

Endotracheal tube (ETT) suction

Standard

All infants who require ETT suction will have the procedure carried out safely and according to individual need and toleration.

Equipment

Working suction apparatus (set to 10-15 kPa), side-port suction catheters -catheter size should be no greater than twice the size of the ETT e.g. ETT size < 3, catheter size 5fg; ETT >3, catheter size 6fg, sterile gloves. (Use of saline: 0.9% NaCl ampoule, 1ml syringe).

Procedure

- Assess infant's need for ETT suction (see note 1). Consider timing of the treatment (see note 2).
- Ensure that monitoring equipment for HR, RR and or Sat O₂ is correctly attached to the infant and working and that the alarms are enabled. If an arterial line is in-situ, observe BP.
- Cleanse hands according to NNU policy. Equipment is assembled and placed in an accessible position for carrying out the procedure.
- To estimate the length of catheter to be inserted, note the length of the ETT at the mouth and add a length equal to the tube distance between the mouth and the connector attached to the ETT. **Remember, the catheter should not pass beyond the ET tip as it may injure the tracheal mucosa.**
- If gastric feeding has been carried out shortly before ETT suction is anticipated, consider aspirating infant's stomach prior to commencing the procedure.
- Depending on the infant's response to handling, be aware that they may require an increase in oxygen requirement to tolerate the procedure.

- Where possible 2 people should carry out the procedure; if this is not feasible loosen but do not disconnect the ventilator tubing from the ETT.
- Cleanse hands according to NNU policy.
- If felt to be required a small amount of saline can be instilled down ETT to loosen secretions.
- Apply sterile gloves.
- Disconnect the ventilator tubing from the ETT, withdraw the catheter from it's packet; the distal portion of the catheter must not touch anything prior to being introduced into the ETT; gently insert the catheter to the estimated length.
- Apply suction only as the catheter is withdrawn from the ETT. Reattach ventilator tubing and ETT. (The ventilator circuit should not be broken for any longer than 15 seconds with negative pressure being applied for approximately 5-10 seconds).
- If on assessment there is a need for further suction, allow the infant to recover before repeating the procedure using a clean catheter.
- Reposition the infant comfortably
- Document the amount, colour and consistency of obtained secretions.
- Assess infant's toleration of the procedure and document this in the appropriate notes.
- If appropriate adjust FiO₂ to pre-suction level.

Potential complications

Hypoxia, bradycardia, atelectasis, raised ICP, IVH, infection, mucosal damage, aspiration and pneumothorax.

Notes

1. Assess infants by:
 - physiological deterioration - highly variable or decreasing oxygen saturation; decreasing minute volume; flattened wave form;
 - increasing ventilatory requirements - an increasing FiO₂, rate and expiratory time; increasing PIP and decreasing PEEP;
 - auscultation - noisy breath sounds (crackles); reduced/uneven air entry between left and right side;
 - chest movement - reduced and/or uneven chest movement between left and right side;
 - behaviour - occluding ETTs may induce restlessness in infants with breathing occurring in opposition to the ventilator cycle
 - ETT - secretions pooling in the ETT and/or connector.
2. Consider timing of the treatment so that it does not coincide with other major interventions, thus reducing the likelihood of compromise in the infant. Infants receiving HFOV should have ETT suction carried out by two nurses/midwives. (This practice should be adopted where possible for all infants receiving other methods of artificial ventilation).

References

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