Paediatric Tracheotomy

“CHILDREN ARE NOT JUST LITTLE ADULTS”

“PAEDIATRIC TRACHEOSTOMY IS A DIFFERENT OPERATION”

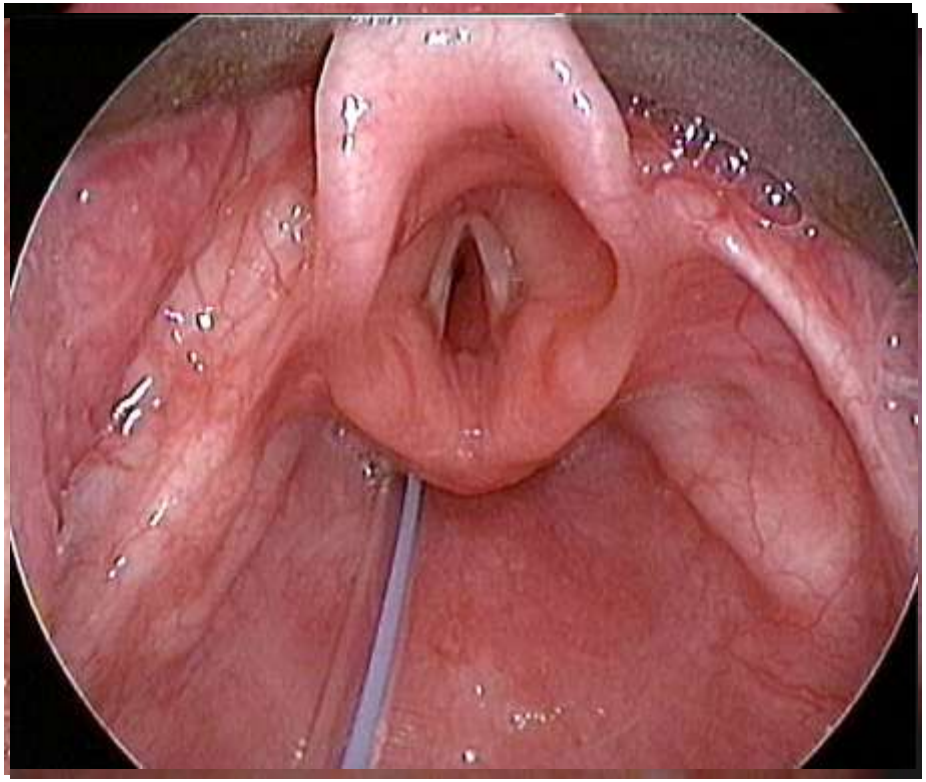
Paediatric Tracheostomy

- Indications
- Techniques
- Special patients and special tubes
- Complications
- Decannulation
- Avoiding Tracheostomy

Indications in children

- Airway obstruction
  - laryngotracheal
  - craniofacial
  - temporary eg for cleft larynx repair
- “long term” ventilation
- Access/toilet/suction
- “Protection”

Laryngotracheal



Craniofacial

- Treacher Collins
- Pierre Robin
- Hemi facial microsomia
- Crouzon's (Apert's,Pfeiffer)

Techniques - positioning and skin incision

- Chin strap and position
- Aberdeen retractors
- *Small* skin incision
  - Vertical / Horizontal
- Minimum dissection with microbipolar
- Keep to midline.
- Diathermy for thyroid isthmus

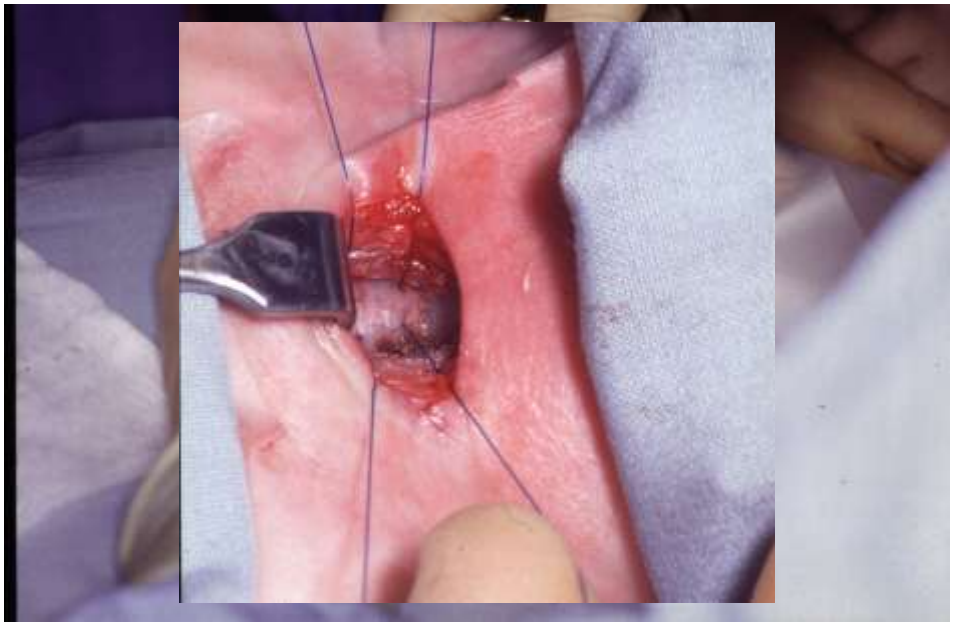
Chin strap

Dissection to trachea

Techniques - stay sutures

- Avoid temptation to open planes unnecessarily
- Level of tracheal incision
  - Low for cleft, LTR
- Stay sutures
  - through 1-2 rings, sufficiently laterally

Stay Sutures

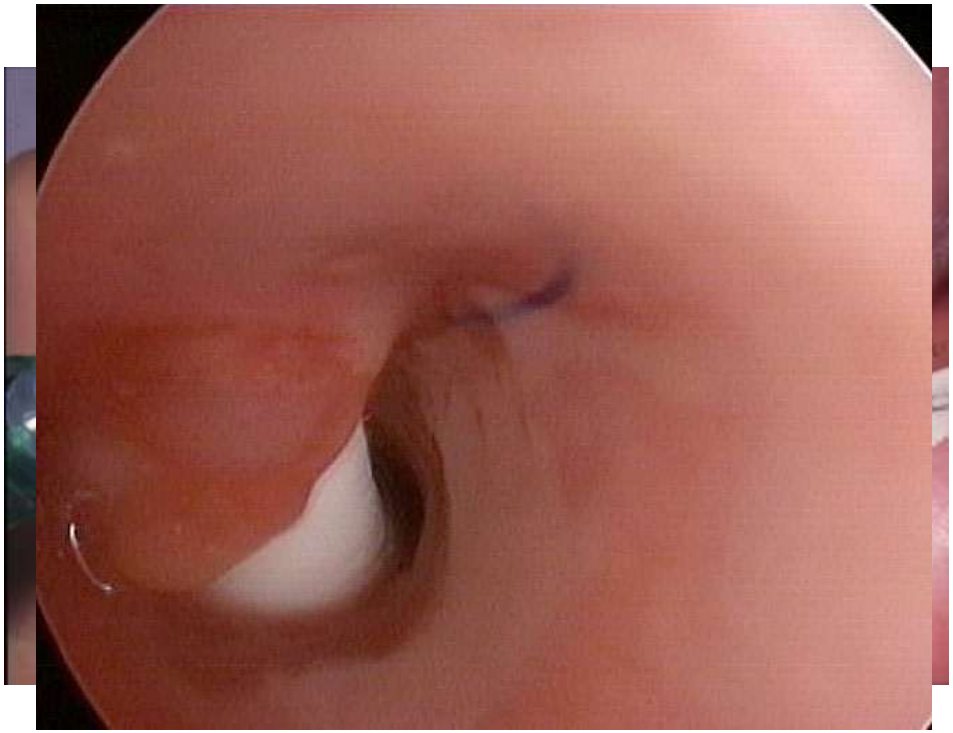


Techniques - tracheal incision

- Vertical slit *just too small*, once the anaesthetist, tube**s**, suction and connector are ***all*** ready
- Select appropriate tube (chart)
- Extend incision just enough to take tube
- Loose skin sutures to avoid s.emphysema
- Adhesive tapes on stay sutures with instructions
- Check tape tension and tube position with head in neutral position

Incision and tube placement

Safety and security

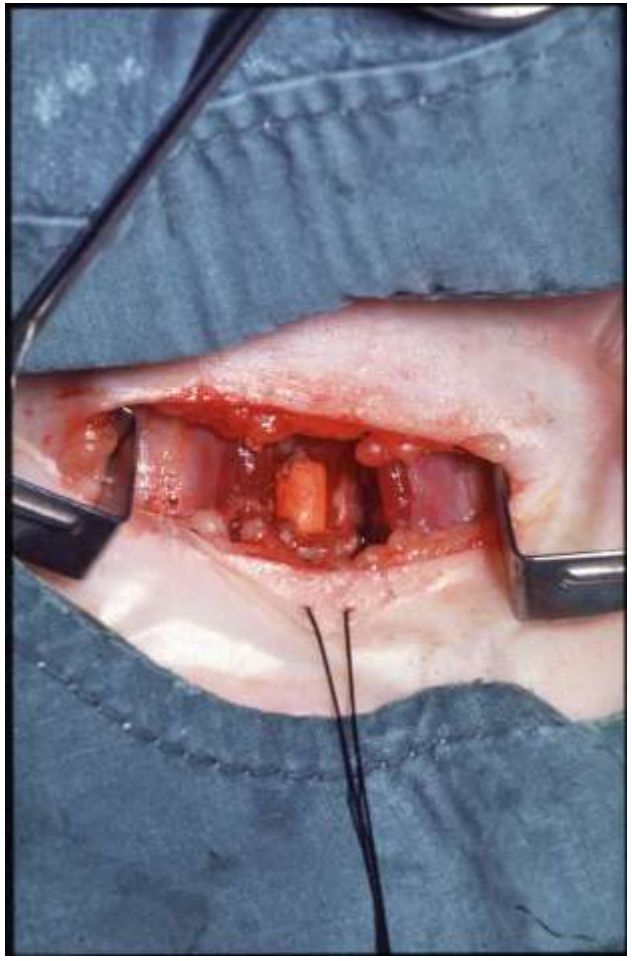


Techniques - postoperative

- Clear post op instructions
- Tubes and forceps by bed
- Post op CXR
    - pneumothorax
    - tube length (especially neonates)
- Avoid high pressures if possible

Solutions to problem patients -not intubatable

Solutions to problem patients high innominate



Solutions to problem patients

- Displaced trachea - CT/Xray to determine position
- Scarred neck - Bronchoscope with lights down

Solutions to problem patients

- Massive cystic hygroma
- Epidermolysis Bullosa

- Dissection through cysts usually easy

- Minimum tension - usually heals OK

Solutions to problem patients

- Tracheomalacia - Extended Tube

Solutions to problem patients

Solutions to problem patients

Airway obstruction in tracheostomised patients

- Obstruction or displacement
- Tube tip stenosis
- Tube displaced into RMB
- Tracheo- bronchomalacia

Complications

- Blockage
  - Post op and late
  - Suction
  - Tube size
  - Remaining airway
  - Inner tube

Complications

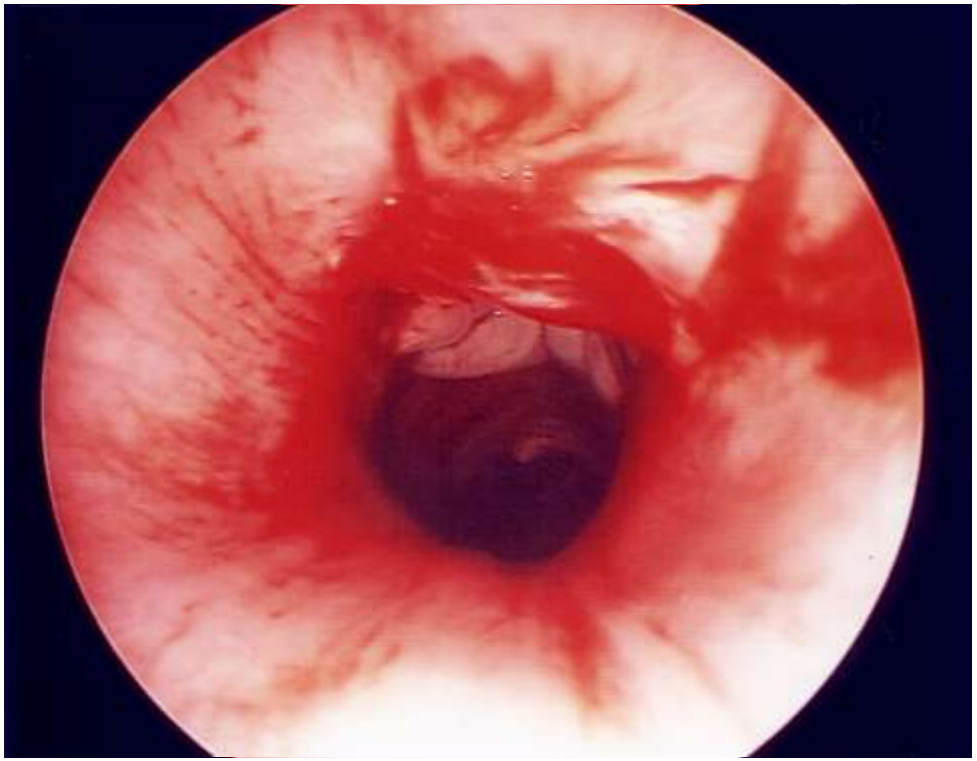
- Dislodgement
  - Post op and late
  - Tapes
  - Ventilator patients
    - Flexible connector

Complications

- Pneumothorax/mediastinum
- Subcutaneous emphysema
- Tube too long
  - coughing or decreased left air entry
- Obstruction not relieved
  - malacia or stenosis beyond tube
- Erosion - rarely

Decannulation

Always scope prior to decannulation to check for suprastomal collapse/granulation



Ward Decannulation Regime

Day 1 Downsize to 3mm Portex

Day 2 Block for 12 hours. If tolerated extend to 24 hours. Physio/ 0_2

Day 3 Decannulate and observe on ward

Day 4 Observe off ward

Day 5 Discharge. OPD appointment 6/52

Surgical decannulation

- For suprastomal collapse (20%)
- Stoma excised and the closure hitched up to straps over ET tube
- Intubate 24 hours and extubate with steroid cover
- If significant collapse may need cartilage

Tracheocutaneous fistula excision

- 50% persist 1 year
- Check it is not functional
- Excise, taking care not to tent up and therefore excise healthy trachea
- Close in layers
- ? Muscle interposition

Avoiding tracheostomy

Summary

- **Avoid** if possible - especially SGS
- Think about potential **difficulties** in advance - eg stovepipe trachea
- **Low** tracheotomy if possible
- **Special** solutions for special patients
- More **difficult to get rid of** than to put in