Royal Australasian College of Surgeons

ANZASM Case of the Month
September 2025 Edition

(case selected by the ANZASM Committee for your information)

Percutaneous endoscopic gastrostomy complication leading to peritonitis

General Surgery under ENT

Case summary

A patient aged late-60s was admitted for an elective excision of the mouth floor, mandibulectomy, neck dissection and tracheostomy. Significant medical history included cirrhosis (Child–Pugh class B), atrial fibrillation (AF), epilepsy, alcoholism, smoking and colorectal cancer, for which chemotherapy treatment had concluded 3 months prior.

One month post-surgery, the patient faced continued poor oral intake, leading to a consultation with the upper gastrointestinal (UGI) team for a percutaneous endoscopic gastrostomy (PEG) feeding tube. The UGI team initially deemed a PEG unsafe due to the patient's prior abdominal surgery and a ventral hernia. The team suggested an open feeding gastrostomy as a safer alternative. However, due to ongoing issues with the nasogastric tube—including neck pain, aspiration and oropharyngeal oedema—the ear, nose and throat (ENT) team reconsulted UGI, specifically requesting reconsideration of a PEG. UGI suggested consulting the gastroenterology team.

The gastroenterology team performed a simple gastroscopy and, noting good transillumination through the abdominal wall, determined a PEG insertion would be safe. The PEG tube was subsequently inserted a week later.

On day 1 post-PEG insertion the patient developed severe abdominal pain, prompting a computed tomography (CT) scan, which revealed a haemoperitoneum. On day 2, the Fellow reviewing the patient noted tachycardia and fever, so suggested a laparotomy. The patient initially declined an operation but later that evening became agreeable to surgery. It was decided to monitor the patient overnight due to a lack of major haemodynamic changes.

The patient remained clinically unwell over the next few days, exhibiting ongoing abdominal pain, persistently elevated C-reactive protein (250 mg/L), mild tachycardia (100–110 bpm) and occasional fever. Different acute surgical unit (ASU) consultants reviewed the patient daily, but a definitive intervention was not pursued.

On day 5 post-PEG insertion, a repeat CT abdomen showed pneumoperitoneum, although no contrast extravasation. A decision was made to commence PEG flushes but not feeds. The UGI Fellow noted 'likely micro-perforation/leak and large volume haemoperitoneum.' The plan was to continue flushes and gradually introduce feeds. Later that day, the patient experienced fever and tachycardia and a code blue was called, leading to transfer to the intensive care unit (ICU).

By day 6, the patient was experiencing AF with a rapid rate and required noradrenaline. The ENT team observed a 'grossly distended' abdomen, reportedly 'less tender than yesterday'. On day 7, the night ASU team reviewed the patient for increasing abdominal distension and escalating noradrenaline requirements, suggesting an urgent laparotomy. The patient arrived in the operating theatre 2 hours later, with systolic blood pressure plummeting to 65 mm Hg, requiring high-dose noradrenaline and vasopressin. On transfer to the operating table the patient lost consciousness. Cardiopulmonary resuscitation was initiated.

Following return of circulation, a laparotomy was performed, during which 5 L of haemoperitoneum mixed with gastric content was evacuated. The stomach wall around the PEG tube was found to be very loose, leading to easy dislodgement. The PEG tube was removed, the abdomen washed out, and a new tube placed through the same gastrostomy with the stomach wall tightened around it.

Despite the intervention, day 1 post-laparotomy saw the patient in multiorgan failure, including anuria, dialysis dependence, vasopressor-resistant vasoplegia, ischaemic hepatitis and thrombocytopaenia. A week later, with no improvement, the decision was made to palliate and the patient died shortly afterwards.

Discussion

The failure to recognise deterioration in this patient led to a delay in definitive management. Plans for postoperative feeding could have been anticipated preoperatively by ENT, prompting discussions with UGI before the index operation. There was a lack of recognition of the risk of malnutrition prior to major head and neck surgery.

It is unclear when the need for gastrostomy became more pressing and why the general surgical team did not proceed to open gastrostomy. Instead, there was a decision to allow the gastroenterology team to do the PEG insertion, which had already been decided to be too risky. There was a delay in the recognition of evolving peritonitis in a critically unwell patient who continued to deteriorate. The patient had persistent tachycardia and intermittent fever, but inconsistent findings on abdominal examination. A septic screen was performed rather than proceeding to surgery.

Care was clouded by the patient's initial refusal to have more surgery (the necessary laparotomy). This was required much earlier. Perhaps there were unforeseen delays in taking the patient to theatre once the decision to operate had been made, possibly due to rotating ASU and ICU teams. The importance of thorough handovers and maintaining continuity of care is emphasised.

Care was also somewhat fragmented by varying surgical and medical teams having input. There was no clear decision-maker once the patient had the PEG tube inserted and the complication was recognised, requiring the later laparotomy.

Areas of good practice included the well-performed primary operation by ENT and Plastic and Reconstructive Surgery. The dietetic, speech pathology and physiotherapy treatments were well documented and planned, and ICU support was satisfactory.

Clinical lessons

Surgical causes of sepsis should be considered following a procedure. This patient continued to decline, and appreciation of their deteriorating status went unrecognised.

This case highlights the need for improved communication and decision-making. Having a clear hierarchy of responsibility helps to prevent lack of continuity in general surgical assessment when problems are developing.

The need for PEG tube feeding should have been anticipated in a patient with a chequered surgical history having complicated oral surgery and reconstruction.