

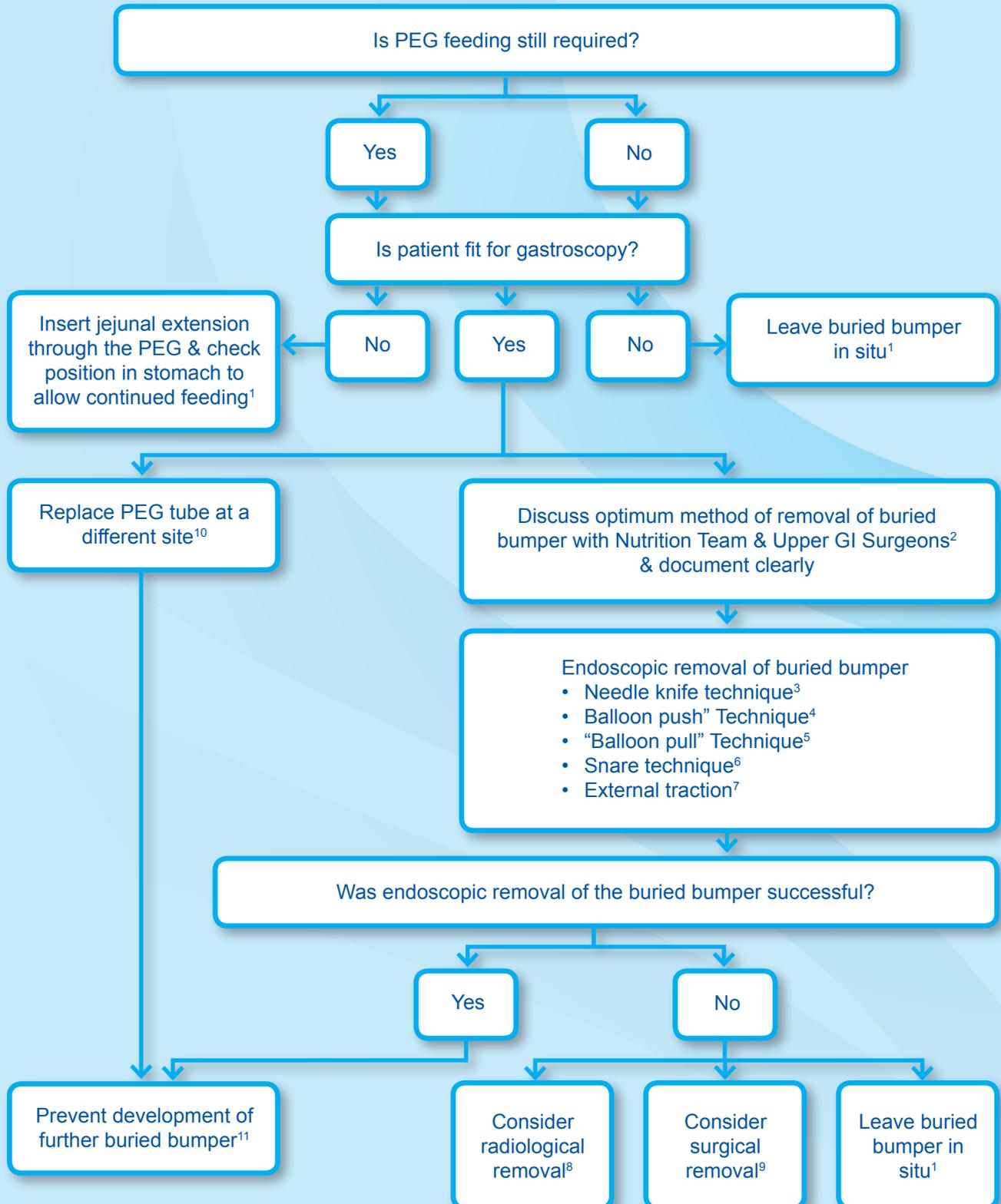
Percutaneous Endoscopic Gastrostomy Management of Buried Bumper Syndrome – Decision Tree



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Percutaneous Endoscopic Gastrostomy Management of Buried Bumper Syndrome – Key Points

1. Leaving the bumper in situ

- In a small series of 7 patients with buried bumper syndrome and significant comorbidities, leaving the buried bumper in situ and feeding via a new PEG tube at a different site, or jejunal extension through the old PEG tube was not associated with any complications from the buried bumper over a median follow up of 18 months (range 1-46 months)¹.
- It may be necessary to open up the overgrown mucosa with a dilatation balloon to be able to pass the jejunal extension into the stomach².

2. Endoscopic removal of buried bumper

- The case should be discussed in light of any available imaging to ensure optimal management.
- If imaging shows part of the bumper outside of the gastric wall, then a surgical approach may be preferable³.
- Complications of endoscopic removal of a buried bumper include sepsis, which can be serious, and perforation.

3. Needle knife removal

- Either a needle knife or the tip of a snare is used to incise the mucosa radially down to the central dome of the bumper (the inner bumper of the PEG tube protecting the muscular layers of the gastric wall)^{4,5}.
- Other authors have used argon plasma coagulation to destroy the tissue overlying the buried bumper⁶.
- These methods are usually used in conjunction with one of the other techniques described below. An algorithm for deciding the most appropriate method of treatment has been described⁴.

4. Balloon push technique²

- An oesophageal balloon is passed through the PEG tube from the outside, until it can be seen emerging into the stomach by the endoscopist. The balloon is partly inflated whilst still in the PEG tube, dilating the passage through the overgrown mucosa and stiffening the PEG tube so that it can be pushed back into the stomach.

5. Balloon pull technique³

- Under endoscopic control an oesophageal balloon is passed into the PEG tube from the gastric side via the endoscope and then inflated partially within the PEG tube so that traction can be applied to pull the PEG tube back into the stomach.

6. Snare technique

- **Push-pull T technique**
The PEG tube is cut leaving about 3 cm above the abdominal wall. A short piece (about 2cm long) of the PEG tube is retained. Forceps are passed through the PEG tube from the outside and used to grab an endoscopically placed snare, bringing this through the cut PEG tube to the outside. The snare is then placed around the retained cut piece of the PEG tube to form a T against the cut end of the tube. A standard Kelly clamp is placed across the T shaped tube. The snare is then pulled back into the stomach by the endoscopist whilst a second person pushes the clamp and PEG tube gently towards the gastric cavity. Once the bumper is in the gastric lumen, the PEG tube can then be removed through the mouth with the snare as usual⁷⁻⁹.
- **Pull technique**
The PEG tube is cut leaving about 5 cm above the abdominal wall. A pair of grasping forceps is passed through the PEG tube into the gastric lumen and used to grasp a snare that has been passed via the endoscope. The snare is brought out through the PEG tube. The tube is split using scissors as deeply as possible into the PEG site and the closed snare is led out through the split tube as and then closed around the tube as close to the bumper as possible. Gentle traction on the snare will pull the bumper back into the gastric lumen so that it can be removed through the mouth as usual¹⁰.

7. External traction as a method of removing the buried bumper has also been described, but may be traumatic resulting in tissue disruption. It may however be appropriate if the PEG tube in situ has a collapsible internal bolster (traction-removable)^{9,11,12}.

8. Radiological Removal of a Buried Bumper

A radiological version of the balloon push method has been described, but has not been widely used¹³.

9. Surgical Removal of a Buried Bumper

Surgical removal of a buried bumper may be required in a minority of cases². Laparoscopic methods have been described¹⁴⁻¹⁶.

10. Replacement of the PEG tube

It is possible to replace the PEG tube with another tube at the same site. However, if there is evidence of an abdominal wall abscess, it may be necessary to treat with antibiotics and replace the PEG tube at another site once the original site has healed. The decision about the timing of a replacement tube and the use of a different site will depend both on the condition of the original site and the overall condition of the patient^{9,17,18}.

11. Prevention of Buried Bumper^{2,19}

- Check the position of the external fixator regularly to ensure it is not too tight and adjust as necessary
- Maintain at all times a 1cm degree of 'play' between the external fixator and the skin site
- Rotate and push in the PEG tube gently once a week (unless a jejunal extension is fitted)

Percutaneous Endoscopic Gastrostomy Management of Buried Bumper Syndrome – References

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Further Reading

- BSG Guideline "The provision of a percutaneously placed enteral feeding service". <http://www.bsg.org.uk/clinical-guidelines/small-bowel-nutrition/the-provision-of-a-percutaneously-placed-enteral-tube-feeding-service.html>