



Assisting with Emergency Intubation

Definition:

Emergency intubation has been widely advocated as a life saving procedure in severe acute illness and injury associated with real or potential compromises to the patient's airway and ventilation (Lecky et al, 2008).

Principles

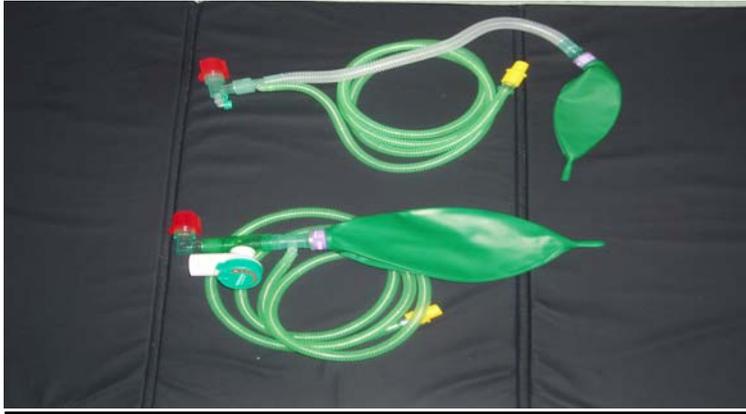
- Be aware of anaesthetic contact systems out of hours
- Stay with your patient
- Optimise oxygenation prior to attempting intubation

Equipment needed:

- Laerdal 'Ambu' Bag with oxygen tubing + reservoir
- Laerdal Mask
- Guedel Airway



- Ayres T-Piece or Water's circuit



- Monitoring including oxygen saturation
- Stethoscope
- Laryngoscope handle and appropriate blade
 - Neonate – small straight blade
 - Small child – small curved blade
 - Older child – large curved blade
- EtCO₂ monitoring
- Yankeur Sucker/Mini Yankeur
- Scissors
- Elastoplast Tape
- Endo Tracheal tube
- Syringe, when using a cuffed tube
- Manometer, when using a cuffed tube
- Bougie or Stylet
- Aquagel sachet
- Magills forceps appropriate size(may be required but not necessary in oral intubation)



Procedure

Action	Rationale
Measure Guedel Airway from the middle of the incisor to the angle of the jaw	To ensure a good fit and adequate opening of the airway
Measure the Laerdal mask by ensuring a good seal around the mouth and nose	To ensure a good seal to allow adequate air entry and pre-oxygenation of the child
Position the child on their back, towards the top of the bed, with head midline	This allows easy access for the doctor performing the procedure
Establish good 'Bag and Mask' ventilation	To pre-oxygenate the child, prior to the intubation
Prepare drugs as prescribed (See table below)	Adequate sedation and muscle relaxation allows for a less traumatic intubation
Calculate the correct size and length of ET tube (See table below)	A secure and satisfactory fit are essential to provide sufficient and effective ventilation
The doctor performing the procedure will need the laryngoscope and blade, , and suction to safely perform the intubation (Magill's forceps if nasal, not used in emergency)	Suction allows the doctor to clear any secretions from the airway, while the laryngoscope will allow them to visualize the airway to pass the ET tube smoothly
During procedure the nurse needs to observe both saturations and heart rate and inform doctor of changes promptly.	To promptly prevent hypoxia leading to bradycardia.
Once intubated, observe and auscultate the chest for equal and bilateral air entry and chest wall movement.	Adequate air entry is necessary throughout the lung fields to facilitate ventilation.
Commence EtCO ₂ monitoring	The detection of CO ₂ confirms the placement of the ET tube
When the position is satisfactory, secure the ET tube using the 'trouser leg' method, a third piece of tape allows the NG tube (if passed) to be secured also	This method of securing the ET tube is well known and tested and provides good support for the tube



If using a cuffed ET tube, inflate the cuff, to a minimal pressure necessary to prevent a leak around the tube, usually a maximum of 22mmHg (Jaber, 2007). Check pressure using the manometer (further training necessary).

Commence ventilation, and ensure an x-ray has been ordered for your patient

If child's condition allows pass a nasogastric/orogastric tube prior to intubation, alternatively wait until ventilation is established

Use of minimal pressure prevents tracheal necrosis

Chest X-ray to confirm ET tube placement

Prevent inflation of the child's stomach and regurgitation of stomach contents

Commonly used drugs for intubation

Muscle Relaxant (IV)

- Vecuronium ~ 0.1 – 0.2 mg/kg
- Suxamethonium ~ 1 – 2 mg/kg
- Atracurium ~ 0.3 – 0.6 mg/kg
- Pancuronium ~ 0.1 – 0.15 mg/kg

Sedation (IV)

- Diazepam ~ 0.1 – 0.2 mg/kg
- Midazolam ~ 0.1 – 0.2 mg/kg

Analgesia (IV)

- Morphine ~ 0.1 – 0.2 mg/kg
- Fentanyl ~ 1 – 5 mcg/kg

Anaesthesia (IV)

- Thiopentone ~ 2 – 5 mg/kg
- Ketamine ~ 1 – 2 mg/kg
- Propofol ~ 1 – 3 mg/kg

BNF for Children (2008)

Endotracheal Tube Selection

- Internal diameter (mm) = $(\text{age}/4) + 4$
- Oral tube length (cm) = $(\text{age}/2) + 12$
- Nasal tube length (cm) = $(\text{age}/2) + 15$

Davies and Hassell (2005)

Authors

Nichola Davies and Rhiannydd Poynter

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