
Dysphagia Management in Oesophageal Cancer

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1 Background

Median survival from the time of diagnosis of oesophageal cancer is in the order of 7-8 months and 1 year survival is 37% in the UK.¹ This is less if metastatic disease is present at diagnosis and is in the order of 4-6 months. Significant prolongation of survival can be achieved in suitable patients with chemotherapy or chemoradiation and surgery, with cure being possible for patients with resectable or limited disease.

An initial audit of stenting practice from within the LCA raised the possibility that some patients were spending prolonged periods being unable to swallow. This guideline is an attempt to deal with this issue.

Dysphagia is one of the most distressing symptoms of oesophageal carcinoma. Dysphagia not only interferes with quality of life and nutrition, but increases the risk of aspiration pneumonia. Owing to short life expectancy once diagnosed, it is important that treatments for dysphagia can be delivered promptly and should ideally relieve dysphagia rapidly and durably. None of the methods for palliation of this symptom are ideal, and there are no clear answers as to the best approach.^{2,3,4}

Treatment can be categorised as palliative supportive, palliative active (chemo+/-radiation) and curative – chemo+/-radiation followed by surgery or primary surgery. The approach to dysphagia depends on which treatment approach is being adopted and to some extent by tumour type and location.

For adenocarcinoma and squamous cancers affecting the lower third of the oesophagus, initial chemotherapy followed by surgery is the preferred option in operable cases. For squamous tumours affecting the upper 2/3 of the oesophagus, definitive treatment tends to be radical chemoradiation.

2 Dysphagia Grading

The following dysphagia grading scale is used for this guidance.

Dysphagia grade scale (Mellow and Pinkas, Knyrim et al.1993)

0 = able to eat normal diet/no dysphagia

1 = able to swallow some solid foods

2 = able to swallow only semi solid foods

3 = able to swallow liquids only

4 = unable to swallow anything/total dysphagia

3 Dysphagia General Guidelines

- All patients with dysphagia scores of 1 or more must be seen by a dietician for nutritional assessment and appropriate support, advice and dietary counselling.
- All patients should be counselled about what to do and who to contact if their dysphagia worsens.
- Decisions on treatment pathway should be taken within 1 week of diagnosis so that the appropriate management of dysphagia can be decided upon.
- The patient should always be consulted about the options for treatment of their dysphagia, and their preferences taken into consideration when deciding optimum management.
- Dysphagia score and an assessment of symptoms of dysphagia should occur at each clinical contact with the patient.
- A stent should be inserted within 5 working days of decision to stent.
- All patients should be given appropriate post stent dietary advice and counselling by a dietician.
- All patients in whom the stent crosses the gastro-oesophageal junction should be prescribed proton pump inhibitors (PPIs).

4 Modes of Managing Dysphagia

4.1 Modified consistency diet

All patients requiring a modified consistency diet should receive advice from a dietician, and a speech and language therapist if required. Advice on soft/pureed/liquidised diets, nourishing fluids and oral nutritional supplements can be provided.

4.2 Radiologically or endoscopically placed nasogastric/nasojejunal feeding tube

A feeding tube, which is passed under direct vision, is usually a temporary measure, used when an improvement in dysphagia is anticipated, e.g. before starting chemotherapy or before surgery.

4.3 Radiologically inserted gastrostomy (RIG)

A feeding tube placed in the stomach under radiological guidance (RIG) will allow adequate delivery of nutrition and drug administration whilst undergoing other treatments. This approach does not restore swallowing. It is contra-indicated in surgical candidates as it may compromise the stomach for use as a gastric conduit at surgery when the stomach is anastomosed to the oesophageal remnant. Note that an oesophageal stricture is a contra-indication for percutaneous endoscopic gastrostomy (PEG) tube insertion.

4.4 Surgical gastrostomy or jejunostomy

This may be considered for patients where RIG insertion is technically difficult or if the patient is likely to undergo surgery. The tube is inserted by surgeons (usually) or sometimes by radiologists. The patient will require a general anaesthetic.

4.5 Self Expanding Metal Stent (SEMS)

These are inserted endoscopically or radiologically. They improve dysphagia rapidly and reliably, but have relatively high rates of mid-term failure – as high as 20-30% by 3 months after insertion. Failure due to migration or tumour ingrowth can usually be dealt with by further straightforward intervention with serious complications being rare. Around 60% or more of stents will migrate by 10 weeks if concurrent chemo/radiation is given, particularly if there is a tumour response to treatment. Modern double layer partially covered metal stents show some advantage as regards migration but are not designed to be removed. SEMS are not ideal in non-circumferential soft tumours or in tumours within 2cm of the upper oesophageal sphincter because of globus sensation. Stents which cross the gastro-oesophageal junction are associated additionally with the problem of reflux which can be troublesome.³ Stents interfere with radiotherapy planning and also make surgery more difficult.

4.6 Radiotherapy +/- chemotherapy

Radiotherapy with or without chemotherapy is relatively slow to access – it can be up to 10 weeks after referral until treatment begins – and slow to take effect, but provides durable relief of symptoms. There is some survival advantage and chance of long-term cure associated with chemo-radiation in locally advanced but non-metastatic disease. It is the definitive curative treatment for squamous carcinomas in the upper third of the oesophagus.

4.7 Chemotherapy alone

Most patients in the LCA with metastatic disease receive chemotherapy alone. This is less efficacious at palliating dysphagia than radiotherapy, but 50% of patients have significant relief of dysphagia within 2 weeks – avoiding the necessity for stenting.

4.8 Ablative therapies

Laser and alcohol injection are useful in selected cases with relative short strictures and for patients with high obstruction. Dilatation is not recommended.

4.9 Brachytherapy

This is not currently available in the LCA, but it has been shown to provide superior relief of dysphagia compared to stenting for patients surviving more than 3 months, although no prolongation of survival has been shown.⁸

4.10 Chemo-radiation versus SEMS

There have been only limited comparisons of SEMS and radiotherapy +/- chemotherapy in the palliation of dysphagia in metastatic oesophageal cancer in the literature. In one such study in which radiotherapy was delivered both by external beam and brachytherapy, immediate palliation by oesophageal stenting was achieved in 85% of subjects but with a 20% failure rate by 10 weeks, compared to 50% being adequately palliated by radiotherapy within 2 weeks of starting treatment and 90% remaining palliated by 10 weeks.

4.11 Combined SEMS and radiotherapy +/- chemotherapy

According to a recent American Gastroenterology Association (AGA) position statement, this cannot currently be recommended, but can be considered on a case by case basis owing to a lack of evidence. Limited evidence suggests that fully covered metal stents can be safely removed 4 weeks after initiating treatment. This maximises the benefit to swallowing and minimises the risk of stent migration.

5 Treatment Options at Diagnosis

5.1 Pre tissue diagnosis and staging

For patients with dysphagia who have an oesophageal stricture, the nature of which is unknown, the options for relieving dysphagia (if dysphagia score 4) are insertion of removable SEMS (risk of migration) or insertion of nasogastric or nasojejunal feeding tube (less complicated though difficult to manage in community and risk of tube misplacement). All patients should be referred to a dietician.

5.2 At diagnosis

5.2.1 Curative intent i.e. surgery or chemotherapy +/- radiation prior to possible surgery

For patients with lower third tumours likely to undergo surgery there are two options. The first option is to insert a fully covered metal stent if there is grade 3 or 4 dysphagia and the patient is struggling to maintain adequate nutrition and fluid intake. This stent should be removed 4 weeks after beginning chemotherapy. The second option is to provide nutritional support by NG feeding managed in the community. Patient preference will play an important role in this decision.

For squamous cell tumours in the upper 2/3 of the oesophagus, chemo-radiation is the definitive treatment and surgery is less likely. These patients should have a gastrostomy (or jejunostomy where appropriate) in preference to a stent.

5.2.2 Palliative active treatment with chemotherapy in patients with metastatic disease

A permanent partially covered metal stent should be inserted for grade 4 dysphagia at diagnosis or at any stage of treatment, or grade 3 or 4 dysphagia after 2 cycles of chemotherapy.

Radiotherapy can also be considered in early stage disease in a patient unsuitable for radical treatment for other reasons like age or co-morbidity, in which case stenting can be avoided. However for grade 3 or 4 dysphagia owing to the slow onset of relief from radiotherapy, a temporary covered metal stent should be inserted with a view to removal 4 weeks after beginning treatment.

5.2.3 Palliative supportive treatment – anticipated survival is short or age or co-morbidities preclude chemotherapy

If dysphagia score 3 or 4 strong consideration should be given to insertion of a partially covered metal stent.⁷

5.2.4 During treatment with chemotherapy

Lack of adequate response of dysphagia to score 2 or better after the second cycle of chemotherapy should lead to either placement of a stent or RIG and early provision of radiotherapy.

5.2.5 During treatment with radiotherapy

Lack of response 4 weeks after initiation of radiotherapy should lead to early endoscopy and either dilatation of benign looking strictures, stenting if malignant looking, or other treatments if inflammatory looking strictures.

5.2.6 After treatment with chemotherapy and/or radiotherapy as the only intended treatment

All patients with dysphagia score 3 and above should be endoscoped if anticipated survival is greater than 30 days. If appearances suggest malignant rather than benign change they should be stented. If appearances suggest benign changes, initial dilatation may be performed.

Patients with grade 4 dysphagia in whom it is not possible to provide nutrition in any other way and expected survival is more than 3 months should be considered for total parental nutrition. These cases are rare but do occur.

6 Patient Selection and Preparation for Stent

Ideally patients should have an expected survival of more than 30 days although this does depend on individual circumstances. The patient must be able to lie flat for the procedure without developing hypoxia. Clotting should be checked and corrected if INR>1.5. British Society of Gastroenterology (BSG) guidelines on antiplatelet medication and anticoagulants should be followed – oesophageal stent insertion should be considered a high bleeding risk procedure.

If it is decided the patient is not medically fit for oesophageal stent or patient preference precludes insertion of stent, a referral to palliative care should be made. Palliative care team should also be involved if patients experience other symptoms.

The first point of contact for arranging an oesophageal stent should be the UGI cancer diagnostic team at the hospital where the cancer was originally diagnosed. Patients should be nil by mouth at least 6 hours prior to the procedure.

6.1 Principles of oesophageal stenting

Proximal oesophageal stricture. Ultraflex stent may be better suited for placing an oesophageal stent in the cervical oesophagus. Proximal releasing stent and special cervical stents are available. These stents usually require endoscopic and fluoroscopic control. Dilatation and laser therapy are not recommended due to associated risk of complications. In a study by Macdonald et al⁹, 28% patients had throat pain when stent was within 1.5cm of upper oesophageal sphincter (UOS) while none had throat pain at 2cm. Patients can have a globus sensation if stent was placed within 4cm UOS although this did not require stent removal.

Mid and distal oesophageal stricture. Various stents including Flamingo, Ultraflex, Niti S double stent, or Z stent can be used. Dilatation provides short term relief and is associated with a risk of perforation. Very tight strictures may need dilatation to allow for deployment of oesophageal stent. For tumours at GO junction, stents with anti-reflux valve (Hanaro stent, Choo stent, Dua Z stent, Bona stent) or Umbrella stent can be used. For extrinsic compression of oesophagus, covered or uncovered metal stents can be deployed. These strictures should not be dilated.

Biodegradable stents (Ella BD) take 11-12 weeks to disintegrate. Advantage is to let the stent dissolve in the stomach if it migrates, although it is more difficult to deploy these stents and they need hand loading before deploying.

6.2 Technique of oesophageal stenting

Oesophageal stents are inserted through a trans-oral approach using either fluoroscopic guidance, endoscopy or a combination of the above. The fluoroscopy alone approach is easy and quick. However, some endoscopists prefer the combined use of endoscopic and fluoroscopic guidance especially in hospitals where an established experienced radiological service is not available. The procedure is typically performed under conscious sedation with a combination of an opiate (i.e. pethidine 25-50mg or fentanyl 50-100 µm) and a sedative (i.e. midazolam 2-6 mg).

The patient is usually positioned in the left lateral decubitus position as this enables optimal identification of the gastroesophageal junction (GEJ). However, if the patient is unable to tolerate this position, the procedure can be performed in the supine position. A right anterior oblique view enables accurate stent placement at the GEJ. A tilting table allows for the head to be placed in a raised position to decrease the risk of aspiration during the procedure.

A 260cm guidewire is passed through a 6Fr sheath (goldprobe or a double lumen catheter) and under endoscopic vision the wire is threaded through the stricture. Once the wire is deemed to be in the stomach, it is removed and iodinated contrast injected to confirm visualisation of gastric rugal folds. The catheter is then passed over the wire back into the stomach. The length and tightness of stricture can be estimated by slowly withdrawing the sheath while injecting contrast till the stricture is delineated. An alternative method is to pass a balloon over the guidewire into the stomach, inflating the balloon and withdrawing the balloon till it impacts at the distal end of the stricture. A fluoroscopic image should also be taken to look for landmarks (ribs/vertebrae or diaphragm.). An external metal clip can be placed on the skin to visualise the positioning of the stent relative to the stricture. Alternatively lipiodiol can be injected above the proximal end though it dissipates rapidly and may be difficult to use as a landmark.

A stent that is at least 3-4 cm longer than the stricture is recommended to account for stent shortening and to ensure satisfactory stent coverage across the lesion. This ensures 1-2 cm cephalic and caudal coverage of the lesion. It is recommended that placement of the stent is performed so that two thirds of the stent is placed cranial (proximal) to the stricture. This is to reduce the possibility of stent migration. Oesophageal stricture pre-dilatation is not advised due to the risk of perforation but can be performed in cases of tight stenosis to allow for stent delivery. In such cases, gentle dilatation, usually with a 10-14 mm oesophageal radial balloon, may be performed. In patients with tight strictures requiring pre-dilatation, if dilatation is not performed prior to stent insertion, then it can be done post stenting. A chest X-ray is usually performed post procedure to rule out perforation. After stent placement, if the stricture is not tight, post dilatation is not usually required, as the stent gradually expands to its nominal diameter in 24-48 hours. Covered part of the stent is usually 18mm in diameter which flares to 26mm at proximal and distal ends (although the sizes can vary depending on the type of stent used).

6.3 Complications of oesophageal stenting¹⁰

Bleeding (3-8%)

Chest pain (12-14%)

Migration (<6% for bare and 25-32% for covered)

Tumour ingrowth in bare SEMS (17-36%)

Fistulation (2.8%)

Perforation (<1%)

Reflux (3.7%)

Post procedural pain is common and adequate analgesia should be provided. Occasionally stents have to be removed because of the pain. Haemorrhage can also occur and stenting should be avoided in haemorrhagic tumours where radiotherapy is preferred. Perforation can be managed by successful deployment of the stent.³ Stent migration can usually be managed endoscopically/radiologically. In many cases the migrated stents produce no clinical problems. Surgery for migrated stents causing obstruction is relatively rare.⁶ What is not known about is the experience of patients with dysphagia and the proportion of time spent with severe dysphagia from diagnosis until their death.

6.4 Management of recurrent dysphagia post stent insertion

Causes of recurrent dysphagia after stent insertion can include stent blockage due to food bolus (can be removed endoscopically) or due to tumour at the proximal or distal end of stent. For the distal overgrowth, a second overlapping stent can be deployed or laser can be used if the lesion is nodular. For proximal overgrowth, a second overlapping stent can be deployed if there is enough clearance at the superior end. If there is inadequate clearance, laser therapy can be tried. In either situation, a RIG or surgical jejunostomy may be required. Other causes can be tracheo-oesophageal fistula (treated by deploying an overlapping covered stent) or stent migration (re-stenting may be required).

7 References

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Appendix 1: Patients Presenting With Malignant Dysphagia

