Sia WT³, Sambanthan ST²

¹Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia

²Department of Surgery, Hospital Sultanah Aminah Johor Bahru, 80100 Johor Bahru, Johor, Malaysia

³Jeffrey Cheah School of Medicine and Health Sciences, Monash University Malaysia, 47500 Petaling Jaya, Malaysia

Abstract

Percutaneous endoscopic gastrostomy (PEG) is a commonly performed and generally safe method for long-term enteral nutrition. Nevertheless, accidental dislodgement is a well-recognised complication, and premature or unguided reinsertion may result in severe morbidity. We described a 60-year-old man with a history of cerebrovascular accident who developed peritonitis following blind reinsertion of a dislodged PEG tube. Diagnostic laparoscopy revealed partial tract dehiscence and intraperitoneal contamination, necessitating laparoscopic refashioning and peritoneal lavage. His postoperative course was complicated by recurrent dislodgement and stomal stenosis, successfully managed with endoscopic reinsertion under direct visualisation. Blind reinsertion of PEG tubes carries significant risk even in apparently mature tracts. Laparoscopy provides both diagnostic confirmation and therapeutic control in cases of tract dehiscence or peritonitis. Image-guided or endoscopic techniques should be prioritised to minimise recurrence and ensure safe re-establishment of enteral access. Early recognition and image-guided management are essential to prevent peritonitis and preserve long-term enteral access. Laparoscopy remains the preferred modality for both diagnosis and salvage in complex PEG-related complications.

Keywords: Enteral nutrition; gastrocutaneous tract dehiscence; peritonitis; seldinger technique; stomal stenosis

Correspondence:

Tay Jia Chyi. Department of Surgery, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaacob Latiff, Bandar Tun Razak, 56000 Cheras, Kuala Lumpur, Malaysia. Tel: +6017 6662868 E-mail: vincent_tay92@yahoo.com

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Introduction

Percutaneous endoscopic gastrostomy (PEG) tube insertion remains the standard of care for establishing durable long-term enteral nutritional access in patients with impaired swallowing or chronic neurological conditions (1). Owing to its proven efficacy and safety, more than 200,000 PEG procedures are performed annually in the United States alone (2,3).

Despite its overall safety profile, accidental dislodgement is a relatively frequent complication, reported in up to 12.8% of cases, and is often underestimated in its clinical and economic impact (4).

While most cases are uncomplicated and managed by prompt reinsertion, blind or premature reinsertion can lead to catastrophic outcomes, including peritoneal contamination, tract disruption and peritonitis.

Such events are infrequently documented in the literature, with only isolated case reports describing PEG tract dehiscence following unguided tube replacement (5). Laparoscopic intervention offers both diagnostic clarity and therapeutic control in these scenarios, enabling safe refashioning of the gastrostomy and effective source control.

We reported a case of PEG tract dehiscence and peritonitis following blind reinsertion, which was successfully managed by laparoscopic salvage and subsequent endoscopic re-establishment of enteral access.

Case report

A 60-year-old man with a history of cerebrovascular accident (CVA) (May 2024) resulting in right hemiparesis and dysphagia, who was initiated for PEG feeding. The initial PEG was placed on 27 May 2024 following an admission for upper gastrointestinal bleeding secondary to nasogastric tube-induced gastric erosion.

Despite regular follow-up, the patient presented on 3 October 2024 after accidental dislodgement of the PEG tube. Bedside reinsertion was attempted; however, following by refeeding, he developed generalised abdominal pain, distension and clinical signs of peritonitis.

Contrast-enhanced computerised tomography (CT) of the abdomen demonstrated pneumoperitoneum and dense free intraperitoneal fluid, consistent with a malpositioned PEG tube and partial tract dehiscence (Fig. 1).

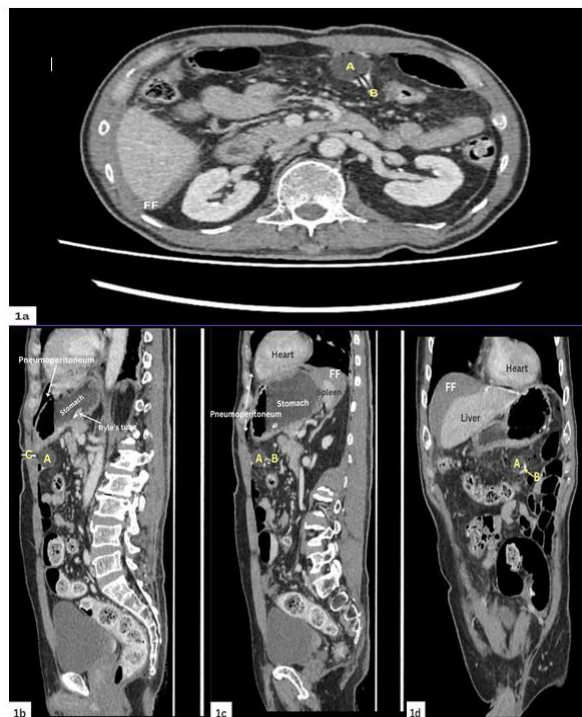


FIGURE 1: CT images showed the feeding tube dislodged from the stomach: 1a: Axial plane. 1b-c: Sagittal planes.

1d: Coronal plane. (A: catheter balloon; B: tip of the catheter; C: catheter; FF: Free Fluid).

The patient underwent emergency diagnostic laparoscopy via four ports, including a 12-mm supra-umbilical port. Upon entering the peritoneal cavity, seropurulent and curd-like exudate were encountered. The PEG site showed circumferential tract dehiscence involving approximately 270° of its perimeter (Fig. 2).

Operative management included peritoneal lavage, debridement of gastric and peritoneal edges, and primary repair of the gastrostomy with interrupted absorbable sutures. The stomach was re-anchored to the anterior abdominal wall, and the existing PEG was retained as a venting gastrostomy. A 24 Fr soft drain was positioned in the pelvis for postoperative drainage.

Postoperatively, the patient was kept nil by mouth and commenced on intravenous cefoperazone and metronidazole. Parenteral nutrition (PN) was initiated, and medications were administered through the venting gastrostomy. Enteral feeding was gradually reintroduced on postoperative day five, and by day seven, the patient tolerated bolus feeds well and was discharged home in stable condition.

Three months later, he re-presented with recurrent PEG dislodgement and stomal stenosis. Given the risk of mucocutaneous separation and tract dehiscence, PEG reinsertion was performed under endoscopic guidance using an ultra-slim scope (Olympus GIF-XP190N, Olympus Corporation, Tokyo, Japan). The Seldinger technique was employed, with a guidewire passed through the existing stoma and a new PEG placed under direct endoscopic visualisation, confirming secure intragastric positioning.

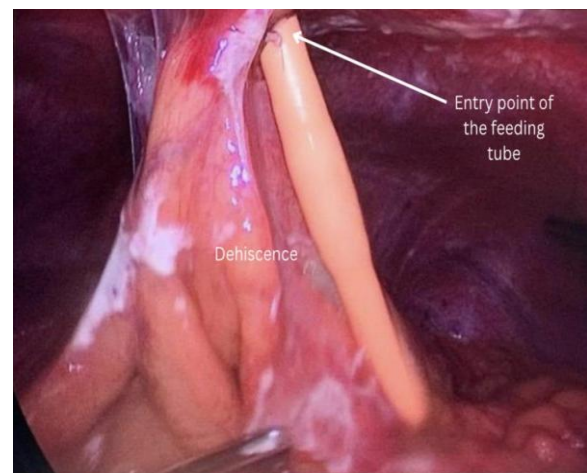


FIGURE 2: Laparoscopic view showed the dislodged feeding tube (PEG tube).

At one-month follow-up, the patient remained clinically stable, tolerating enteral nutrition without evidence of leakage, infection or overgranulation.

Discussion

PEG is a well-established method for providing long-term enteral nutrition in patients with dysphagia, particularly those with neurological impairment such as CVA. Although it is generally safe, complications such as tube dislodgement remain relatively common, with reported incidences between 4% and 12.8% (4). Predisposing factors include patient agitation, traction on the external tubing, coagulopathy, immunosuppression and improper fixation techniques (6,7).

A structured, stepwise approach is crucial when managing gastrostomy dehiscence, as outcomes depend on tract maturity, degree of contamination and patient stability (8). Key determinants include: (i) the interval from initial placement, which reflects tract maturity; (ii) the presence of peritoneal contamination or sepsis; (iii) physiological reserve; and (iv) the extent of fascial or gastric wall disruption.

Minor or partial dehiscence without peritonitis may be managed conservatively through cessation of feeding, gastric decompression, intravenous antibiotics and close monitoring. In contrast, complete tract disruption, intraperitoneal leakage or clinical peritonitis warrants prompt surgical intervention. Operative management allows definitive source control, lavage and secure re-establishment of access under direct vision.

The timing of dislodgement remains the most important predictor of outcome. Early dislodgement (<4 weeks), before tract maturation, carries a high risk of intragastric misplacement and peritoneal contamination if the tube is blindly reinserted (9,10). In such cases, blind reinsertion should be avoided, and operative or endoscopic confirmation of intragastric position is mandatory. Conversely, late dislodgement in a mature tract without evidence of sepsis or leakage can often be managed with endoscopic replacement or conservative observation.

In the present case, although the PEG tract had matured, blind reinsertion after acute dislodgement led to partial tract disruption and peritonitis. The intraoperative finding of a partially dehiscent tract despite apparent external tube position emphasises that external appearance alone does not guarantee correct intragastric placement. This highlights the need for

clinical suspicion and radiological or endoscopic confirmation before refeeding.

Laparoscopy played a pivotal role in this case by providing both diagnostic and therapeutic capability, allowing visualisation of contamination, peritoneal lavage and primary repair. Compared to open surgery, laparoscopy offers superior visualisation, minimal invasiveness and faster recovery, making it the preferred approach in stable patients with tract disruption or peritonitis.

Hybrid PEG techniques, which integrate laparoscopic and endoscopic guidance, have emerged as valuable options, especially in patients with altered anatomy, adhesions or previous abdominal surgery (3,14). These methods allow real-time visualisation and safe tube placement under direct control, potentially reducing the risk of intraperitoneal leakage and recurrent dehiscence. The choice between hybrid and laparoscopic approaches should be individualised based on clinical presentation, contamination severity and operator expertise.

In this case, retaining the PEG tube as a venting gastrostomy effectively decompressed the stomach and protected the repair during healing. Nutritional optimisation through PN and infection control facilitated postoperative recovery. Although not required here, temporary nasojejunal feeding can serve as an adjunct in cases of extensive tract compromise to offload gastric pressure while maintaining enteral nutrition (11-13).

On follow-up, stomal stenosis developed, likely secondary to local ischemia or inflammatory fibrosis. Endoscopic-guided reinsertion using the Seldinger technique ensured safe re-establishment of enteral access and avoided further complications (14,15).

This case underscores several key lessons: (i) blind reinsertion of PEG tubes should be avoided; (ii) laparoscopy offers both diagnostic and therapeutic benefit in managing dehiscence and peritonitis; and (iii) a structured, image-guided approach ensures durable restoration of enteral access and prevents recurrence.

Conclusion

This case highlights the critical importance of early recognition and decisive management of PEG-related complications, particularly those arising after accidental dislodgement or blind reinsertion. Laparoscopic intervention provides both diagnostic clarity and definitive treatment, ensuring effective

source control and minimising morbidity in stable patients. Long-term enteral access can be successfully re-established despite initial complications, provided that management is guided by tract maturity, clinical stability and the use of image-guided or endoscopic techniques rather than blind reinsertion. These principles collectively enhance safety and optimise outcomes in PEG-dependent patients.

Conflict of interest: The authors declare no conflict of interest.

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