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Oesophageal Dilatation / Stenting

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Balloon dilatation and/or stenting of the oesophagus may be indicated for malignant and non-malignant reasons. Non-malignant indications include Achalasia, a rare condition characterised by impaired peristalsis and failure of the lower oesophageal sphincter to relax; and benign strictures, arising from oesophageal reflux, oesophageal resection surgery, radiation injury or ingestion of corrosive substances.

The presenting features of malignant disease may be indistinguishable from non-malignant causes and include dysphagia, regurgitation, chest pain and weight loss. Work-up for oesophageal obstruction must therefore consider the possibility of cancerous lesions. Benign lesions typically undergo dilatation, malignant oesophageal tumours are typically stented, using partially or fully covered self-expanding metal stents – covered stents reduce the possibility of tumour ingrowth.

Proximal lesions, for example, lesions at the pharyngo-oesophageal level are less commonly stented due to the chance of stent migration causing laryngeal irritation. Proximal stents are also associated with a higher risk of tracheo-oesophageal fistulae formation. Distal obstructing lesions and long-standing obstructing lesions are more likely to have debris behind them – airway protection should be considered when these patients present for dilatation/stenting.

Operator Considerations

Indications: symptomatic obstruction of the oesophagus. Achalasia, reflux-induced strictures and malignant strictures are the most common indications.

Contraindications: active oesophageal perforation is an absolute contraindication. Relative contraindications include coagulopathy. Anticoagulants should be discontinued pre-procedure.
Planning: a barium swallow test will help to establish size, level and extent of the oesophageal lesion. Oesophageal manometry and oesophagogastroduodenoscopy (OGD) will help to rule out other disorders.

Duration: 30-60 minutes.

Position: supine, for the airway-protected patient, left lateral if the airway is unprotected
Access: trans-oral approach – shared airway, mouth guard advisable.

Technique: Achalasia: a catheter is introduced into the oesophagus over a guidewire. The size and length of the narrowed segment is defined by injecting contrast medium into the oesophagus via the catheter. A balloon is passed to the level of the oesophagogastric junction and inflated for 1-3 minutes. A second and third inflation may be performed. Stent selection: the stent is chosen so that at least 2 cm of normal oesophagus is covered both above and below the stricture. Long strictures may require more than one stent.

Complications: the procedure has a low complication rate. Main complications include perforation, bleeding and bacteraemia. Aspiration, prolonged chest pain and stent migration may also occur.

Post-procedure: water-soluble contrast study to screen for perforation. Oesophageal dilatation is often performed as a day case procedure. The patient should be observed for a minimum of 2 hours before discharge. A barium oesophagogram is performed at 4-6 hours post-procedure to screen for a mucosal tear or perforation. The patient must be able to tolerate water orally before discharge.

Anaesthetic Considerations

Preop

- History of reflux - particularly important in patients with achalasia. Ask the patient about frequency of vomiting and appearance of vomit on clothes in the morning.
- A preoperative chest X-ray may be useful in elucidating signs of chronic aspiration.
- Ensure prokinetic and proton pump inhibitor medications are taken regularly, up until and on the morning of the procedure.
- Patients with achalasia are likely to have oesophageal stasis and may benefit from a fasting period in excess of the standard 6 hours.

Intraop

Approach

- Local anaesthesia (LA) + sedation, general anaesthesia with endotracheal intubation.
- Local anaesthesia + sedation can be considered for the "right" patient. Topicalise the nasopharynx and oropharynx with Xylocaine spray.
- General anaesthesia - consider rapid sequence induction (RSI) for patients with a history of reflux.

Antibiotics

- Not indicated.

Analgesia

- Analgesia: 100-200 mcg fentanyl + paracetamol is often sufficient.

Extubation

- Prior to extubation, suction the oropharynx to remove any debris and residual contrast medium.
- If an RSI was performed at the outset, extubate the patient fully awake and sitting upright.

Other

- Anti-emetics: may help reduce post-procedure retching.

Postop

- Suspect perforation in patients who develop persistent chest pain, breathlessness, fever or tachycardia.
- Oesophageal stents continue to expand in the postoperative period and may cause some discomfort. Manage with analgesics and reassurance. It is usually self-limiting.