

ENDOTRACHEAL TUBE (ETT) SUCTIONING • 1/2

INTRODUCTION

- This procedure guideline is applicable to ventilated babies where a closed suction catheter system is used
- Necessary to clear secretions and to maintain airway patency, and to optimise oxygenation and ventilation in an intubated baby
- Goal of ETT suctioning should be to maximise the amount of secretions removed with minimal adverse effects
- Should not to be a routine procedure, but in response to indications

INDICATIONS

- To maintain airway patency
- To remove respiratory secretions or aspirated fluid from within the ETT
- To obtain secretions for culture analysis

EQUIPMENT

- In line/closed circuit catheter
- catheter size <0.5 diameter of ETT
- Non-sterile disposable gloves
- Disposable apron
- Sodium chloride 0.9%
- 1 mL syringe

PROCEDURE

- **Do not** attempt to carry out this procedure unless trained in the use of endotracheal closed suction catheter system

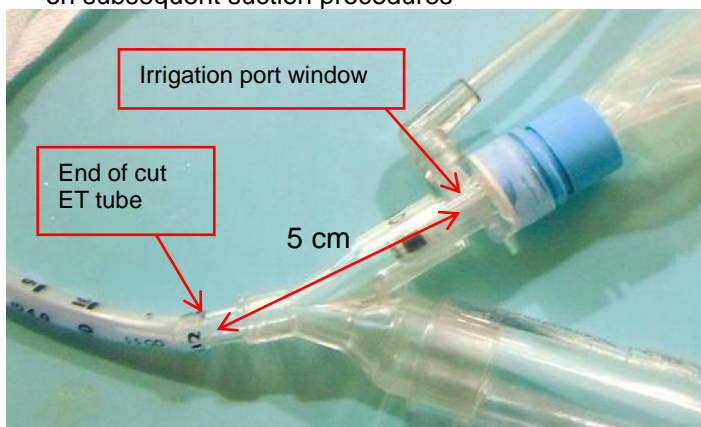
Preparation

- Wash hands and put on gloves and apron
- Auscultate chest before suctioning
- Ensure full monitoring of heart rate and SpO₂ in place
- Ensure baby is adequately oxygenated; consider increasing FiO₂ by up to 0.1 before procedure, e.g. if baby receiving FiO₂ of 0.3 (or 30% oxygen), increase oxygen delivery to up to FiO₂ 0.4 (or 40% oxygen)
- if possible use dedicated suction procedure (e.g. special procedures on Draeger VN500) which automatically enriches oxygen during suction
- Ensure baby positioned appropriately for secretion clearance and stress reduction
- Ensure closed suction device is unlocked
- Check suction pressure – maximum 13 kPa. Use lowest pressure that effectively clears secretions

Measuring catheter advancement

Method 1 (compatible with Halyard Health brand of closed suction catheters)

- Note the printed number on the cut ETT
- Add 5 cm to this to give the total distance of suction catheter advancement
- Stabilise the Y adaptor with one hand and advance catheter until calculated length is visible in irrigation port window. Catheter tip will be within 0.5–1 cm of the end of the ETT
- Note the nearest coloured band to the irrigation port window. Coloured bands allow for easy visualisation on subsequent suction procedures



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Method 2

- Stabilise the Y adaptor with one hand
- Advance catheter until printed depth numbers on catheter align with the same numbers printed on the ETT
- Catheter tip will be within 0.5–1 cm of the end of the ETT

Performing suctioning

Ensure suction catheter correctly advanced using either methods 1 or 2 (above)

- Depress thumb control valve and hold while withdrawing catheter slowly
- When tip of suction catheter reaches dome, release thumb control valve and stop withdrawing
- Procedure should take ≤ 10 sec and **the duration of negative pressure should be ≤ 5 sec**
- Repeat procedure if necessary
- Do not use sodium chloride 0.9% instillation routinely. Sodium chloride 0.9% ≤ 0.5 mL may be instilled before suctioning if secretions are thick and tenacious and cannot be extracted by suctioning alone
- After each suctioning episode ensure the closed circuit is flushed with sodium chloride 0.9% according to manufacturer's instructions

DOCUMENTATION

- Record procedure in nursing documentation, noting distance tube was passed and colour of band on catheter tube closest to this measured distance

AFTERCARE

Equipment

- Leave thumb valve in locked position when not in use to prevent inadvertent activation
- Leave catheter tip in dome between use
- Device is single use only and replace every 24 hr as per manufacturer's guidance

Monitoring

- Ensure monitoring of heart rate and SpO₂ continues after procedure
- Auscultate baby's chest after procedure and document any changes observed
- If FiO₂ was adjusted before procedure, return to original settings, or ensure baby's target FiO₂ is maintained

Reporting adverse events

- Report adverse incidents using local risk management procedure

COMPLICATIONS

- Hypoxaemia
- Atelectasis
- Bradycardia
- Tachycardia
- Blood pressure fluctuations
- Decreased tidal volume
- Airway mucosal trauma
- Dislodgement of ETT
- Extubation
- Pneumothorax
- Pneumomediastinum
- Bacteraemia
- Pneumonia
- Fluctuations in intracranial pressure and cerebral blood flow velocity

FURTHER INFORMATION

- Further details on ETT closed suction can be found in the manufacturer's guidance