

## T5-9: Anaesthetic management for percutaneous tracheostomy insertion

**Objective:** A proportion of COVID-19 patients require a period of prolonged ventilation, and will therefore benefit from tracheostomy insertion. This is an aerosol generating procedure that requires planning and team working.

- 1 **Start preoxygenation**
- 2 **Check tracheal tube**
  - Check type, size, and length at the teeth
- 3 **Prepare drugs**
  - Give muscle relaxation, analgesia, and sedation
- 4 **Prepare patient**
  - Have surgeon position patient for procedure
  - Scan neck and mark landmarks (see *Ultrasound markings*)
  - Measure and mark insertion safe zone (see *Insertion 'never above' lines*)
  - Check with the surgeon that the planned insertion is beneath the 'never above' line (and ideally 2-2.5cm beneath to ensure beyond the end of the tracheal tube)
  - Check tube cuff pressure
- 5 **Insert videolaryngoscope**
  - The tube cuff **MUST** remain inflated during the following procedures
  - Visualise the larynx and withdraw the tube until cuff just herniates through the vocal cords
  - Remove the videolaryngoscope
- 6 **Insert fiberoptic bronchoscope and visualise tube tip**
  - The surgeon may start the procedure; check for tenting in the midline of the trachea
  - If you can see tenting go to step 7
  - OTHERWISE —
  - Stop the procedure and check if the cannula can be inserted at a point lower in the neck; if yes move to lower point then go to 6
  - OTHERWISE —
  - Withdraw the tracheal tube by 1cm under vision then go to 6
- 7 **Start the tracheostomy procedure**
  - Remove flexible bronchoscope once guidewire visualised in trachea
  - Pause ventilation prior to removal of the Rhinodilator
  - Restart ventilation when circuit switched to tracheostomy and cuff inflated
  - Check for desaturation and restart ventilation if needed

### Minimum equipment list

- Drugs**
- Muscle relaxant, analgesia, and sedation
  - Emergency drugs (metaraminol, atropine, adrenaline, fluid bolus)
- Airway Equipment**
- Ultrasound and probe cover
  - Marker pen and ruler
  - Tracheostomy tube of predicted size and one smaller and tracheal tube clamp
  - Videolaryngoscope and freestanding screen
  - Functioning suction
  - Bronchoscopy equipment
    - Flexible bronchoscope and stack
    - Breathing circuit bronchoscopy angle piece
  - Emergency airway equipment
    - Mapleson C circuit and facemask
    - Airway adjuncts
    - Supraglottic airway
    - Tracheal tube x 2 and syringe

### Ultrasound markings

- Identify and mark the following structures:**
- Mark the 'never above' line (the predicted lowest extent of the tube cuff)
  - Midline of the trachea
  - First and second tracheal rings
- Note the following:**
- Presence of any vessels in the operating site
  - Depth of the trachea

### Insertion 'never above' lines

Measure from the top of thyroid cartilage to the distance in the table below to determine the 'never above' line. Insertion above risks damage to the tube cuff.

Tube size	SealGuard Tube	Portex Standard Tube
7	4cm	2.5cm
8	5cm	3.5cm
9	5cm	-

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Action Card (v1-0)  
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