

T.I.G.E.R.



#2 Emergency Intubation in Trauma

This guidance is intended to provide 'one safe way' of approaching this clinical scenario that will be applicable to most adult patients. It is not an algorithm and is intended to support the practice of a clinician with sufficient knowledge and experience to understand when it is not applicable to the patient they are managing and when to seek additional support from a more experienced trauma specialist. It is not for use in paediatric patients.

In all cases, please ensure that the consultant in charge of the department has been informed of any patients requiring emergency intubation following traumatic injury. It is expected that local, consultant led advice has been sought prior to referral to The Royal London Major Trauma Centre. Ensure this is documented in the clinical notes accordingly (date, time and colleagues name and grade).

Situation

- Trauma patient in the Emergency Department Resuscitation Area.
- Clinician trained and experienced in drug assisted intubation.
- Trained airway assistant available at bedside.
- Consultant aware that procedure is taking place and available to provide immediate support if required (EM/Anaes/ICM).

Patient

Trauma patient with at least one of the following criteria:

- Requirement for immediate advanced airway management.
- Requirement for ventilatory support.
- Requirement for managing secondary neurological injury.
- Requirement for immediate intervention due to clinical trajectory.

It should be recognised that not all patients are appropriate for endotracheal intubation e.g. clinical futility.

Equipment

This procedure should be carried out in the resuscitation area.

- See attached list of equipment.
- Use attached pre-intubation procedural checklist.
- Difficult airway equipment must be immediately available.

PROCEDURE

Emergency Intubation in Trauma

Preparation

- Trained Intubation Assistant (ODP) **Contact on:**
- Ensure intubation equipment is available.
- Ensure difficult airway equipment is available.
- **Allocate roles:** Team Leader, Primary Intubator, Airway assistant, Drugs, Cricoid pressure, MILS, Secondary Intubator. Not all roles may be required for every case.
- Vocalise intubating plan and contingencies with whole team.

Induction

- 2 x Intravenous access, large bore where possible, may include IO access, ensure lines flush and that fluids are attached.
- Attach monitoring: ECG, NIBP, Sats, etCO₂.
- Haemodynamic instability is a considerable risk – emergency drugs must be available and a strategy discussed to manage this before intubation commences.
- One combination of induction drugs that is safe in most patients is:
Fentanyl 3mcg/Kg: Ketamine 2mg/Kg: Rocuronium 1mg/Kg (Lean Weight Estimate)
- Other drug combinations may be used dependent on the experience of the intubator and the specific clinical requirements of individual patients.
- Particular considerations may include myocardial instability, haemorrhagic shock.

Intubation

- Optimise patient position. Maintain MILS where appropriate.
- Consider passive oxygenation with nasal specs during intubation.
- Consider cricoid pressure.
- Consider using a bougie to optimise chance of a successful first intubation.
- Restrict intubation attempts to 30s in order to avoid desaturation.
- Oxygenation is more important than intubation, consider use of LMA/I-Gel or cricothyroid access where intubation is proving difficult.

EQUIPMENT

Emergency Intubation in Trauma

- Laryngoscope x2 (checked to be working).
- MAC 4 blade (MAC 3 blade available).
- Endotracheal Tube (ETT) – cuff tested (Size 8 for most adult male patients).
- Alternative ETT – smaller size.
- Bougie (Size 15Ch for most adult patients)
- etCO₂ monitoring.
- HME filter & catheter mount.
- 20ml syringe.
- Water-based lubricant gel.
- 2 x Nasopharyngeal airways (Size 7 / 8 for most adult patients)
- Oropharyngeal airway.
- Waters circuit
- Self inflating Bag-Valve-Mask (BVM) to be available.
- Suction available and tested. Yankauer & soft endotracheal catheters available.
- McGill's forceps.
- Tube tie / Elastoplast

PRE-INTUBATION CHECKLIST

Emergency Intubation in Trauma

This is designed as a challenge-response checklist in which the intubator should be responding to the questions.

- Are there any predicted difficulties with this intubation? VOCALISE INTUBATING PLAN & CONTINGENCIES
- Is there senior help available? (Give name, role & location)
- Pre-oxygenation with anaesthetic circuit CHECK
- Nasal cannulae for apnoeic oxygenation CHECK
- Patient positioning optimised CHECK
- MILS (Allocate role if this is to be used) CHECK
- Cricoid Pressure (Allocate role if this is to be used) CHECK
- Monitoring available: RESPOND WITH CURRENT READING
 - ✓ NIBP CHECK
 - ✓ Oxygen saturation CHECK
 - ✓ ECG CHECK
 - ✓ etCO2 CHECK
- Oxygen source CHECK
- Back up oxygen source CHECK
- Suction checked and working CHECK
- Back up suction CHECK
- Tilting trolley CHECK
- OP Airway CHECK
- NP Airway(s) CHECK
- LMA/I-Gel CHECK
- Laryngoscopes x2 (Give size for first use e.g. MAC 4) CHECK
- ET Tubes x2 (Give size for first use e.g. Size 8.0) CHECK
- Lubricant gel CHECK
- Bougie CHECK
- 20mls Syringe CHECK
- Tube Tie CHECK
- IV access x2 working CHECK
- Induction Drugs (Give intended regime & allocate drug giver) CHECK
- Emergency drugs available CHECK
- Post-intubation drugs (Give intended sedation, analgesic +/- pressor regime) CHECK
- Surgical Airway Kit CHECK
- Thoracostomies / chest drains required after intubation CHECK

POST-INTUBATION CARE

Emergency Intubation in Trauma

Immediate Actions

- **Sedation:** needs to be prepared for use immediately after intubation. This will often be a propofol infusion, but might also be ketamine or other agents as judged appropriate. It is important that the choice of agent and the means of administration can be rapidly titrated to changes in blood pressure.
- **Procedures:** Insertion of chest drains, facial packing or surgical haemostasis should occur as soon as possible after the airway has been secured.
- **Ventilation:** strategies should be chosen that do not compromise haemodynamic parameters and allow for assessment and management of rising airways pressures.
- **Monitoring:** consider need for and deliver as required. Urinary catheter with urometer, arterial or central venous monitoring, ICP monitoring.

Clinical Planning

- It is frequently observed that post-intubation, trauma calls lose 'momentum'. At this point it is essential that the Trauma Team Leader focusses the activities of the team on achieving the required critical interventions for the patient.
- What are the clinical priorities for this patient ?
- **Imaging:** once critical interventions have been delivered, it is important to progress rapidly to imaging as required.
- **Surgical Intervention:** can additional interventions be provided in theatre as part of the provision of an emergency surgical procedure ?
- **Critical Care:** if the patient is being admitted to ICU, are there any other interventions required in the Emergency Department before transferring?
- **Transfer:**
 - Has the transfer been requested ?
 - Have the staff accompanying the patient been identified and briefed?
 - Is there appropriate equipment available to support the transfer?
 - Will blood products or medications be required en route?
 - Has the receiving centre been notified?