Thoracotomy

Indications

- Penetrating chest/epigastric injury with associated cardiac arrest (any rhythm)
- Blunt chest trauma with cardiac arrest and pericardial effusion within 15 minutes of arrest
- Contraindications: likely futility of procedure

Pre-procedure

Activate the 'Code Red Trauma' protocol and allocate someone to liaise with transfusion for products

Are there enough of you and allocate roles:
  2 clinicians for procedure
  1 clinician for airway
  1 clinician to lead the Trauma Team
  1 ED Nurse

Use the ED 'Quick Thoracotomy' Kit

Contact the on-call Cardiothoracics SpR (fast bleep 8490) and Consultant to inform them

Do not delay procedure for full asepsis: rapid skin preparation is sufficient in an emergency

Commence procedure only when everyone is ready

Procedure

- Position the patient in the supine position
- Apply skin prep
- Using scalpel and blunt forceps, make bilateral 4cm thoracostomy incisions in 5th intercostal space, midaxillary line, stop momentarily to see if any tension is decompressed
- Connect the thoracostomies using deep skin incision
- Use heavy scissors to dissect the intercostal muscles and pleurae on both sides leaving a sternal bridge, position a finger posterior to dissection to protect the underlying lung tissue
- Use heavy scissors or Gigli saw to cut through the sternum
- Open the chest with rib retractors or manually
- For pericardial dissection use forceps to lift the pericardium before incision to protect the phrenic nerve
- For cardiac wounds, use a finger for occlusion or braided sutures as a last resort
- If defibrillation is required the chest must be closed and energy delivered through external pads
- If cardiac massage is required, use two handed technique with gentle massage at 80 compressions per minute
- If ROSC, prepare to anaesthetise patient and clamp bleeding arteries with artery forceps

Post-procedure

- Optimise temperature, pH, correct coagulopathy, give antibiotics
- Cardiothoracics to perform definitive repair in theatres
- **Document everything in notes**