

Needle Thoracostomy

GENERAL INFORMATION:

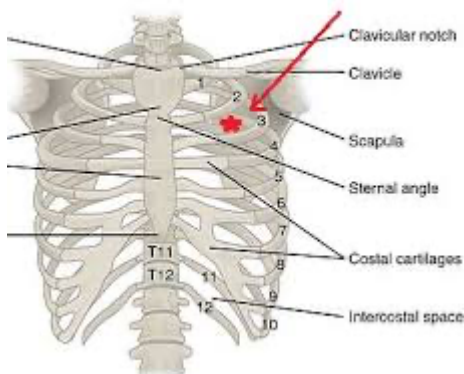
- To be performed by medical crew trained in this procedure in the unstable patient who has or is suspected to have a tension pneumothorax with imminent clinical deterioration.
- There are no absolute contraindications to needle thoracostomy.
- No data exists on the safety of the procedure in patients with a coagulopathy; if it must be performed in these situations, meticulous attention must be paid to anatomy and technique.

EQUIPMENT:

- I. Skin-cleansing agent (chlorhexidine or povidone-iodine)
- II. Needle
 - I. Adult: (14) to (16) gauge, 5cm, over-the-needle catheter (catheters without safety devices are ideal) OR ARS 10g Needle
 - II. Pediatric: (18) to (20) gauge over-the-needle catheter (catheters without safety devices are ideal)
- III. 10-mL syringe (optional)
- IV. Tape or occlusive dressing
- V. (3) way stopcock and Heimlich valve with tubing.

Scope: PARAMEDIC / CRITICAL CARE PARAMEDIC / RN PROVIDER

POLICY / PROCEDURE:



1. General Standard Orders and high flow oxygen.
2. Cover any open penetrating wound to the chest with a (3) sided occlusive dressing or HALO Chest Seal.
3. Confirm a patent airway and assess patient for signs and symptoms of tension pneumothorax.
4. Identify the second intercostal space in the mid-clavicular line on the side of the pneumothorax.
 - a. Alternative Location: Mid-Axillary Line at 4th or 5th inter-costal space
5. Prep the site with betadine/chloraprep/isopropyl alcohol.
6. Insert Needle into second intercostal space directly above the third rib at mid-clavicular line. Advance through the chest wall and approximately 5 mm into the pleural space.
 - a. Alternative Location: Insert Needle into fourth or fifth intercostal space directly above the fifth or sixth rib at mid-axillary line
7. Stabilize needle and advance plastic catheter to hub.
8. Consider the use of a syringe to aspirate trapped air and further decompress pneumothorax.
9. Secure catheter in place until chest tube is inserted.
10. Attach tubing and Heimlich valve or stopcock to prevent air from entering the chest cavity through the catheter.
11. May repeat procedure PRN recurrence of tension pneumothorax until chest tube is inserted.

Tension Pneumothorax Signs/Symptoms

- Hypotension or difficult breathing/ventilation (&/or cyanosis) with unilateral decreased breath sound, tracheal deviation, or marked SQ air.
- Anxiety, agitation and apprehension.
- Difficulty breathing.
- Decreased or absent breath sounds on the affected side.
- Increasing difficulty in breathing (dyspnea) with cyanosis.
- Hyper tympanic percussion note over affected side.
- Unequal chest rise. Rapid, shallow breathing (tachypnea).
- Rapid heart rate.
- Unexplained hypotension.
- Hypoxia.
- Pale, cool, clammy skin.
- Decreased LOC.
- Subcutaneous emphysema.
- Presence of distended neck veins (not always seen),