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The feeding pharyngostomy: an alternative approach to enteral feeding

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Abstract
We present a six-year retrospective review of feeding pharyngostomies as performed in this department. The indications, technique and complications of this procedure are discussed.

Introduction

Long-term enteral tube feeding usually involves the use of either a nasogastric tube or a gastrostomy. Both have disadvantages. A nasogastric tube is unsightly and uncomfortable, to the extent that after the third day it forms 'a very severe test of friendship between the surgeon and the patient' (Quigley, 1974). The insertion of a gastrostomy tube generally involves a laparotomy in a patient who is already likely to be in a poor nutritional state, though recently a technique of percutaneous puncture of the stomach under gastroscopy guidance has been described (Gauderer *et al.*, 1980).

Another alternative is the insertion of a feeding tube directly into the pyriform fossa through a small skin incision in the neck (Fig. 1). This technique of pharyngostomy has been commonly used in this department for several years. It has several potential advantages over nasogastric feeding. It is more comfortable than a nasogastric tube, and a scarf or high-necked pullover will hide the tube completely. We have always employed a general anaesthetic for the initial insertion of the tube, but the technique is simple and quick, and can be performed under local anaesthetic if necessary (Meehan *et al.*, 1984).

As well as for feeding, this technique has also been employed for gastrointestinal decompression (Lyons, 1974; Meehan *et al.*, 1984).

Cervical oesophagostomy was first described as an isolated case report by Klopp in 1951. He employed the technique to provide nutrition for a 47-year-old woman with a carcinoma of the lower pharynx and upper oesophagus, who had developed complete dysphagia during radiotherapy. His method involved dissecting down to the oesophagus through an incision placed low in the neck. The oesophagus was then opened and a tube inserted directly into its lumen. In 1967, Shumrick suggested inserting the tube directly into the pyriform fossa, employing an instrument inserted into the pyriform fossa via the mouth so as to tent up the mucosa and direct it into the neck incision, so simplifying the dissection. Graham and Royster (1967) simplified the technique still further by inserting a large curved clamp into the pyriform fossa via the mouth, and using this to tent up the skin just below the hyoid bone, before cutting down on to the tip of the clamp via a small skin incision. With some minor modifications, this is the basic technique in use today.

We have retrospectively analysed the patients undergoing feeding pharyngostomy in this unit over the last six years, paying particular attention to the indications, complications and overall outcome of the procedure.

Technique

Under general anaesthetic, with an endotracheal tube *in situ*, a pyriform fossa is visualized using a standard (anaesthetists) laryngoscope fitted with a large Macintosh blade. A uterine sound is passed into the pyriform fossa and pushed laterally, inferior to the aryepiglottic fold, so as to tent up the skin of the neck below the hyoid bone. The tip of the uterine sound can be readily palpated externally. A small incision (about five millimetres long) down on to the tip of the sound allows it to be delivered through the skin. The end of a standard silastic nasogastric tube (about 16 FG) is pushed over the tip of the sound, fixed there with an encircling suture and then the sound and attached tube withdrawn through the mouth. The end of this tube can then be passed down the oesophagus using the laryngoscope and a pair of Magill's forceps. If this proves difficult, then a second tube may be passed down the oesophagus via the mouth, the end stitched to the end of the first tube protruding from the mouth, and by pulling on the first tube where it emerges from the neck, the second tube can be easily pulled through the neck incision.

Tubes are routinely changed at three monthly intervals. Sometimes the old tube can be withdrawn and a new tube inserted with ease. Sometimes the tip of the new tube needs to be stiffened to enable it to be directed downwards. The simplest way of achieving this seems to be to cut a small hole in the side of the new tube about four centimetres from its end, and to insert a Eustachian catheter into the lumen of the tube through this hole. The catheter can be easily withdrawn once the first few

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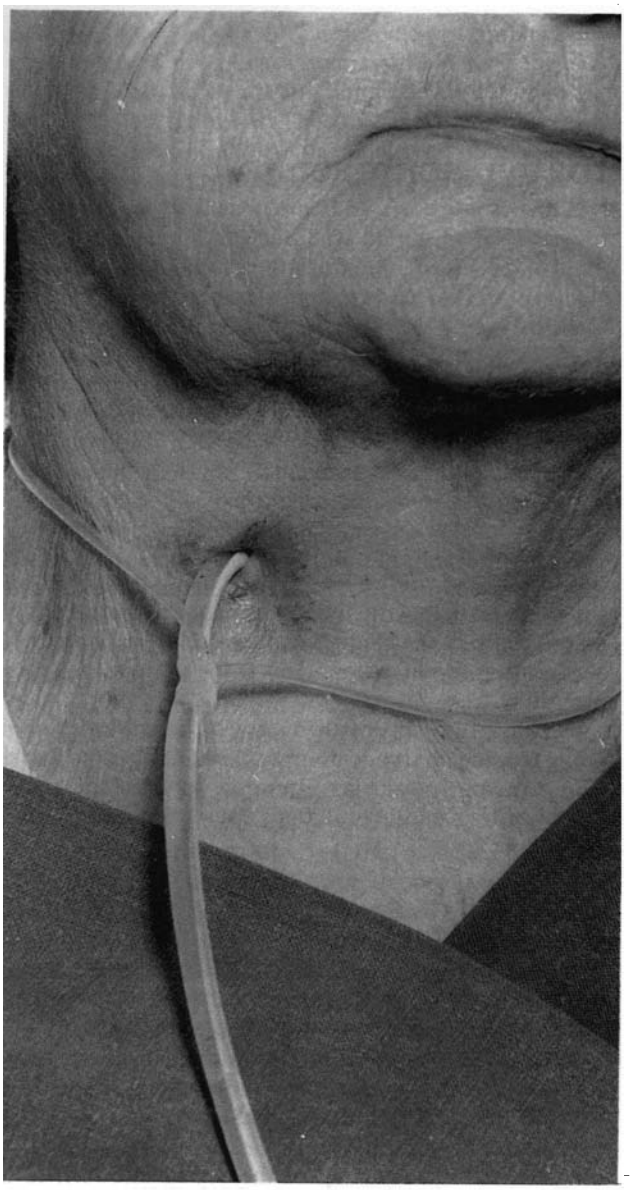

FIG. 1
Pharyngostomy feeding tube.

centimetres of the new tube have been advanced through the skin.

Method

Patients undergoing pharyngostomy between 1 January 1984 and 31 December 1989 were identified from the theatre record books. Their notes were analysed.

Results

Thirty-three patients underwent pharyngostomy during the period studied. They comprised 16 males and 17 females, with a mean age of 64 years, the youngest being 33 years and the oldest 84 years.

The majority (20 patients) underwent the procedure to aid nutrition while they were receiving radiotherapy or recovering from surgery for a malignancy of the upper air or food passages. Ten patients underwent pharyngostomy because of a neuromuscular problem which prevented normal swallowing, motor neurone disease being the commonest (four patients). These indications are detailed in Table I. One patient underwent the procedure on account of a benign post-cricoid stricture, one as an alternative to a gastrostomy after the resection of an area of ischaemic bowel, and one to cover the repair of a presumed iatrogenic tracheo-oesophageal fistula following prolonged intubation.

There were no real complications during insertion of the tubes, though difficulty was experienced passing the tube down the oesophagus of one patient with a tracheal carcinoma which had eroded into the oesophagus.

The length of time that the pharyngostomies remained in use was very variable. The average usage was for six and a half months, though two were never actually used, and one (a patient with multiple sclerosis) remains in use after three years.

Four of the patients who resumed normal swallowing had a persistent cervical fistula after removal of the pharyngostomy tube. Of these, one patient died some two months later, one fistula closed spontaneously after about six weeks and the remaining two underwent surgical closure under local anaesthetic after two months.

The commonest complication of use was dislodgement of the tube. This was a problem in eight patients in whom the tube was either coughed out of the mouth (but remained *in situ* entering the neck) or came out completely. In the former case the tube is usually easy to resite. In the latter case the neck fistula sometimes closes if the patient is not seen fairly quickly. Under these circumstances the tube needs to be resited formally under general anaesthetic. This was necessary in four patients during the study period. The one patient with Friedrich's ataxia was prone to intense muscle spasms and regularly coughed the tube out. He eventually underwent gastrostomy, and that too was not without complications.

Only one patient complained that the tube was uncomfortable, but despite this he did use it for some nine months. One patient developed a slight infection at the stoma site which cleared with a short course of antibiotics, and on one occasion, a patient passed the last three inches of his tube per rectum. Presumably the tube had been weakened by the cutting of too generous a hole

TABLE I
INDICATIONS FOR PHARYNGOSTOMY IN PATIENTS WITH MALIGNANT OR NEUROMUSCULAR DISEASES

	Number of patients
1. Carcinoma	
Oral	8
Pyriform fossa	4
Post cricoid	3
Oesophagus	2
Trachea	1
Larynx	1
Unknown primary (malignant neck lump)	1
2. Neuromuscular	
Motor neurone disease	4
Disseminated sclerosis	1
Friedrich's ataxia	1
Parkinson's disease	1
Polymyositis	1
Bulbar palsy (following CVA)	1
After removal of an intracranial space occupying lesion	1

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for the insertion of a Eustachian catheter at the last tube change.

Of the 33 patients studied, pharyngostomy feeding was discontinued in ten patients who were able to resume normal swallowing. Thirteen patients died with the tube still in use. Seven patients were lost to follow up with the tube still in use and are presumed to have died of their underlying condition, and two tubes remain in use at the time of the study (after 36 and five months respectively).

Discussion

We have found pharyngostomy feeding to be a well tolerated and cosmetically acceptable alternative to nasogastric or gastrostomy feeding. A pharyngostomy tube may be inserted at the initial diagnostic endoscopy in which dysphagia is present or anticipated. It is certainly better tolerated than a nasogastric tube and its insertion is a much smaller procedure than that of a traditional gastrostomy. The percutaneous endoscopically guided technique of fashioning a gastrostomy involves the passage of a gastroscope, which may be impossible in the case of an obstructing tumour. This technique is also not without complications (Ponsky *et al.*, 1985).

Four of the ten patients in this study who subsequently resumed normal swallowing had persistent cervical fistulae. Two subsequently required closure of the fistula under local anaesthetic about two months after withdrawal of the tube.

Apart from these fistulae, we have not experienced any major complications with this technique, and indeed we have one patient who has been fed via a pharyngostomy tube for some 11 years.

Key words: Pharyngostomy; Enteral feeding

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