



AL-Ayen University
College of Health and Medical Technology
Department of Anesthesia



Tracheostomy

Lecture (8) theoretical
Basics of Anesthetic Equipment (1)
2nd Stage
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- **Tracheostomy tubes** are curved tubes inserted through an opening created in the patient's neck which passes into the upper trachea.
- **Tracheostomy** is a procedure to help air and oxygen reach the lungs by creating an opening into the trachea from outside the neck.



Uses of tracheostomy:

1- Upper airway obstruction

- ✓ Tracheostomies are indicated in upper airway obstruction which cannot be bypassed by oral endotracheal tube.
- ✓ They may be used before or after head and neck surgery.
- ✓ They are an option in 'can't intubate, can't ventilate' situations.

2- Respiratory wean

- ✓ Tracheostomies are well tolerated by non-sedated patients, thus facilitating long-term support of ventilation during respiratory weaning.
- ✓ They permit suctioning of the airway in patients unable to clear secretions.

3- Severe sleep apnoea

- ✓ In patients unresponsive to continuous positive airway pressure (CPAP).

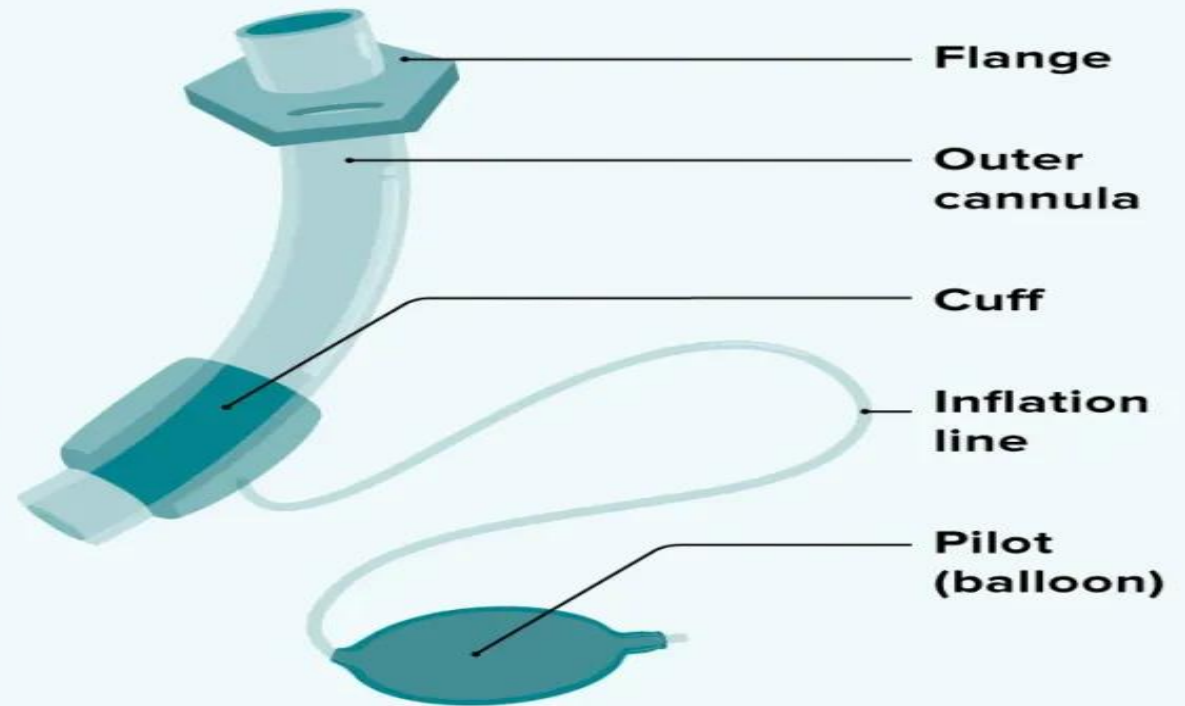
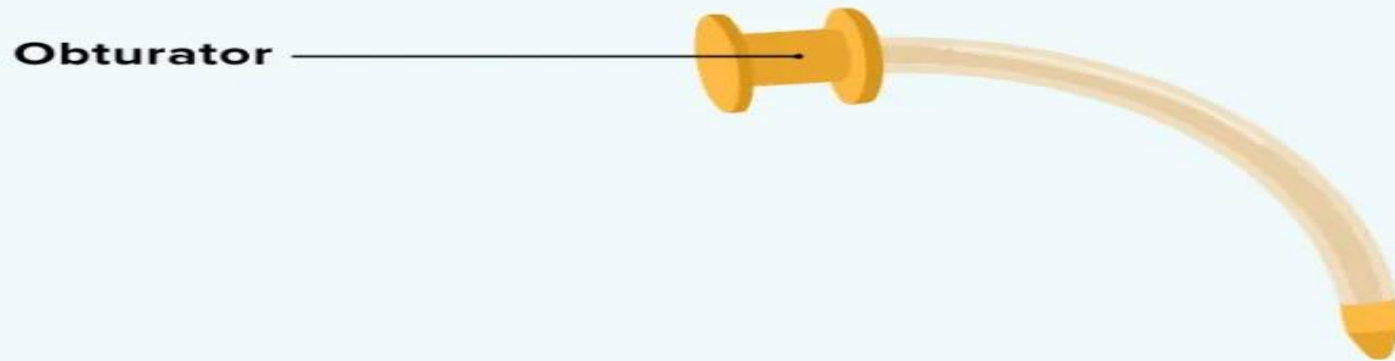
How it works:

- ✓ **The tracheostomy tube may initially be inserted surgically or using a percutaneous technique.**
- ✓ **this is performed under general anaesthesia, however, tracheostomy under local anaesthesia may be carried out in patients in whom there is a risk of complete airway obstruction under general anaesthesia.**

A typical tracheostomy tube is made up of three parts, an **outer tube**, an **inner tube** and an **obturator**.

TRACHEOSTOMY TUBE COMPONENTS

obturator



healthline

1- Outer tube:

This consists of a curved plastic tube with a proximal flange that is sutured or tied in position on the neck. The tube has a proximal 15mm connection for a breathing system. Some devices have an adjustable flange, allowing accommodation of abnormal anatomy such as a large neck, or a distal tracheal obstruction, Adult tubes of ID 6.0–10.0mm are available. Larger sizes are preferable where possible because of the reduced chance of mucus plugging. The outer tube may be cuffed or uncuffed.

2- Inner tube:

The inner tube is a simple plastic sleeve that slides inside the outer tube and may easily be replaced if it becomes plugged with mucus. Paediatric tubes are often of a single-lumen design (without an inner tube) because of their narrow diameter, this necessary more frequent tube changes to prevent mucus plugging.

3- Obturator:

This is a plastic insert with a bullet-shaped tip which protrudes from the tracheostomy tube to facilitate tube insertion. It must be removed in order to ventilate.

Advantages:

- ✓ Tracheostomies are better tolerated than oral or nasal intubation, allowing sedation to be weaned.
- ✓ Oral hygiene is improved.
- ✓ A tracheostomy may be the only airway option in patients with upper airway lesions.
- ✓ Dead space and airway resistance are reduced.
- ✓ Facilitation of pulmonary suctioning.

Disadvantages:

❖ Immediate complications:

- airway loss
- haemorrhage
- pneumothorax.

❖ Early complications:

- dislodged tracheostomy tube, within the first few days, it may be difficult to reinsert a tracheostomy which becomes dislodged and there is a risk of creating false passage
- secretions may block the tube causing airway obstruction
- local infection.

❖ Late complications:

- tracheal stenosis
- tracheomalacia.

Uncuffed tracheostomy tube:

Uses:

- In patients who can protect their own airway and manage their secretions by coughing.
- In paediatrics (avoidance of pressure necrosis of the trachea and to maximize the internal diameter).

Disadvantages:

- Unless the tube is a close fit, positive pressure ventilation will not be possible because of the air leak around the tube.



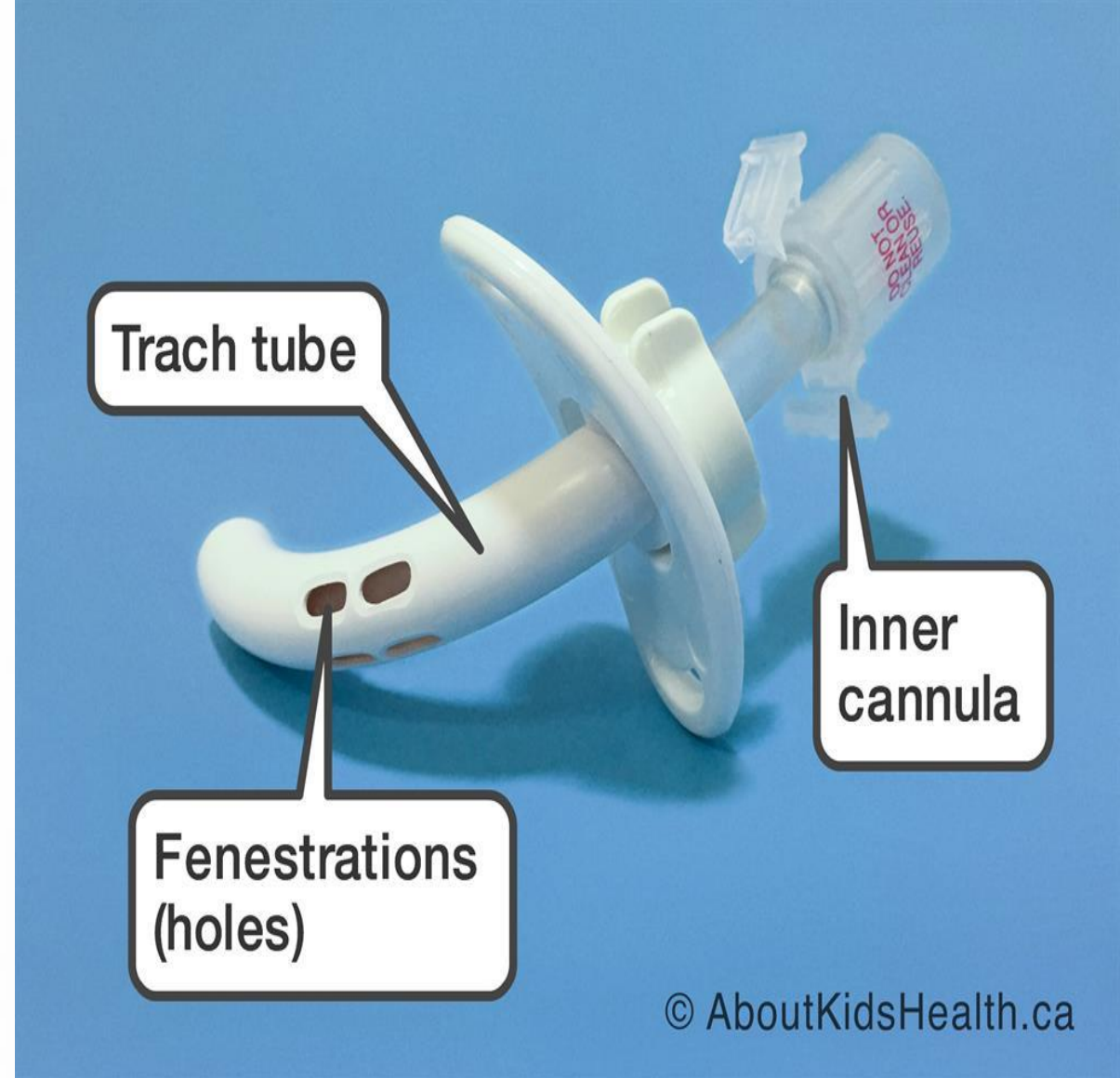
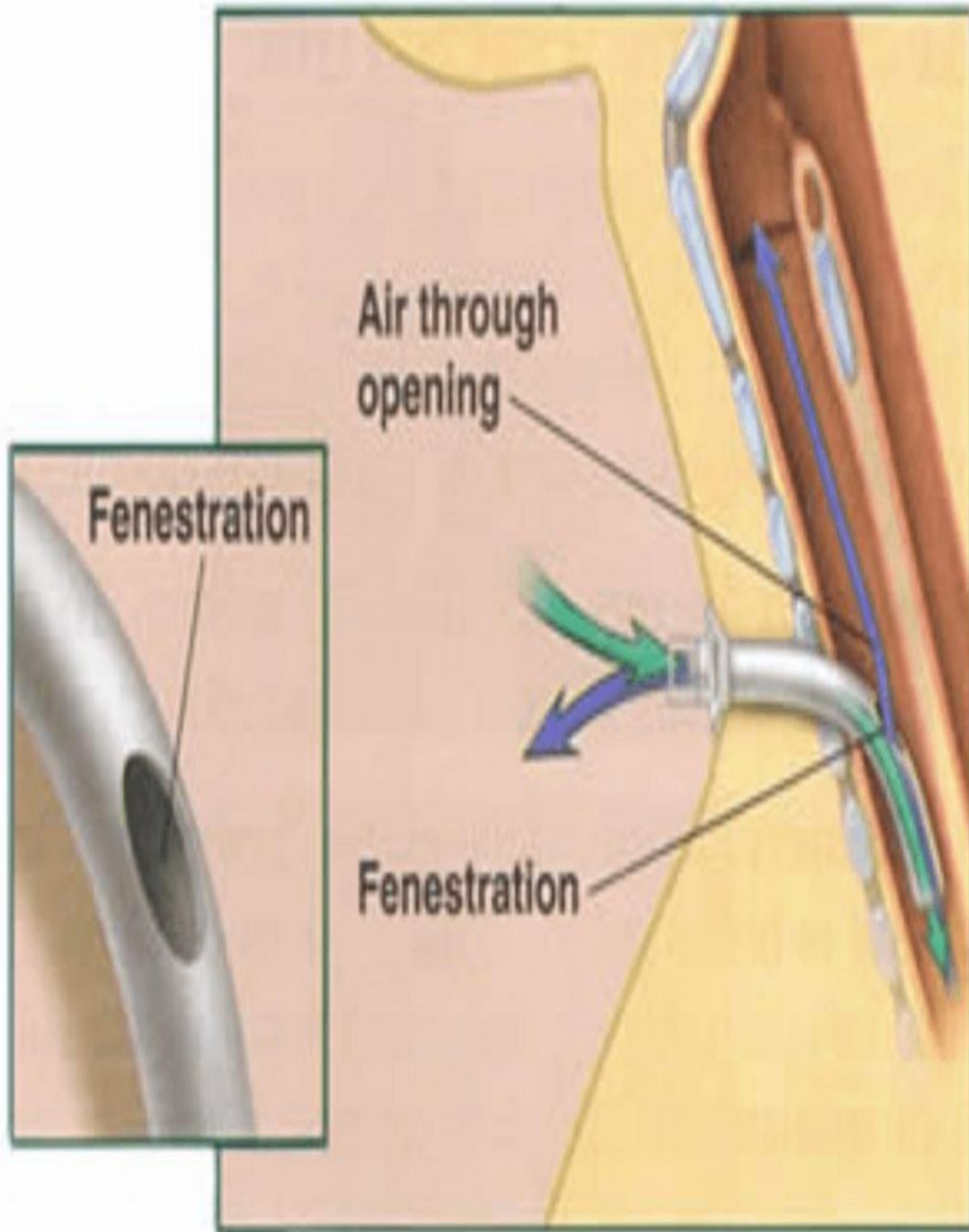
Fenestrated tracheostomy tube:

Uses

- Fenestrations are used to allow exhalation through the glottis as part of the weaning process, and in particular to permit speech.

Disadvantages

- Positive pressure ventilation will result in air leaks and should be avoided where possible.
- There is a risk of surgical emphysema in patients with newly formed tracheostomies.
- Granuloma formation may occur around the fenestrations. Other notes A non-fenestrated inner tube should be reinserted for suctioning.



Laryngectomy tube (Montandon)

A laryngectomy tube is a J-shaped tube with an extended proximal limb designed for use in place of a standard tracheostomy tube during laryngectomy. It keeps the breathing system away from the surgical site, facilitating surgical access.

Uses

- Laryngectomy and other major head and neck surgery in patients with a tracheostomy.





**THANK YOU
FOR YOUR
ATTENTION**