

APPENDIX: 08

TITLE: NEEDLE THORACOSTOMY PROCEDURE

REVISED: November 1, 2017

A needle thoracotomy is an invasive procedure that allows for emergency chest decompression in patients with respiratory and/or hemodynamic compromise second to suspected tension pneumothorax.

I. INDICATIONS:

Suspected tension pneumothorax is evidenced by:

Signs of hypoxia / respiratory distress with decreased LOC with indications below.

- a. Absent breath sounds over affected side
- b. Hyperresonance over the affected side
- c. Distended neck veins
- d. Tracheal shift away from affected side
- e. Hypotension
- f. Trauma arrest / PEA
- g. Significant mechanism of blunt or penetrating chest trauma with any of the above
- h. JVD
- i. Intubated patients who become suddenly unstable or difficult to bag despite suctioning
- j. Patients with known rib fractures and SQ emphysema
- k. Other chest injuries including open chest wound(s), simple pneumothorax contusion, and flail chest.

II. CONTRAINDICATIONS:

Suspected diaphragmatic rupture with protrusion of bowel into chest cavity.

III. COMPLICATIONS:

- Laceration of intercostal artery / nerve
- May create a simple pneumothorax
- Bowel perforation

NEEDLE THORACOTOMY

IV. PROCEDURE:

1. Identify the insertion site:
 - a. The second intercostal space at the midclavicular line
 - b. The fifth intercostal space, anterior midaxillary line.
2. Using aseptic technique, prepare the site with Chlorhexidine swabs.
3. Using a 6 Fr Cook Catheter (or 16 gage or larger angiocath), introduce the catheter at a 90 degree angle over the **superior** aspect of the inferior rib into the desired intercostal space a “rush” of air is noted (a pop may be felt).
4. Advance the catheter over the needle and seat catheter hub against skin, remove the needle.
5. Assess the patient for improvement in clinical status.
6. Repeat as needed if you suspect catheter is occluded due to blood, tissue or movement and if tension reoccurs.

V. REFERENCE:

1. Greenwald, Johnathan. The Paramedic Manual. Englewood, CO: Morton, 1988. Pg 123-125.
2. Life Flight Network: “Patient Care guidelines” Aurora, OR 97002; Life Flight Network, LLC 2010 pp 80