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SUMMARY

Premature removal of either a gastrostomy or jejunostomy tube can lead to significant, potentially life-threatening complications if not promptly recognized and appropriately treated. Replacement should be determined by how long the tube has been in place. Following reinsertion of such a tube, a radiologic contrast study should be performed to confirm appropriate positioning before enteral nutrition is resumed. If there are concerns regarding appropriate intraluminal positioning of the tube, further evaluation should be performed.

RECOMMENDATIONS

- **Level 1**
 - **None**

- **Level 2**
 - **Gastrostomy / jejunostomy tubes that have been in place for fewer than 2 weeks should be endoscopically, radiographically, or surgically replaced.**
 - **Gastrostomy / jejunostomy tubes that have been in place for more than 4 weeks may be replaced through the existing tract.**
 - **Gastrostomy / jejunostomy tubes that have been in place between 2 and 4 weeks should be replaced with caution based upon the patient's clinical presentation and condition.**

- **Level 3**
 - **Following tube replacement, a water-soluble (i.e., Gastrograffin) radiologic contrast study should be considered to ensure appropriate positioning of the tube before it is used clinically.**
 - **Appropriate measures (external suture, hand mitts, limb restraints, and/or abdominal binders) should be instituted to decrease the risk of recurrent tube removal.**

INTRODUCTION

With recognition of the physiologic and immunologic benefits of enteral nutrition, gastrostomy and jejunostomy tubes are commonly utilized to facilitate nutritional support (1,2). These tubes are frequently inserted endoscopically due to the ease, decreased cost, and decreased morbidity and mortality associated with this method of placement. Premature removal of these tubes by either the patient or healthcare staff occurs in 2-4% of patients and can lead to significant complications if not promptly recognized and appropriately treated (2-7).

Endoscopically placed gastrostomy/jejunostomy tube insertion tracts generally mature within 2 weeks with attachment of the visceral wall to the parietal peritoneum. Tract maturation may take longer in patients on corticosteroids, those who are malnourished, the critically ill, and patients with ascites (6). In such patients, premature tube dislodgement can result in separation of the viscera from the abdominal wall placing the patient at risk for malposition, peritonitis, and intraperitoneal feedings if the tube is blindly reinserted into the abdominal cavity rather than the stomach or small intestine (7). Further, the stoma through which these tubes enter the skin begins to contract within hours of tube removal, rapidly decreasing the chances of successful tube reinsertion if not recognized in a timely fashion.

LEVEL OF RECOMMENDATION DEFINITIONS

- **Level 1:** Supported by multiple, prospective randomized clinical trials or strong prospective, non-randomized evidence if randomized testing is inappropriate.
- **Level 2:** Supported by prospective data or a preponderance of strong retrospective evidence.
- **Level 3:** Supported by retrospective data or expert opinion.

DISCLAIMER: These guidelines were prepared by the Department of Surgical Education, Orlando Regional Medical Center. They are intended as a general statement regarding appropriate patient care practices based on the medical literature and clinical expertise at the time of development. They should not be considered protocol or policy nor are intended to replace clinical judgment or dictate care of individual patients.

Gastrostomy or jejunostomy replacement may be performed by one of four techniques: 1) bedside replacement percutaneously through the existing fistula tract, 2) fluoroscopic replacement by an interventional radiologist, 3) endoscopic replacement, or 4) operative replacement (open laparotomy or laparoscopy). Bedside replacement is the easiest and most cost-effective method, especially for tubes that have been in place for four weeks or more. Tubes that have been in place for less than 2 weeks should not be replaced through the existing tract due to the risk for tube malposition as a result of inadequate tract maturation. Such tubes should be replaced using one of the other three methods based upon the patient's clinical presentation and condition. Tubes that have been in place for greater than 4 weeks can generally be replaced through the existing tract. Tubes that have been in place between 2 and 4 weeks should be replaced with caution based upon the patient's risk factors for tract maturation. If there is any question of appropriate intraluminal positioning of the replaced tube, a water-soluble contrast study to confirm appropriate positioning should be performed (3-8).

To decrease the risk of subsequent premature gastrostomy / jejunostomy tube removal, care should be taken at the time of insertion to avoid placing excessive tension on the tube's intraluminal balloon or mushroom as this may contribute to mucosal necrosis and erosion of the tube into the subcutaneous tissues (known as "buried bumper syndrome"). In a typical patient, a percutaneous gastrostomy tube should reside at approximately 3 to 4 cm in relation to the skin (based upon the markings on the tube). Obese patients with thicker abdominal walls may require 5 to 6 cm while the tube in cachectic patients may be properly seated at 2 cm. Care should also be taken in the head injured or agitated patient to ensure that they are not given the opportunity to inadvertently pull on the tube. External sutures, hand mitts, limb restraints, and/or abdominal binders should all be implemented as clinically indicated to prevent premature dislodgement.

LITERATURE REVIEW

There are no prospective, randomized, controlled trials on this subject. Multiple case reports exist in the literature detailing the morbidity and mortality associated with premature gastrostomy tube removal and incorrect replacement.

REFERENCES

1. Faries MB, Rombeau JL. Use of gastrostomy and combined gastrojejunostomy tubes for enteral feeding. *World J Surg* 1999; 23:603-607.
2. Larson DE, Burton DD, Schrieder KW, et al. Percutaneous endoscopic gastrostomy: Indications, success, complications, and mortality in 314 consecutive patients. *Gastroenterology* 1987; 93:48-52.
3. Galat SA, Gerig KD, Porter JA, et al. Management of premature removal of the percutaneous gastrostomy. *Am Surg* 1990; 56:733-736.
4. Marshall JB, Bodnarchuk G, Barthel JS. Early accidental dislodgement of PEG tubes. *J Clin Gastroenterol* 1994; 18:210-212.
5. Pofahl WE, Ringold F. Management of early dislodgement of percutaneous endoscopic gastrostomy tubes. *Surgical Laparoscopy, Endoscopy & Percutaneous Techniques* 1999; 9:253-256.
6. Tae CH, Lee JY, Joo MK, Park CH, Gong EJ, et al. Clinical Practice Guideline for Percutaneous Endoscopic Gastrostomy. *Gut Liver* 2024; 18(1):10-26.
7. Shahbani DK, Goldberg R. Peritonitis after gastrostomy tube replacement in the emergency department. *J Emerg Med* 2000; 18:45-46.
8. Vade MA, Jafri SZ, Vidyasagar MS, et al. Radiologic evaluation of gastrostomy complications. *AJR* 1983; 141:325-330.