

Needle Thoracostomy for Tension Pneumothorax

Tension pneumothorax = progressive accumulation of air within the pleural space, usually due to a laceration which allows air to enter the pleural space but not return. This results in increasing pressure on the mediastinum which shifts to the opposite side, compresses major vessels and can cause circulatory compromise and cardiac arrest.

Signs of tension pneumothorax

- Respiratory distress
- Tachycardia, hypotension, hypoxia
- Tracheal deviation to opposite side
- On affected side
 - Increased percussion note
 - Absent breath sounds

Management

Needle thoracostomy

- Confirm side as above
- Sterilise area with chlorhexidine snap-swab or equivalent and apply sterile gloves
- Get a 14-16G (orange/grey) IV cannula and attach a 10ml syringe to the back port
- Insert into the **second intercostal space, mid-clavicular line** at 90°, just above the 3rd rib (to avoid the neurovascular bundle on the inferior rib surface of the 2nd rib above)
- Aspirate as you advance and continue advancing until air can be aspirated into the syringe
- After air is aspirated, keeping the needle still, advance the cannula body until it reaches the skin (keeping the needle/syringe still)
- Remove the needle and syringe
- Secure with tape

Further management

- The tension pneumothorax has now been converted into a simple pneumothorax
- A chest drain is required for definitive management

