

# TRACHEOSTOMY



## **DEFINITION:**

Tracheotomy or Tracheostomy is a surgical procedure which consists of making an incision (cut) on the anterior aspect (front) of the neck and opening a direct airway through an incision in the trachea (windpipe). The resulting stoma (hole) can serve independently as an airway or as a site for a tracheal tube or tracheostomy tube to be inserted; this tube allows a person to breathe without the use of the nose or mouth.

The word tracheotomy originates from the Latin words trachea-windpipe which comes from the combination of Latin “ tracheia” and



Greek “arteria” indicating an uneven road, and “tome” – cut. It has a long-lasting history. First similar operations were found on the ancient Egyptian clay tablets dating back to 3600 BC. Guidelines for the person performing pharyngotomy were described in Rig Veda- the holy scriptures of Hindi medicine, about 2000 BC. Asclepiads in Bithnia (124-156 BC), a Greek physician practicing in Rome, is commonly considered the father of pharyngotomy.



## FUNCTIONS OF TRACHEOSTOMY:

- To relieve upper airway obstruction by providing an alternative pathway for respiration
- Improves alveolar ventilation
- Protects airway by using cuffed tubes from pharyngeal secretions and blood
- Removal of tracheobronchial secretions
- Intermittent positive pressure ventilation
- To administer anaesthesia in cases of difficult anaesthesia/ trismus/ laryngeal growth.



## **AIMS OF TRACHEOSTOMY:**

**Respiratory obstruction**

**Retained secretions**

**Respiratory insufficiency**

**Respiratory paralysis**

**Reduction of dead space**



# INDICATIONS OF TRACHEOSTOMY:

## Congenital:

Laryngeal web

Laryngeal stenosis, Tracheo-oesophageal fistula

Bilateral choanal atresia

## Acquired: Infectious-

Acute epiglottitis

Diphtheria

Ludwig's angina

Retropharyngeal abscess

Parapharyngeal abscess

Tongue abscess



• Trauma:

Injury to larynx/trachea – blunt or open

Instrumental (endoscope)

Fracture mandible/maxillofacial

NEOPLASMS:

Benign or malignant neoplasms of larynx, pharynx, thyroid, tongue

Foreign body larynx

Odema larynx due to steam, fumes, dust, gases,  
allergy, radiation

Bilateral abductor paralysis

Miscellaneous:

Coma, head injury, CVA

Narcotic overdose



**Poliomyelitis**

**Guillain – Barre syndrome**

**Myesthania gravis**

**Multiple rib fracture**

**Chest injuries**





## POSTOPERATIVE CARE:

**CARE OF THE PATIENT**

**CARE OF THE TUBE**

**CARE OF THE WOUND**

### CARE OF THE PATIENT:

- 1) Propped up position- reduces visceral pressure to increase respiratory efficiency.
- 2) To provide with a bell, paper & pen for communication.



## CARE OF THE TUBE:

- 1) **Suction** – aseptic suction as frequently as possible with a sterile catheter. Tracheostomy tube should sit comfortably proximal (1-2cms) to the carina & should be at least 2cms inside the stoma.
- 2) Lumen of the catheter should be less than half the lumen of the tracheostomy tube & suction should not be more than 10secs. at a time. Suction should be applied only on withdrawal by an occluding finger.



- 3) Humidification: To prevent crusting, 10-15 drops of normal saline is instilled to loosen the crusts before suctioning.
- 4) Inner tube can be removed to clean the secretion & crusts keeping the outer tube in situ.
- 5) Tracheostomy tube can be changed at around the 7<sup>th</sup> POD for maturation of the stoma.

### **CARE OF THE WOUND:**

- 1) Daily dressing
- 2) Antibiotic coverage



## TYPES OF TRACHEOSTOMY TUBES:

### Metallic & non-metallic

Metallic : Alder Hey

Naegus

Chevalier Jackson

Sheffield

Non-metallic:

Great Ormond Street

Shilley

Portex

Bivone





## TYPES OF TRACHEOSTOMY:

Temporary: Emergency – Advanced carcinoma larynx with stridor

Elective - Part of a planned procedure, e.g., major head neck surgery.

Ventillated patient for prolonged respiratory support.

Permanent: Total laryngectomy/ Total laryngopharyngectomy.

Aspiration pneumonia



## COMPLICATIONS:

Immediate:

Anaesthetic complications

Haemorrhage- thyroid veins/jugular veins/ arteries from skin surface

Air embolism

Cardiac arrest

Local injury to thyroid cartilage, cricoid cartilage, RLN



## Intermediate:

Displacement of the tube

Surgical emphysema

Pneumonia, pneumothorax

Perichondritis

Tube obstruction by secretion or crusts

Tracheoarterial fistula

Tracheal necrosis

Dysphagia



Late:

Stenosis

Decannulation problems

Tracheocutaneous fistula

Disfiguring scar





THANK YOU

