Leading Article

Palliation of oesophageal cancer – endoscopic intubation and laser therapy

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Introduction

Oesophageal carcinoma, accounting for approximately 10 deaths per 100,000 people annually, is a major health problem in the United Kingdom.¹ With many patients presenting with disseminated disease, either manifest or occult, curative treatment is applicable to only a small minority. For the majority of patients palliative relief of dysphagia is the goal of treatment.

Clinicians have an ever increasing armamentarium of palliative techniques to choose from but no single treatment modality has emerged as clearly superior to all others. The ideal palliative therapy would restore normal deglutition while avoiding prolonged hospitalization, repetitive treatments, and significant morbidity and mortality. Palliative treatment options include surgical resection, surgical bypass, radiotherapy, brachytherapy, dilatation, intubation, laser therapy, electrocoagulation, and chemoradiotherapy.^{2–4}

Although many consider surgical resection to be the palliative procedure of choice for carcinoma of the oesophagus,^{5–7} a large group of patients are unsuitable for resection because of advanced disease or poor general health.⁸ The correct identification of patients that are best served by alternative treatment modalities requires the utmost in surgical judgement.⁹ Until recently many of these patients have been treated with endoscopic intubation, with or without radiotherapy. NdYAG (neodymium yttrium aluminium garnet) laser therapy now offers another therapeutic option that at first glance is competitive with intubation. This article will review the place of both therapies in the palliative treatment of oesophageal carcinoma.

Intubation

Surgical intubation procedures, with their prohibitive morbidity and mortality, have been replaced by endoscopic methods.¹⁰ Endoscopic oesophageal intubation is both safe and effective.¹¹ Although mortality rates as high as 31% have been reported for endoscopic intubation,¹² much of this mortality reflects the grave condition of many of these patients and institutional inexperience. Reports of 4–5% mortality in several large series are more indicative of the expected mortality in experienced hands.^{13,14} Intubation provides reasonably good palliation in 95% of patients.^{13,15} Complications include perforation (7%), tube migration (23%), tube obstruction (6%), inability to intubate (5%), pressure necrosis (3%) and bleeding (1%).¹³ Since a 'tube diet' must be prescribed, the palliation is far from complete when compared to the palliative results of surgical resection.^{10,16} Widespread availability, low cost, and endoscopic palliation in a single session are some of the advantages of intubation. It remains the palliative method of choice for many patients.¹⁵

Laser therapy

NdYAG laser therapy has been shown to be both safe and effective, with a mortality of 1% and a success rate of 83% in a large collective series.¹⁷ Perforation rates of 2–5% are lower than those reported for intubation.^{17,18} Several sessions of treatment are usually required¹⁸ and the duration of palliation is variable.¹⁹ Obstruction may recur within 6 weeks, forcing repeat laser treatment or intubation. Monthly laser sessions have been advocated to prevent recurrence of dysphagia.²⁰ Combining intracavitary radiation with laser therapy may reduce the need for repetitive treatments²¹ but not all investigators have had success with this approach.²² Although laser-induced fibrosis may in fact delay tumour progression, stricturing sometimes becomes a troublesome problem.²³

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Specific indications for intubation and laser therapy

In many patients the choice between intubation and laser therapy is largely based upon institutional experience and operator preference. Certain patients, however, are clearly better served by one of the techniques. Oesophageal obstructions secondary to extrinsic compression or an infiltrating tumour are best treated with intubation, while soft, non-constricting, non-circumferential tumours, that do not hold a prosthesis well, are more suitable for laser treatment.¹⁸ Very long stenotic lesions and rapidly growing tumours require tedious and repetitive laser sessions. For this reason, intubation is often preferable in this setting.¹⁸ For tumours characterized by troublesome bleeding the well known haemostatic properties of the laser dictate its use.²⁴ A totally obstructed oesophagus may be approached 'blindly' with a laser with reasonably good results.¹⁷ The perforation rate in these cases is understandably higher.¹⁸

Tracheo-bronchial fistulization is an indication for intubation, the success of treatment being dependent upon the anatomy of the lesion.¹¹ If the fistula is situated distally within a malignant stricture intubation may be quite successful.¹³ Fistulae proximal to a stricture present a far greater challenge. Specially modified prostheses have proved useful in some of these patients but palliation is generally poor.²⁵⁻²⁷ Failed intubation of a malignant fistula is the only current indication for surgical bypass.¹⁶

An unfortunate group of patients are poorly palliated by either laser or intubation. Markedly angulated lesions and tumours at the very proximal and distal oesophagus may be difficult to palliate by either method. The complication rate of both techniques is higher for markedly angulated lesions but success is still attainable by skilled operators using either method.^{13,18} Palliation of distal oesophageal tumours is frequently complicated by gastro-oesophageal reflux that, while often simply troublesome, may predispose to fatal aspiration episodes.¹¹ In an occasional patient, laser therapy can restore an adequate lumen while preserving lower oesophageal sphincter function.²⁸ High cervical oesophageal lesions present the clinician with a difficult challenge. Tumours within 2–3 cm of the cricopharyngeus are generally unsuitable for intubation, the variable success with specially modified prostheses notwithstanding.¹⁵ Tubes at this level are not only uncomfortable but proximal migration, with resultant airway compromise, is an ever present danger.¹⁵ While laser palliation is a welcome treatment alternative for these unfortunate patients, the limited space to operate and the

risk of debris aspiration necessitates the utmost of care and experience.¹⁸

Both treatment modalities may be utilized in selected patients. A completely obstructed lumen is often best treated by an initial blind laser approach followed by intubation.¹³ A delay of 10–14 days between laser recanalization and intubation allows necrotic tumour to separate and oedema to resolve. This lessens the occurrence of prosthetic tube slippage.²⁰ The laser is also a useful therapeutic tool when tumour growth causes obstruction of a previously placed prosthesis.²³

Comparisons of intubation and laser therapy

It is difficult to compare the efficacy of laser and intubation palliation as large prospective studies are still lacking and certain subgroups of patients are more appropriately treated by one method over the other. Evidence obtained from retrospective studies suggests a lower morbidity and mortality for laser therapy. In one retrospective series of 144 cases, morbidity and mortality for laser therapy was 3.6% and 0% compared to 13.8% and 4.3% for intubation.²⁸ Since only 20% of this group of patients were treated by laser therapy, it is difficult to draw firm conclusions from this retrospective review.

Two prospective trials are available for review. In a small prospective randomized study of 20 patients superior palliation with fewer complications was reported in the laser treated group.²⁹ A trend towards increased survival in the laser group was an unexpected finding. In the second study, 40 patients were randomized to laser treatment alone or laser therapy followed by intubation.²⁰ Palliation of dysphagia and quality of life assessments were similar for the two groups. There was no procedure related mortality. Although the complication rate of the laser-intubation group (40%) was significantly higher than the laser alone group (10%), most of the intubation-related morbidity was due to food bolus obstruction of the prostheses and was amenable to endoscopic clearing of the tubes.

While oesophageal cancer remains an all too frequent neoplasm, with curative strategies still elusive, patients are not well served by therapeutic nihilism. Effective palliation is the major objective in the care of these unfortunate patients. This is best achieved by an individualized approach to each patient. Although laser and intubation methods initially seem competitive, their unique properties and complementary nature become apparent with increasing experience.

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