The essential principles of tracheostomy care

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Key publications
Tracheostomy guidelines

A tracheostomy is a surgical opening in the anterior wall of the trachea to facilitate ventilation; the opening is usually maintained by use of a tracheostomy tube. The procedure may be performed either surgically or by a percutaneous method.

St George’s Healthcare is a national leader in tracheostomy guidance and the following pages, provided specifically for healthcare professionals performing tracheostomy or caring for tracheostomised patients, outline the most current guidance provided by the Trust.

For more information about these pages please contact Deborah Dawson on email: deborah.dawson@stgeorges.nhs.uk
Aims

- Stoma Care
- Inner cannula management
- Infection Control
- Secretion Management
- Humidification
- Communication & Swallowing
- Emergency Situations
Dressings

- Hyperoxygenate and suction prior to procedure if required
- Neck slightly extended, then flex to fasten holder
- Daily inspection of stoma, swab if looks infected
- Clean with normal saline
- Apply thin, pre-cut keyhole dressing and holder
- If excoriated film forming acrylate barrier
- Document
Inner cannula care

- Should be used routinely
  - What about patients on Mechanical Ventilation?
- Inspected four hourly
- Cleaned with sterile water or saline
- Dispose of cleaning fluids in a sluice
- Kept in a dry sealed box
- Documentation
Cuff management

- Check once a shift or if tube or patient moved
- Methods:
  - Cuff manometer (20-25cmH2O)
  - Minimal occlusion volume
  - Continuous measurement
- High pressure – potential causes
  - Too small tube
  - Poor tube positioning
  - Over-inflated cuff
  - Reduced lung compliance
Impaired humidification

- Increased viscosity of mucus
- Depressed ciliary function
- Increased risk of infection
- Micro-atelectasis
  - Impaired secretion removal
    - Obstruction of major airways
    - Tube blockage
    - Decreased cough
    - Infection
Humidification

- Systemic hydration
- Heat-moisture exchanger (HME)
- Heated water humidifiers
- Venturi humidifiers (cold water)
- Nebulisation
- Mucolytic agents
- Buchanon Protector
Secretions/Suctioning

- Assess need
  - Respiratory vs. oral
  - Cough vs. yankauer
  - Invasive reserved for patients unable to clear own secretions

- Pre-oxygenate
- 10.6-16kPa vacuum
- ID mm -2x2 (cuffed tubes)
- Non-fenestrated inner cannula
- Insert 10-15cm, stop if resistance felt and withdraw 2cm
Oral hygiene

- Daily assessment of mouth
- Twice daily oral care
- Toothbrushing
- 2% Chlorhexidine gel QDS
- Cleaning dentures
- Lip salve
- Oral fluids where possible to maintain saliva production (Cuff up or down?)
Swallow

- Cuff will interfere with swallowing mechanics of larynx
- The muscles can waste if not used
- Predictors of swallowing difficulty:
  - Head and neck surgery
  - Lower cranial nerve palsy
  - Clinical signs of aspiration
  - Weak wet or gurgly cough during trials of cuff deflation
Speaking valve
Emergency Scenarios

- Functioning suction facilities
- Appropriate sized suction catheters
- Yankauer sucker
- Adult bag-valve-mask with reservoir with tubing
- Oxygen
- Spare tracheostomy tubes (one of the same size and one a size smaller) usually the same type but must be a type that can easily be inserted in an emergency situation
- Tracheal dilators
- Tracheostomy disconnection wedge
- Water soluble gel
Emergency Tracheostomy Management

- **Patent Upper Airway**
  - Call for expert airway help – Anaesthetist bleep 6111 and ENT SpR – call switchboard to aircall 56818
  - **Is the patient breathing?**
    - **NO**
      - Call Resuscitation Team 2222
      - CPR if no pulse / signs of life
    - **YES**
      - **Assess Tracheostomy Patency**
        - Can you pass a suction catheter?
        - Deflate the cuff (if present)
        - Look, listen and feel at the mouth and tracheostomy
        - Is the patient stable or improving?
          - **YES**
            - **Remove the tracheostomy tube / cover stoma**
              - Look, listen and feel at the mouth and tracheostomy. Ensure oxygen re-applied to face
            - **Remove the speaking valve or cap**
              - Remove inner tube / check patency
              - Some inner tubes need re-inserting to connect to breathing circuits
          - **NO**
            - **Continue ABCDE assessment**
    - **Is the patient breathing?**
      - **NO**
        - Call Resuscitation Team 2222
        - CPR if no pulse / signs of life
      - **YES**
        - **Continue ABCDE assessment**

- **Primary Emergency Oxygenation**
  - Standard Oral airway manoeuvres
    - Cover the stoma (swabs / hand). Use: Bag-valve-mask
    - Oral or nasal airway adjuncts
    - Supraglottic airway device e.g. LMA
  - Tracheostomy Stoma ventilation
    - Paediatric face mask applied to stoma (in Resus Trolley)
    - OR LMA applied to stoma (in Difficult Airways Trolley)

- **Secondary Emergency Oxygenation**
  - Attempt Oral intubation
    - Prepare for difficult intubation
    - Uncut tracheostomy, advanced beyond stoma
  - Attempt intubation of Stoma
    - Small tracheostomy tube / 6.0. cuffed ETT
    - Consider Aintree catheter and fiberoptic scope / Bougie / Airway exchange catheter

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Emergency Laryngectomy Management

- **Patient breathes through neck: no upper airway**
- **Patient cannot be oxygenated via the mouth or nose**
  - Call for expert airway help – Anaesthetist bleep 6111 and ENT SpR
  - **Is the patient breathing?**
    - **NO**
      - Call Resuscitation Team 2222
      - CPR if no pulse / signs of life
    - **YES**
      - **Apply high flow oxygen to both the face and the tracheostomy**
      - **Assess Laryngectomy Stoma patency**
        - Most Laryngectomy stomas will **not** have a tube in situ
          - Remove anything covering the stoma (if present)
          - Do not remove any voice prosthesis
          - **YES**
            - **Look, listen and feel at the Stoma**
              - Can you feel Air?
          - **NO**
            - Clear any visible obstruction using forceps or suction catheter
              - Encourage patient to cough
              - The Stoma is patent
        - Continue ABCDE assessment
  - **Is the patient breathing?**
    - **NO**
      - Call Resuscitation Team 2222
      - CPR if no pulse / signs of life
    - **YES**
      - **Continue ABCDE assessment**

- **Primary Emergency Oxygenation**
  - Tracheostomy Stoma ventilation
    - Paediatric face mask applied to stoma (in Resus Trolley)
    - OR LMA applied to stoma (in Difficult Airways Trolley)
  - Attempt intubation of Stoma
    - Small Tracheostomy tube/ 6.0. cuffed ETT
    - Consider Aintree catheter and fiberoptic scope / Bougie / Airway exchange catheter

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Adapted from: National Tracheostomy Safety Project: www.tracheostomy.org.uk
Video

- https://www.youtube.com/watch?v=0dG1sEprbbE&feature=youtu.be
Thank you, any questions?