Endoscopic Palliative Intubation in Advanced Esophageal Carcinoma

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Abstract
In ten patients with inoperable carcinoma of the esophagus, prosthetic Atkinson esophageal tubes were introduced through the malignant strictures using a fiberoptic endoscope and Nottingham introducer. This resulted in marked improvement in dysphagia and nutritional status. This palliative therapy is easy, safe and effective in facilitating oral feeding.

Key words: Esophageal intubation, therapeutic endoscopy, esophageal carcinoma.

Introduction
Carcinoma of the esophagus produces progressive dysphagia and death due to starvation rather than due to extensive metastatic spread.6 Sixty per cent of the patients have inoperable tumour when first seen by a clinician,7 and, therefore, in the majority, palliation of dysphagia is of utmost importance. Endoscopic intubation with a prosthetic tube through the malignant obstruction provides relief from dysphagia that lowers morbidity.1 2 In this paper, we describe our experience of treating ten patients with advanced esophageal malignancy by endoscopic intubation of prosthetic Atkinson tube.

Materials and Methods
Eleven patients (4 males, 6 females; age range 55-75 years, mean 63·7) considered unsuitable for curative treatment were taken for this palliative treatment. The duration of dysphagia ranged from 23 to 12 months (mean 4·4). Five patients had very poor nutritional status, and 2 had aspiration pneumonia. Four patients had growth in the middle 1 of the esophagus, and 5 in the lower 1 (including 3 patients with involvement of the gastric fundus). The length of the growth ranged from 6 to 12 cm (mean 8·5). Histologically, 9 patients had squamous cell carcinoma and one a poorly differentiated carcinoma. In all of them the diagnosis of esophageal carcinoma was confirmed by biopsy and/or brush cytology at a previous endoscopic examination. The indications for palliative intubation were: metastases (1 patient), extensive growth (3), failed radiotherapy/chemotherapy (2), unfit for palliative radiotherapy (3). The degree of dysphagia was graded as: 0 = no dysphagia; I = dysphagia to some solids only; II = dysphagia to all solids; III = dysphagia to semisolids; IV = dysphagia to liquids.

Technique of intubation
Atkinson esophageal tube is made of silicone rubber with a nylon spiral in its wall. It has a preformed distal shoulder and a proximal funnel to prevent displacement. Its internal and external diameters are 11·5 mm and 15·5 mm respectively and it is available in 2 lengths, 14 cm and 18 cm.

Under intravenous diazepam and pentazocine sedation, the esophageal tumour is inspected with a fiberoptic endoscope and a stainless steel guide wire is passed through the narrowed segment into the stomach under fluoroscopic control. Using Endo-Puestow metal olive dilators, the lumen is dilated to 45 French size during 2-4 separate sittings 3-7 days apart. After the full dilatation is achieved, the extent of tumour is assessed endoscopically. A prostatic Atkinson tube (Keymed) is then mounted over a Nottingham introducer (Fig 1) and the assembly is slid under fluoroscopic control over the guide wire to a suitable position across the stricture. The introducer and the guide wire are then withdrawn.

Fig 1: (1) Nottingham introducer with Atkinson tube mounted on it; ready for insertion. (2) Nottingham introducer. (3) Atkinson tube and rammer (pusher tube), and spring tipped guide wire is seen coiled over. (4) Endo-Puestow metal olive dilator.

Keeping the Atkinson tube in position with the help of a rammer. The total procedure is completed in 15-30 minutes, following which the correct positioning of the tube and its patency are ensured by doing endoscopy.
using GIF-P2 endoscope. The patient is kept under observation for 24 hours to detect any evidence of early esophageal perforation. A chest radiograph and a barium swallow or gastroscopy study are done at the end of 24 hours to exclude esophageal perforation, and then oral feeds are started. Figs 2a and 2b show the esophageal malignant lesion and the inserted Atkinson tube in position. Patients are advised to thoroughly masticate food before swallowing. Edentulous patients are permitted only semisolids. Analgesics are advised for the relief of retrosternal pain during the first 3-4 days of intubation. If the endoprosthetic tube is lying at the gastro-esophageal junction, antireflux measures are also advised. Radiotherapy can then be started to control progress of the growth and to alleviate retrosternal pain due to esophageal and extramural spread.

![Image](94x159 to 518x724)

**Fig 2a:** Extensive involvement of mid and lower 1/3 of the esophagus by carcinoma.

**Fig 2b:** Atkinson tube in position (chest radiograph).

### Results

In 10 patients successful dilatation could be achieved.

(a) Dysphagia: All 10 patients had improvement in dysphagia. Of the 3 patients with grade IV dysphagia before intubation, 2 improved to grade II and one to grade III. The 5 patients with grade III and the 2 patients with grade II dysphagia improved to grade 0. Three patients who had grade II-III dysphagia after intubation had fully patent esophageal lumen but their restriction to liquids and semisolids was mainly due to anorexia.

(b) Weight and Nutritional Status: Two patients gained 1.2 kg of weight in the first month following intubation. Two patients lost 2-3 kg of weight in 3 months of follow-up. Other patients had nearly constant weights during the 1-5 months follow-up period. All patients had a subjective feeling of improvement.

(c) Survival: The duration of follow-up and the survival of the patients has been given below:

- > 5 months: 3 patients (all surviving);
- 3-5 months: 3 patients (all surviving);
- 1-3 months: 4 patients

(one died 33 days after intubation)

It was gratifying to see that three patients who appeared to be terminal cases and had to be supported by relatives even for routine activities before treatment were eating and moving about without support 3-5 months after intubation. One of them had an old massive anterior wall cardiac infarction with left bundle branch block. She also tolerated the procedure well.

(d) Five of the 10 patients received palliative radiotherapy after intubation, without any complications.

### Complications

Two patients developed bolus obstruction of the tube due to swallowing inadequately masticated solids. Their tubes could be cleared easily by pushing the bolus with a GIF-P2 endoscope into the stomach. These patients unfortunately suffered a displacement of their tubes after 3 and 4 months respectively. In one patient it slipped by 4 cm and in the other it slipped into the stomach. In both, the tubes could be repositioned properly with the help of Nottingham introducer. They are doing well at present.

One patient who died 33 days after intubation, had widely metastasized disease. He had esophageal perforation, left sided pleural effusion and consolidation detected 4 days after intubation. His consolidation and pleural effusion cleared after 15 days with conservative treatment but he died of severe anorexia and cachexia 2 weeks later.

Seven of the 9 surviving patients complain of intermittent retrosternal pain of mild to moderate severity, which appears to be because of a motility disturbance of the esophagus owing to the presence of the tube or the growth itself; it responds to sorbitol and dextropropoxyphene (Proxylon).

### Discussion

In advanced carcinoma of the esophagus, long-term survival is rare, and therefore in the majority of patients palliation of dysphagia is aimed at. Average survival following any kind of palliative treatment ranges between 2 and 6 months. Considering their limited life span, such patients should not be subjected to the risks of general anesthesia and major bypass procedures used colon or jejunum. With these procedures 30-50% morbidity and mortality is reported. At times the benefits obtained are short-living and unsatisfactory. In a recent study, esophageal intubation has been...
preferred over gastric bypass for palliation in these cases. The prosthetic tube inserted perorally can do the job as nicely as the surgical methods and is associated with lesser morbidity and mortality. Published series of endoprosthetic tubes inserted surgically by laparotomy and pull-through technique show a high mortality varying from 10 to 20% and a morbidity of up to 25% with frequent occurrence of bronchopneumonia and wound infection. Push-through method of palliative intubation has been shown to be safer than the pull-through method and it restores oral feedings earlier. Using a flexible fiberoptic endoscope for inserting endoprostheses has advantages over using a rigid esophagoscope as the former does not require general anesthesia and can be used in the presence of cervical spondylosis, which is not infrequent in the elderly. Palliative radiotherapy given over 4-6 weeks (< 4,500 rads), when used alone for advanced esophageal malignancy, hardly provides an adequate palliation from dysphagia. Radiotherapy, however, can be safely given after the intubation of Atkinson tube. This approach immediately relieves dysphagia and in addition relieves substernal pain due to control of spread of esophageal growth. All ten of our patients who had successful intubation had relief from dysphagia following intubation and five of them received palliative radiotherapy without any complications. Those who received radiotherapy and those who did not were, however, not comparable as the former group was in better shape physically and nutritionally to withstand radiotherapy.

In our experience palliative intubation in inoperable carcinoma of the esophagus using a fiberoptic endoscope and Nottingham introducer is well tolerated and an effective method of providing palliation from dysphagia, preventing aspiration pneumonias and malnutrition. It can be used even in cachetic patients having at least some desire to eat. It is easy and quick to perform, allows early oral feedings and is associated with a low reported morbidity and mortality (2-4%). It certainly improves the quality of life and prolongs the survival of these patients. In our opinion it is the method of choice for providing palliation in advanced esophageal neoplasms.

References

NEWS AND NOTICES

ANNUAL CONFERENCES ESG/SGEI/LSGI
The 26th Annual Conference of the Indian Society of Gastroenterology in conjunction with the 9th Annual Conference of the Society of Gastrointestinal Endoscopy of India and 8th Annual Conference of the Liner Study Group of India is scheduled at Madras between 1st & 4th November 1985. There will be a CME Programme no 1st November 1985. A laser demonstration session (Faculty: Drs Stephen Joffe and M Y Shanks, USA); endoscopy training programme (Faculty: Drs Yoshit Sakai, Japan; ml. ib. Soehendra, Germany; Melvin Schapino, USA; Wilfred Sires, UK; Claude Liguory, France) and ultrasound demonstration and training (Faculty: Prof A Gajraj and Dr S Suresh) are scheduled on 5th November 1985.

Abstracts for the scientific papers (Oral/Poster/Plenary) must be submitted before 30th July 1985. The last date for Registration is 30th August 1985.

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