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Reminder of important clinical lesson

The 'cut and push' technique: is it really safe?

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Summary

Percutaneous endoscopic gastrostomy (PEG) feeding is routinely used as an *endoscopic* and effective method for providing enteral nutrition in those whose oral access has been diminished or lost. One technique for removal of the PEG is cutting the tube at the skin level and allowing the tube and internal flange to pass spontaneously. This is known as the 'cut and push' method. Several studies have concluded that the 'cut and push' method is a safe and cost-effective method. This case demonstrates a rare cause of small bowel obstruction following the 'cut and push' method for PEG replacement, with only a few other cases been reported. This method of removal should be avoided in patients with previous abdominal surgery. It is important that the PEG flange is retrieved endoscopically or an alternative PEG tube (designed to be completely removed through the skin) is used to prevent this complication occurring in such individuals.

BACKGROUND

Percutaneous endoscopic gastrostomy (PEG) feeding is routinely used as an *endoscopic* and effective method for providing enteral nutrition in those whose oral access has been diminished or lost since its introduction in 1980.[1] However, the use of PEG tubes for long-term nutrition inevitably requires the replacement of blocked or damaged tubes. One technique for removal involves cutting the PEG tube at the skin level and allowing the tube and internal flange to pass spontaneously. This is known as the 'cut and push' method.[2]

We report a case of small bowel obstruction in a young gentleman following the 'cut and push' method to replace a PEG tube. This report raises further awareness of the risk of small obstruction in patients with a history of abdominal surgery following this method and should therefore be avoided.

CASE PRESENTATION

A 36-year-old gentleman presented with vomiting, abdominal distension and pain. His medical history included severe learning difficulties, cerebral palsy and epilepsy following pneumococcal meningitis as a neonate. PEG tubes were used for long-term enteral feeding due to severe dysphagia since 1994. The patient required a previous open Nissens' fundoplication in 1997 for gastro-oesophageal reflux disease. Further open abdominal surgery was required in 2006 for buried bumper syndrome, when the internal bumper was removed and a further 15 Fr Freka (Fresenius Kabi Ltd, Cheshire, UK) flange tube inserted.

During this current presentation, the tube was unfortunately damaged in the community and it was elected to perform the 'cut and push' method and replace the PEG tube. The patient presented acutely 6 days later with a distended abdomen and central abdominal tenderness on examination. The patient subsequently developed aspiration pneumonia on admission and was transferred to the intensive care unit (ICU) for respiratory support.

INVESTIGATIONS

An abdominal x-ray showed a prominent central loop of small bowel. A CT scan was therefore performed (figures 1–3). These images showed dilated proximal small bowel loops and collapsed normal calibre bowel distal to the intraluminal PEG flange, demonstrating a transition point in the small bowel.

TREATMENT

After optimisation on ICU, the patient required a laparotomy. At operation, the PEG flange was impacted in the mid small bowel, which was caught up in adhesions. The flange was retrieved via an enterotomy.

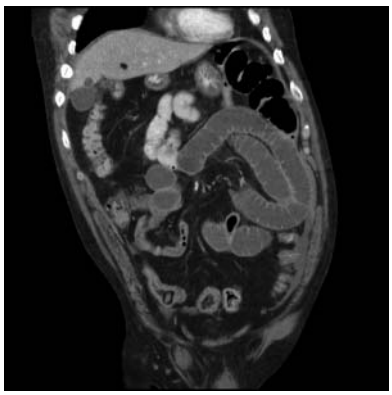

Figure 1 Postintravenous contrast coronal abdominal CT image. The CT image demonstrates dilated proximal small bowel loops and collapsed distal small bowel.

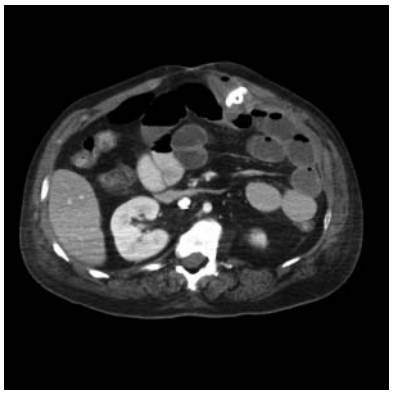

Figure 2 Postintravenous contrast axial abdominal CT image. This demonstrates the transition point in the small bowel caused by the percutaneous endoscopic gastrostomy flange.

OUTCOME AND FOLLOW-UP

Despite maximal therapy, the patient sadly died 5 days later. The cause of death was aspiration pneumonia.

DISCUSSION

This case demonstrates a rare cause of small bowel obstruction following the 'cut and push' method for PEG replacement. Several studies have concluded that the 'cut and push' method is a safe and cost–effective method, avoiding the potential for a gastroscopy.[2–4] This is attributed in part to the modern PEG tube designs, which have a softer and more malleable inner flange, minimising the risk of small bowel obstruction or perforation.[3] However, other cases have reported intestinal obstruction after previous abdominal surgery.[5 6] There are also reported cases of small bowel perforations secondary to the retained flange in patients with a history of abdominal surgery.[7] Barium studies cannot be used to accurately predict those patients with a history of abdominal surgery that will encounter difficulties passing the PEG remnant.[7] This method should therefore be avoided in patients with previous abdominal surgery. It is important that the PEG flange is retrieved endoscopically or an alternative PEG tube (designed to be completely removed through the skin) is used to prevent these complications occurring in such individuals.

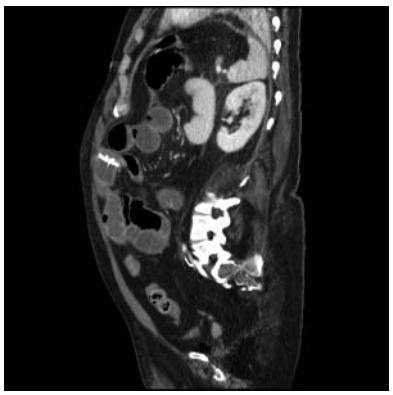

Figure 3 Postintravenous contrast sagittal abdominal CT image. This demonstrates the transition point in the small bowel caused by the percutaneous endoscopic gastrostomy flange.

Learning points

- To highlight the need for careful patient selection if performing the 'cut and push' method.
- Barium studies cannot accurately predict patients that will encounter difficulties passing the percutaneous endoscopic gastrostomy (PEG) remnant.
- The 'cut and push' method should be avoided in patients with previous abdominal surgery.
- The PEG flange should be retrieved endoscopically or an alternative PEG tube used in patients with previous abdominal surgery.

Competing interests None.

Patient consent Obtained.

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