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Leading articles

Light at the end of the tunnel? Palliation for oesophageal carcinoma

Palliation of incurable oesophageal carcinoma is important, because radical ablation carries a high mortality and because the unpleasant alternative of terminal complete oesophageal obstruction needs to be avoided. The ideal palliative technique would provide normal swallowing for the patient's remaining days by a technique which was quick, safe, painless, needing only a short inpatient stay and having a low complication rate. Attempts to secure this paradigm have resulted in many treatments, few of which have been subjected to good controlled trials.[1,2]

The three main methods of palliation are surgery, intubation and now laser therapy: two papers published in this issue of *Gut*[3,4] bring encouraging results of the last. Operation by a skilled surgeon can in selected cases lead to excellent palliation because it usually relieves dysphagia completely. The considerable morbidity and a mortality of 7 to 29% even in skilled hands, however, is a high price to pay.[5–10] Operations designed to avoid thoracotomy, intrathoracic anastomosis, multiple intra-abdominal anastomoses and a bypassed unresected oesophagus probably give the best and safest surgical palliation, although Ellis has reported a series of 167 patients treated by oesophagogastrectomy with only two deaths and 22 major complications.[11] While age itself is not a contraindication to surgery,[12–14] many older patients may prefer to tolerate less than perfect swallowing in order to avoid surgery. Discarding the surgical option may mean that a few patients miss an unrecognised chance of cure, because pre-operative staging of oesophageal carcinoma is notoriously difficult, even with computerised tomography and endoscopic ultrasound.

Simple bougie or balloon dilatation of the malignant stricture still has a place – not all growths narrow down quickly and in patients with a very short life expectancy one or two bougienage sessions may suffice. In others a trial of bougienage is worthwhile as a prelude to endoscopic intubation. Multiple dilatations are usually needed, however,[15,16] and one should not set out to bring the patient back repeatedly to hospital for such therapy.

Tubes placed through the growth at the time of surgical exploration have a long history, but planned surgical intubation through a gastrotomy in patients known to have inoperable growths has been generally abandoned because of the disproportionately high morbidity and mortality.[5,17]

Endoscopic intubation has many attractive features, especially for the frail and elderly. The single procedure, usually without general anaesthesia, short hospital stay and an immediate improvement in swallowing are considerable gains. The 'tube existence' which forbids solid food, the care required to keep the tube patent and the risk of subsequent tube migration, however, detract from it. The operator's expertise is vital and frail patients

may still do poorly, despite skill and experience. Reported mortality varies from 2%[18] to 27%.[19] Newly designed tubes are an improvement on earlier models,[18] but recurrent growth sometimes blocks a previously well placed tube.

Treatment with a laser avoids some of the shortcomings of tubes, and could offer better relief from dysphagia. These are early days of laser therapy and the number of patients treated at most centres is still small. Few units in the United Kingdom have access to an appropriate laser source and skill in its use has to be learned; it is not a technique for tyros. Bown[3] and Krasner[4] both report the achievement of good swallowing by their patients, with over a third eating normally and more than a further third eating most solids; complication rates were low. Last year Ell[20] reported cumulative results of laser treatment in 1359 patients with malignant upper gastrointestinal stenosis, of whom 816 had oesophageal carcinoma. He claimed success in 83%, with a perforation rate for the whole series of 2·1% and a mortality of one per cent. The best method of deploying the laser is still under investigation: tuneable wavelength lasers, the contact laser probe,[3] the laser resistant guide probe[20] and the use of local anaesthetic injections into the growth[21] may further improve results.

It is still uncertain whether laser therapy slows tumour growth. If it does, is it because of the fibrosis it causes[22] and can this fibrosis be harnessed to the patient's benefit without producing stricture? Bown suggests that fibrosis could be predicted by the depth of necrosis, which is related to the energy dissipated.[23] While inappropriate amounts of energy applied to submucosal lesions may lead to oesophageal stricture, paradoxically it is possible that either laser therapy, or injections of sclerosants could produce 'useful fibrosis'.

Many factors influence the choice of treatment for an individual. Apart from the frailty of the patient, there is the experience of the operator and the facilities available for staging and treatment. There are also specific problems with the tumour. High cervical lesions are generally troublesome, whatever the chosen option. It may be hard to site a tube comfortably through a high cervical lesion, but laser therapy in this area is also difficult because of lack of space and the risk of aspiration of cancer debris.[21] Treatment of carcinoma at the gastro-oesophageal junction by either tube or laser therapy may lead to troublesome reflux. Tracheo-oesophageal fistula is normally best managed by tube,[24] although the development of a fast hardening aminoacid solution may become an alternative.[25] Long lesions are difficult and arduous to treat by laser and a tube may be more practical. Angulated lesions at the gastro-oesophageal junction make tube and laser hazardous, and even if a passage is made into the stomach the patient may still have dysphagia. Mobile lesions which are not suitable for curative resection may allow tubes to slip and are better treated by laser. Complete obliteration of the lumen may make dilatation or intubation impossible, but 'blind' laser therapy may be still possible, although dangerous. Rapidly growing tumours are best treated by tube, but if the tube is subsequently blocked by tumour, laser therapy may clear it. Submucosal growths, or luminal narrowing by extrinsic tumour are suitable for intubation only. Initial palliation (by tube or laser) may so improve patients' nutrition that they become fit for definitive therapy by surgery or irradiation.

The effect of palliative radiotherapy is difficult to assess[26] but half the

patients with advanced oesophageal carcinoma do not respond[27,28] and improvement in dysphagia appears short lived.[29] In contrast with traditional radiotherapy, intracavitary radiation appears to offer good palliation.[30,31] Although extensive trials are awaited, attractive features include easy outpatient use, general availability and cheapness of the equipment and suitability for proximal lesions. The place of other putative palliative techniques remains unclear. Initial reports from the USA on the 'BICAP' tumour probe suggest this is a safe and cheap treatment, but its use may be complicated by oesophageal stricture. Combination chemotherapy has its proponents[32,33] and results of large trials, some combined with radiation, are awaited. Phototherapy in 16 patients unsuitable for conventional treatment gave promising results – the disadvantage of this technique being the necessity to avoid the sun for at least a month after treatment.[34] Lastly Sugimachi reports encouraging results in 20 patients with hypothermochemoradiotherapy.[35]

Controlled randomised trials of methods of palliation are needed, and should include measures of quality of life, dysphagia score, performance status[34] and time to recurrence of symptoms, rather than duration of survival alone. Nevertheless, competition between techniques is already giving way to their complementary use, as in the two reports in this issue. Combined treatment schedules may allow quicker treatment in fewer visits and many may be managed as day cases.[36]

It is clear that management options in oesophageal carcinoma are increasing. Assessment and treatment of oesophageal carcinoma in specialised centres could produce better results.[37] In particular the use of CT, NMR, endoscopic ultrasound and laparoscopy at such centres could lead to more accurate staging. A decision on treatment could be made by a multidisciplinary team with every option available. This approach, although initially expensive, would be more efficient, and eventually cheaper than the existing haphazard arrangements. Moreover, the larger numbers of patients treated would make for better trials.

Against the background of many future possibilities, what is the best advice at present? A patient with non-squamous carcinoma of oesophagus judged 'inoperable', or a high risk surgical candidate, may be given a trial of dilatation by bougie[38] or balloon.[39] If restenosis occurs quickly, endoscopic intubation or laser disobliteration may be used. Tubes are better for patients with long carcinomas and tracheo-oesophageal fistulas. Lasers are preferable for those with high cervical or distal carcinomas (particularly hard stenoses), and for anastomotic stenoses. The risks and discomforts of all these palliative techniques should be weighed against the patient's general condition and prognosis.

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1 Angorn IB, Haffejee AA. Pulsion intubation *v.* retrosternal gastric bypass for palliation of unresectable carcinoma of the upper thoracic oesophagus. *Br J Surg* 1983; **70:** 335–8.
2 Mannell A, Becker PJ, Melissa J, Diamantes T. Intubation *v* dilatation plus bleomycin in the treatment of advanced oesophageal cancer: the results of a prospective randomized trial. *S Afr J Surg* 1986; **24:** 15–9.

3 Bown SG, Hawes R, Matthewson K, *et al.* Endoscopic laser palliation for advanced malignant dysphagia. *Gut* 1987; **28:** 799–807.
4 Krasner N, Barr H, Skidmore C, Morris AI. Palliative laser therapy for malignant dysphagia. *Gut* 1987; **28:** 792–8.
5 Watson A. A study of the quality and duration of survival following resection, endoscopic intubation and surgical intubation in oesophageal carcinoma. *Br J Surg* 1982; **69:** 585–8.
6 McKeown KC. The surgical treatment of carcinoma of the oesophagus. *J R Coll Surg Edinb* 1985; **30:** 1–14.
7 Orringer MB. Transhiatal esophagectomy without thoracotomy for carcinoma of the thoracic esophagus. *Ann Surg* 1984; **200:** 282–8.
8 Orringer MB. Substernal gastric bypass of the excluded oesophagus – results of an ill-advised operation. *Surgery* 1984; **96:** 467–70.
9 Belsey RHR. Palliative management of esophageal carcinoma. *Am J Surg* 1980; **139:** 789–94.
10 Conlan AA, Nicolaou N, Hammond CA, Pool R, de Nobrega C, Mistry BD. Restrosternal gastric bypass for inoperable esophageal cancer: a report of 71 patients. *Ann Thorac Surg* 1983; **36:** 396–401.
11 Ellis FH, Gibb SP, Watkins E. Oesophagogastrectomy: A safe, widely applicable, and expeditious form of palliation for patients with carcinoma of the esophagus and cardia. *Ann Surg* 1983; **198 (4):** 531–40.
12 Williamson RCN. Abdominocervical oesophagectomy in the elderly. *Ann R Coll Surg Engl* 1985; **67:** 344–8.
13 Sugimachi K, Matsuzaki K, Matsuura H, Kuwano H, Ueo H, Inokuchi K. Evaluation of surgical treatment of carcinoma of the oesophagus in the elderly: 20 years' experience. *Br J Surg* 1985; **72:** 28–30.
14 Mohansingh MP. Mortality of oesophageal surgery in the elderly. *Br J Surg* 1976; **63:** 579–80.
15 Cassidy DE, Nord HJ, Boyce HW, Jr. Management of malignant oesophageal strictures: role of oesophageal dilatation and peroral prosthesis. *Am J Gastroenterol* 1981; **76:** 173.
16 Moses FM, Peura DA, Wong RKH, Johnson LF. Palliative dilation of esophageal carcinoma. *Gastrointest Endosc* 1985; **31:** 61–3.
17 Lishman AH, Dellipiani AW, Devlin HB. The insertion of oesophagogastric tubes in malignant oesophageal strictures: endoscopy or surgery? *Br J Surg* 1980; **67:** 257–9.
18 Den Hartog Jager FCA, Bartelsman JFWM, Tytgat GNJ. Palliative treatment of obstructing esophagogastric malignancy by endoscopic positioning of a plastic prosthesis. *Gastroenterology,* 1979; **77:** 1008–14.
19 Diamantes T, Mannell A. Oesophageal intubation for advanced oesophageal cancer: the Baragwanath experience 1977–1981. *Br J Surg* 1983; **70:** 555–7.
20 Ell Ch, Reimann JF, Lux G, Demling L. Palliative laser treatment of malignant stenoses in the upper gastrointestinal tract. *Endoscopy* 1986; **18** suppl 1: 21–6.
21 Fleischer D, Sivak MV. Endoscopic Nd:YAG laser therapy as palliation for esophagogastric cancer: parameters affecting initial outcome. *Gastroenterology* 1985; **89:** 827–31.
22 Kelly DF, Bown SG, Calder BM, *et al.* Histological changes following Nd:YAG laser photocoagulation of canine gastric mucosa. *Gut* 1983; **24:** 914–20.
23 Bown SG, Salmon PR, Storey DW, et al. Nd:YAG laser photocoagulation in the dog stomach. *Gut* 1980; **21:** 818–25.
24 Ogilvie AL, Dronfield MW, Ferguson R, Atkinson M. Palliative intubation of oesophagogastric neoplasms at fibreoptic endoscopy. *Gut* 1982; **23:** 1060–7.
25 Ell Ch, Riemann JF, Demling L. Endoscopic occlusion of a neoplastic esophagomediastinal fistula by a fast-hardening aminoacid solution. *Gastrointest Endosc* 1986; **32:** 287–8.
26 Earlam R. Oesophageal cancer treatment in North East Thames region, 1981: medical audit using Hospital Activity Analysis data. *Br Med J* 1984; **288:** 1892–4.
27 Pearson JG. Radiotherapy for oesophageal carcinoma. *World J Surg* 1981; **5:** 489–97.
28 Koch NG, Lewin E, Petterson S, *et al.* Carcinoma of the thoracic oesophagus and cardia: a review of 146 cases. *Acta Chir Scand* 1967; **133:** 375.
29 Kelsen D. Treatment of advanced oesophageal cancer. *Cancer* 1982; **50** suppl 2: 2576–81.
30 Rowland CG, Pagliero KM. Intracavitary irradiation in palliation of carcinoma of oesophagus and cardia. *Lancet* 1985; ii: 981–2.
31 Bader M, Dittler HJ, Ultsch B, Ries G, Siewert JR. Palliative treatment of malignant stenoses of the upper gastrointestinal tract using a combination of laser and afterloading therapy. *Endoscopy* 1986; **18** suppl 1: 27–31.

32 Kelsen D, Hilaris B, Coonley C, *et al.* Cisplatin, Vindesine, and Bleomycin chemotherapy of local-regional and advanced esophageal carcinoma. *Am J Med* 1983; **75:** 645–52.
33 Liechman L, Steiger Z, Seydel HD, Vatkevicius VK. Combined pre-operative chemotherapy and radiation therapy for cancer of the eosophagus: the Wayne State University, South West Oncology Group and Radiation Therapy Oncology Group experience. *Semin Oncol* 1984; **11:** 178–85.
34 McCaughan JS, Wiliams TE, Bethel BH. Palliation of esophageal malignancy with photodynamic therapy. *Ann Thorac Surg* 1985; **40:** 113–20.
35 Sugimachi K, Kai H, Inokuchi K. Preoperative hyperthermochemoradiotherapy for esophageal carcinoma – analysis of 20 cases. *Jpn J Med* 1985; **24:** 80–3.
36 Lightdale CJ, Zimbalist E, Winawer SJ. Outpatient management of esophageal cancer with endoscopic Nd: YAG laser. *Am J Gastroenterol* 1987; **82:** 46–50.
37 Earlam R, Cunha-Melo JR. Oesophageal squamous cell carcinoma: A critical review of radiotherapy. *Br J Surg* 1980; **67:** 457–61.
38 Lux G, Groitl H, Ell Ch. Tumor stenoses of the upper gastrointestinal tract – therapeutic alternatives to laser therapy. *Endoscopy* 1986; **18** suppl 1: 37–43.
39 Chisholm RJ, Stoller JL, Carpenter CM, Burhenne HJ. Radiologic dilatation preceding palliative surgical tube placement for esophageal cancer. *Am J Surg* 1986: **151:** 397–9.