ORIGINAL ARTICLE

PERCUTANEOUS ENDOSCOPIC GASTROSTOMY IN NORTH WEST PAKISTAN

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ABSTRACT

Background: Feeding patients with inability to swallow has always been a problem. The objective of this study was to report our experience with placement of percutaneous endoscopic gastrostomy tube so as to create awareness among medical professionals regarding the availability of this service locally.

Material & Methods: Patients who underwent percutaneous endoscopic gastrostomy (PEG) during the period December 1999 to January 2008 at Al-Ibrahimi Hospital and Rehman Medical Institute, Peshawar, were included in the study. The indications and procedure outcome were evaluated. Patients were admitted for 48 hours post-procedure. Feeding was started 12 hours after tube placement and care instructions were given to the care givers in all cases.

Results: A total of 26 patients, 14 male and 12 female, underwent PEG tube placement. Patient age range was 22-79 years, mean age being 57.2 years. PEG tube placement was performed successfully in all patients. Mild infection at tube site was the only complication noted in 03 patients. This was managed satisfactorily with enteral antibiotics. All patients were followed up for a minimum period of one month. No complications were reported during this period. The longest follow up is in a patient with stroke, 5 years and 4 months to date.

Conclusion: Percutaneous endoscopic gastrostomy is a safe procedure for providing nutritional support where indicated and can improve overall patient care.

Key words: Percutaneous endoscopic gastrostomy, PEG, Gastrostomy.

INTRODUCTION

Feeding patients with inability to swallow due to neurological/psychiatric disorders and coma has always been a problem. Nasoenteric feeding can be used for several weeks but is inconvenient and unstable and is probably often responsible for aspiration pneumonia.[1] Surgical gastrostomy (devised to help such patients long term) require general anaesthesia and patients requiring it would usually be unfit for anaesthesia of such type. Since its introduction in 1980 as an alternative to surgical gastrostomy, percutaneous endoscopic gastrostomy (PEG) has revolutionized the approach to enteral alimentation.[2] It can be safely performed with mild sedation and local anaesthesia, using either, "The Russel or introducer method"[3], "Push method or Sacks-Vine technique"[4] or "Pull technique."[5]

MATERIAL AND METHODS

Patients who underwent percutaneous endoscopic gastrostomy (PEG) during the period December 1999 to January 2008 at Al-Ibrahimi Hospital and Rehman Medical Institute, Peshawar, were included in the study. Patients with reduced life expectancy, oesophageal obstructive lesion, coagulopathy, ascites, gastric malignant disorder/ subtotal gastrectomy and large hiatus hernia were excluded. The indications and procedure outcome were evaluated. Silicon made PEG 24 Tube (Wilson Cook, Durham, NC, USA) was used in all cases and was placed via the 'pull' technique. The procedure was performed with intravenous sedation and with prophylactic antibiotic cover. A full oesophago-gastro-duodenoscopy (OGD) was performed to begin the procedure. The site for placement of PEG tube was located by trans-illumination on the abdominal wall and impression of finger pressure endoscopically. (Figure-1) With the gastroscope in the stomach maintaining distension, a small incision was made at the site and an 18 gauge needle catheter was pushed through the anterior abdominal wall into the stomach. (Figure-2) A guidewire was then passed through it into the stomach and grasped with a polyp snare through the gastroscope. The gastroscope with snare (holding the guidewire) was then withdrawn with the free end of the wire remaining outside the abdominal wall. (Figure-3) The PEG tube was then tied to the wire at the mouth and pulled into the stomach by pulling on the free end of the wire at

the abdominal wall. Position of the PEG tube was confirmed by check endoscopy. (Figure-4) Patients were admitted for 48 hours post-procedure. Feeding was started 12 hours after tube placement and care instructions were given to the care givers in all cases.

Fig. 1

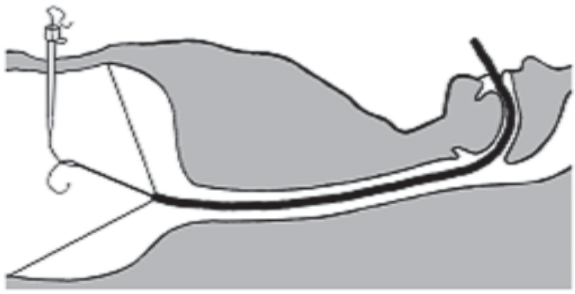

Fig. 2

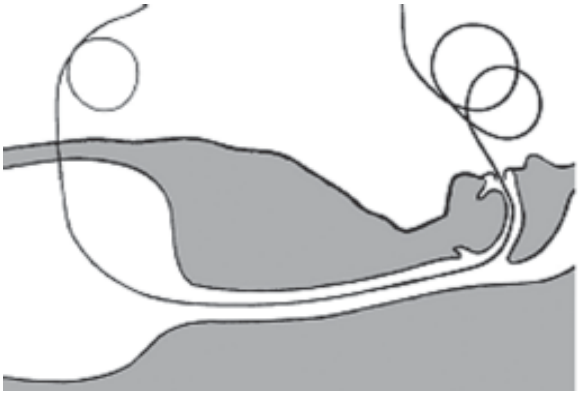

Fig. 3

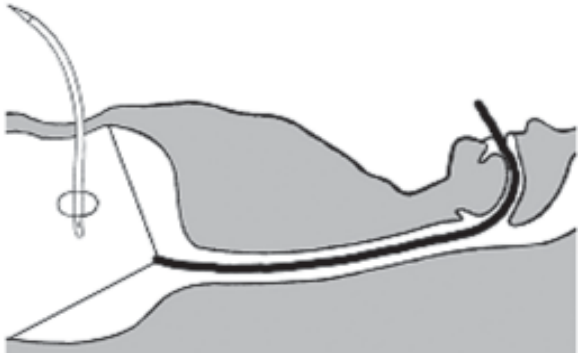

Fig. 4

RESULTS

A total of 26 patients, 14 male (53.85%) and 12 female (46.15%), underwent PEG tube placement. Patient age range was 22-79 years, mean age being 57.2 years. Most of the patients were above 50 years age, with only three patients (11.54%) below age 50 years. Indications for gastrostomy are given in Table-1. PEG tube placement was performed successfully in all patients. Mild infection at tube site was the only complication noted (03 patients, 11.54%). This was managed satisfactorily with enteral antibiotics. All patients were followed up for a minimum period of one month. No complications were reported during this period. The longest follow up is in a patient with stroke (5 years and 4 months to date). Antral gastritis was noted in four patients (15.38%) when procedure was being done. Feeding through PEG tube was allowed 12 hours after the procedure with no adverse effects.

Table 1: Indications for PEG

Indication	No. of patients	Percentage
Stroke	20	76.92%
Motor neuron disease	01	3.85%
Pseudobulbar palsy	02	7.69%
Parkinson's disease	01	3.85%
Dementia	02	7.69%

DISCUSSION

PEG tube was originally designed for enteral alimentation in patients unable to take food orally but its indications are expanding as physicians are now more aware of the critical importance of nutrition in their patients. The correction of protein-calorie malnutrition is vital in many critically ill and chronically debilitated patients.[6] Interest in the procedure has broadened because construction of a gastrostomy is no longer restricted to general surgeons, but is now increasingly performed by gastrointestinal endoscopists.[7] Since its advent PEG dramatically changed the approach to gastrostomy access.[8] Though success rate for surgical gastrostomy is 100% (95.7% for PEG), it carries mortality rate of 2.5% (0.5% for PEG), and risk of major complication of 19.9% (9.4% for PEG).[9] That is why PEG (minimally invasive procedure) is accepted widely and remains the most common form of gastrostomy access.[10]

All patients in our series had neurological basis for PEG placement. Stroke was an indication in 76.9% patients, Pseudobulbar palsy in

7.69% patients, dementia in 7.69% patients and 3.85% patient (3.85%) each of motor neuron disease and Parkinson's disease. Khokhar N et al[11] reported 96% patients with cerebro-vascular accident, 2.75% with Parkinson's disease and 1.25% with malignancy as indication for PEG. Sadik M et al [12] had 80% patients with neurogenic cause as indications for PEG.

Male patients were 53.85% and female 46.15% in our study. 88.46% patients were above 50 years age and 11.54% patients were below 50 years. Khokhar N et al[11] had 65% males and 35% female patients in their series. This predominance in male gender and older persons is probably due to more frequent strokes in this group, which is the most common indication for PEG.

PEG was successfully placed in all patients with no procedure related mortality, probably because we were more careful in selection of patients. Khokhar N et al[11] reports successful completion of procedure in > 99% patients with no procedure related mortality.

All our patients were kept in hospital for 48 hours as we thought it was essential to educate the care givers in the care of the tube. Sadik M et al[12] reports 90% inpatients and 4% outpatient procedure.

Major complications resulting from PEG tube placement include peritonitis, hemorrhage, aspiration, peristomal wound infection, buried bumper syndrome and gastrocolic fistula.[13-15]

We had 11.54% patients with peristomal infection which was treated successfully with enteral antibiotics. Sadik et al[12] reported 16%, Schurink et al[15] 13% and Anis MK et al[17] reported 3-15% peristomal infection.

Wolfsen HC et al[18] reported endoscopic finding e.g. peptic ulcer disease and gastric outlet obstruction, in 36% patients going for PEG tube placement. Initial complete oesophago-gastroduodenoscopy in our study, did not reveal any significant pathology except antral gastritis in 15.38% patients.

Most clinicians would not allow feeding through PEG for 12-24 hours after insertion,[19] though feeding 3 hours[20] or 4 hours[21] after PEG placement is considered safe. We allowed the nursing staff and care givers to start feeding the patient through PEG tube, 12 hours after the procedure.

Survival benefits due to feeding through PEG have been noted in certain indications e.g. Acute stroke[22] but not in all e.g. Dementia.[23] While survival remains multifactorial in such patients, we believe that nutritional support through PEG improves care conveniently.

Acceptability of tube feeding by the patients and care givers has always been a challenge. Low JA et al [24] reported 69% patients saying 'No' to nasogastric feeding, 71% saying 'No' to PEG feeding and 75% patients saying 'yes' to modified oral feeding despite the risk of aspiration. Anis MK et al[17] reported 60% patient to be willing to have PEG again if required and 70% felt convenience in feeding.

PEG is certainly cheaper than surgical gastrostomy[25] but expensive than nasogastric tube. The cost of PEG tube is around Pakistani Rs. 8000, while a simple nasogastric tube costs around Rs. 100. Cost, fear of failing to take care of PEG and lack of awareness both of the doctors and patients are few of the causes for not offering PEG tube to patients.

CONCLUSION

Percutaneous endoscopic gastrostomy is a safe procedure for providing nutritional support where indicated and can improve overall patient care.

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