

## ► Needle Thoracostomy

Needle thoracostomy may be performed to relieve a tension pneumothorax.

### » **Indications**

- Signs and symptoms of tension pneumothorax, including:
  - altered level of consciousness
  - decreased B/P; increased pulse and respirations
  - absent breath sounds on the affected side
  - hyperresonance to percussion on the affected side
  - jugular vein distension
  - increased dyspnea or difficulty ventilating
  - tracheal shift away from the affected side (often difficult to assess)

### » **Contraindications**

- Any condition other than tension pneumothorax

### » **Equipment**

- |                                     |                            |
|-------------------------------------|----------------------------|
| ✓ 12 – 14 gauge 2 – 3” angiocath    | ✓ 10-30 ml syringe         |
| ✓ One-way valve                     | ✓ Rubber connecting tubing |
| ✓ Betadine and alcohol swabs        | ✓ Sterile gauze pads       |
| ✓ Occlusive dressing/vaseline gauze | ✓ Tape                     |

### » **Procedure**

- 1) Locate the 2nd ICS in the midclavicular line on the same side as the pneumothorax (An alternate site is the fourth or fifth intercostal space, in the mid-axillary line).
- 2) Prep site
- 3) Attach syringe to 10 - 14 gauge angiocath.
- 4) Make insertion on top of lower rib at a 90° angle.
- 5) Advance slightly superior to clear rib, then back to 90° angle, to make "Z" track puncture.
- 6) A "give" will be felt upon entering the pleural space. Air and/or blood should push the syringe plunger back.
- 7) Advance catheter superiorly, remove needle and allow pressure to be relieved.
- 8) Attach one-way valve.
- 9) Apply vaseline gauze/occlusive dressing to site and cover with dressing.
- 10) Secure catheter and one-way valve.
  - a. criss-cross taping for catheter.
  - b. tape down to prevent leakage.
  - c. tape one-way valve in dependent position.
- 11) Reassess - expect rapid improvement in clinical condition and breath sounds.