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Cricothyroidectomy

*When end tracheal intubation is not possible.
*In the emergency situation a vertical skin incision is recommended with dissection rapidly carried down to the cricothyroid membrane.
*A 1-cm transverse incision is made through the membrane immediately above the cricoids cartilage. A tracheal hook will aid improving the aperture and the insertion of an available tube.
*In case of unstable cervical spine fracture (Cricothyroidotomy more suitable.)
Tracheostomy

- epiglottis
- esophagus
- thyroid gland
- tracheostomy tube
- trachea
Indication for tracheostomy

1- Acute upper airway obstruction:
   An inhaled foreign body, a large pharyngolaryngeal tumor, or acute pharyngolaryngeal infections in children.

2- Potential upper airway obstruction:
   -after major surgery involving the oral cavity, pharynx, larynx or neck.
3-**Protection of the lower airway**: 

- Protection against aspiration of saliva in unconscious patients as a consequence of head injuries, faciomaxillary injuries, comas, bulbar poliomyelitis or tetanus

4-**Patients requiring artificial respiration**
*The advantage of an elective procedure is that there is complete airway control at all times, unhurried dissection and careful placement of an appropriate tube
TRACHEOSTOMY

1. EXPOSURE OF THYROID ISTHMUS
2. PLACEMENT OF TRACHEOSTOMY TUBE
Tracheostomy tubes

*Basically made of two materials, silver or plastic. Both materials have been used to make tubes of various sizes with varying curves, angles, cuffs, inner tubes and speaking valves.*

A cuffed tube is used initially, which may be changed after 3-4 days to a non-cuffed plastic or silver tube.

- **The pressure within the tube cuff should be carefully monitored and should be low enough not to occlude circulation in the mucosal capillaries.**

*When in position the tube should be retained by double tapes passed around the patient’s neck with a reef knot on either side*
All forms of tracheostomy and cricothyroidectomy bypass the upper airway and have the following advantages:

1. The anatomical dead space is reduced by approximately 50%.
2. The work of breathing is reduced.
3. Alveolar ventilation is increased.
4. The level of sedation needed for patient comfort is decreased and, unlike end tracheal intubation, the patient may be able to talk and eat with a tube in place.
Disadvantages

1- Loss of heat and moisture exchange performed in the upper respiratory tract.

2- Desiccation of tracheal epithelium, loss of ciliated cells and metaplasia

3- The presence of a foreign body in the trachea stimulates mucus production. Where no cilia are present this mucociliary stream is arrested
4-The increased mucus is more viscid, and thick crusts may form and block the tube, particularly in children.

5-Whilst many patients with a tracheostomy can feed satisfactorily, there is some splinting of the larynx which may prevent normal swallowing and lead to aspiration. This aspiration may be (silent)-not apparent.
Post-op management

1- Suction-efficient, sterile as often as required
2- Humidification (+- oxygen)
3- A warm well-ventilated room
4- Position of tube and patient
5- Spare tube, introducer, tapes, tracheal dilator
6- Change of tube, inner tube, possible speaking valve
7- Physiotherapy
1-Intra-op complications

- Haemorrhage
- Injury to par tracheal structures particularly the carotid artery and recurrent laryngeal nerve and oesophagus
- Damage to the trachea
2- Early post-op complications:

- Apnoea caused by a fall in the Pco2
- Haemorrhage
- Subcutaneous emphysema, pneumomediastinum and pneumothorax
- Accidental extubation, anterior displacement of the tube, obstruction of the tube lumen and tip occlusion against tracheal wall
- Infection
- Swallowing dysfunction
3-Late post-operative complications:

-Difficult decannulation
-Tracheocutaneous fistula
-Tracheo-oesophageal fistula, tracheo-innominate artery fistula with severe haemorrhage
-Tracheal stenosis.
Thank you