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Percutaneous Endoscopic Gastrostomy as a Standard Procedure in Head and Neck Surgery

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• Adequate nutritional support is essential in patients with head and neck cancer, especially if extended oropharyngeal surgery is indicated. Enteral nutrition is an effective and safe alternative to parenteral nutrition, but the use of nasogastric tubes has several disadvantages in these patients. We describe our experience with percutaneous endoscopic gastrostomy as a standard procedure prior to surgical resection in patients with head and neck cancer.

(*Arch Otolaryngol Head Neck Surg.* 1990;116:730-731)

Patients with malignant neoplasms of the oral cavity and oropharynx present special nutritional problems because they often have a history of excessive smoking, dietary indiscretions, and alcohol abuse. Malnutrition may be compounded by the anatomic location of the cancer resulting in obstruction or pain on deglutition. Adequate nutritional repletion is of utmost importance in these patients before and after surgery. Enteral nutrition via feeding tubes is a very

effective, inexpensive, and safe alternative to total parenteral nutrition. Nasogastric tubes, however, are unsatisfactory because they often cause nasopharyngeal ulcerations and gastroesophageal reflux, complications that should be avoided, especially in patients recovering from extended and reconstructive oropharyngeal surgery.¹

We describe our experience with percutaneous endoscopic gastrostomy (PEG) as a standard procedure prior to surgical resection of oropharyngeal cancer. Percutaneous endoscopic gastrostomy is a well-accepted procedure that allows enteral nutritional support in patients who are unable to swallow after cerebral trauma or extended head and neck cancer.² In the second group of patients, this procedure is occasionally used during radiotherapy or to relieve patients with poor chances of survival.^{3,4} Our extensive experience with a low complication rate of PEG in patients with neurologic disorders convinced us to use PEG as a standard procedure in patients with oropharyngeal malignancy prior to resection of their cancer.⁵

PATIENTS AND METHODS

Between 1986 and 1988 we performed PEG in 100 patients for various reasons (Table). In patients with severe neurologic

impairment, multiple trauma, or respiratory failure, a tracheostomy was usually performed in combination. In 10 consecutive patients selected for extensive oropharyngeal cancer surgery, PEG was performed under general anesthesia as the first step of the surgical procedure.

Seven patients had carcinoma of the tongue with regional extension and three patients had carcinoma of the floor of the mouth. Various techniques of PEG have been described.³ We initially used the introducer technique, fixing the stomach to the abdominal wall only by a Foley catheter. Because intra-abdominal leakage occurred in two patients because of a deflated balloon, we decided to add another gastrostomy: after introduction of the gastroscope, the appropriate side for gastrostomy was indicated by diaphanoscopy. Under endoscopic control, the stomach first was fixed to the abdominal wall by Dennison strings (Figs 1 and 2).⁶ Three of these strings were placed in a triangle shape and fixed with a fisherman's lead (Fig 2, C). In the center of this triangle a guide wire was

Indications for Gastrostomy	
	No. of Patients
Neurologic impairment	30
Multiple trauma	26
Gastrointestinal surgery	14
Gastrointestinal obstruction	12
Head and neck surgery	10
Respiratory failure	8
Total	100

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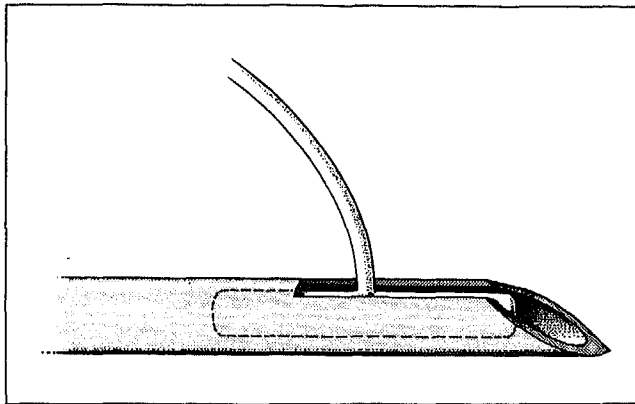


Fig 1.—Close-up view of needle with Dennison string.

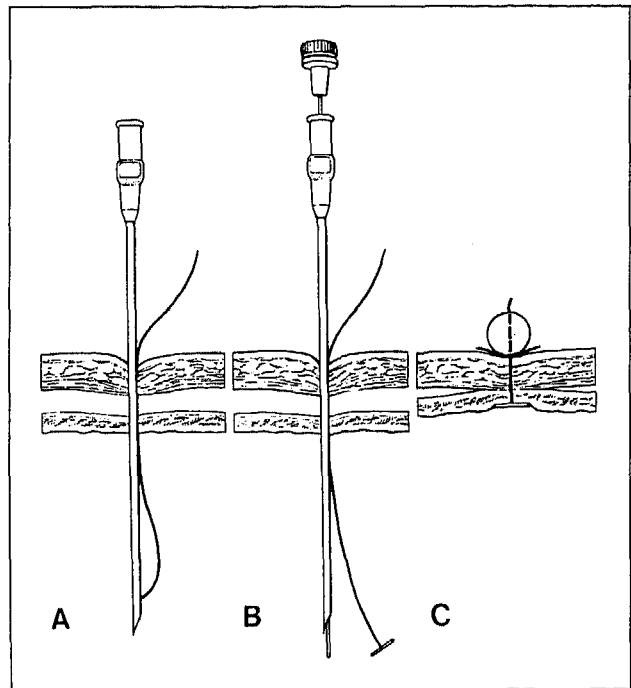


Fig 2.—Fixation technique.

introduced through a needle. Using this guide wire, a trocar with a peel-away sheath was inserted and the trocar removed after the plastic sheath had entered the gastric lumen. Through this sheath, a 14F silicon Foley catheter was inserted. When the balloon was filled with water, the sheath was removed and the catheter fixed to the abdominal wall under slight traction. This procedure usually took no more than 15 minutes. After gastrostomy, surgical treatment of the oropharyngeal cancer was performed.

Enteral feeding was started the first day after surgery.

RESULTS

In the first 23 patients, gastrostomy was performed without additional fixation by Dennison strings. Two of these patients had intraperitoneal leakage because of a deflated catheter balloon. Laparotomy was necessary in both patients. In all 10 patients with head and neck cancer, the described technique combining gastrostomy with gastropexy using Dennison strings was applied. The T-fasteners were simply cut about 6 weeks after gastropexy and the tube was removed at the same time if normal food intake

was possible. In 4 patients the PEG tube feeding was continued for some weeks during postoperative radiotherapy. In 1 patient with a large cancer of the floor of the mouth there were long-lasting postoperative complications due to partial necrosis of the myocutaneous pectoralis major flap. This woman was discharged from the hospital 4 weeks after surgery; she managed PEG tube feeding herself at home for 8 more weeks.

COMMENT

Feeding by the enteral route provides a safe, simple, and economical alternative to total parenteral nutrition. Nasogastric feeding, however, has general disadvantages in patients after extended oropharyngeal surgery: the tube may cause intolerable discomfort with wound healing disturbances, reflux esophagitis, and local mucositis. The ease of placement and lack of complications have made PEG with gastropexy a useful alternative. Our experience with this procedure in a group of 100 patients confirms data from the literature.^{2,3,5,7}

We recently started to use this technique as a standard procedure in patients with head and neck cancer scheduled for surgery with or without postoperative radiotherapy.

References

1. Gardine RL, Kokal WA, Beatty JD, Riimaki DU, Wagman LD, Terz JJ. Predicting the need for prolonged enteral supplementation in the patient with head and neck cancer. *Am J Surg.* 1988;156:63-65.
2. Ponsky JL, Gauderer MWL. Percutaneous endoscopic gastrostomy: indications, limitations, techniques, and results. *World J Surg.* 1989;13:165-170.
3. Ruppin H, Lux G. Percutaneous endoscopic gastrostomy in patients with head and neck cancer. *Endoscopy.* 1986;18:149-152.
4. Pezner RD, Archambeau JO, Lipsett JA, Kokal WA, Thayer W, Hill LR. Tube feeding enteral nutritional support in patients receiving radiation therapy for advanced head and neck cancer. *Int J Radiat Oncol Biol Phys.* 1987;13:935-939.
5. van der Werken C, van Vroonhoven TJMV, Juttman JR, Stuifbergen WNHM. Gastropexie in Kombination mit percutaner endoskopischer Gastrostomie. *Chirurgie.* 1987;58:118-119.
6. Brown AS, Mueller PR, Ferrucci JT. Controlled percutaneous gastrostomy: nylon T-fastener for fixation of the anterior gastric wall. *Radiology.* 1986;158:543-545.
7. Ponsky JL, Gauderer MWL, Stellato TA. Percutaneous endoscopic gastrostomy. *Arch Surg.* 1983;118:913-914.