

WEST MICHIGAN REGIONAL PROTOCOL

PLEURAL DECOMPRESSION PROCEDURE

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Purpose: To provide the procedure for needle decompression of a tension pneumothorax.
This procedure is for Paramedic use only.

I. Indications

- A. Tension Pneumothorax, which is an imminent pre-arrest (PEA) condition
 - 1. Decompression of a tension pneumothorax may be performed if signs and symptoms of tension pneumothorax are noted and hypotension or loss of pulses occurs. Signs and symptoms:
 - a. Diminished or absent unilateral breath sounds
 - b. Tracheal deviation (often a late sign)
 - c. Tachycardia
 - d. Hypotension
 - e. Paradoxical pulses (decrease with inspiration)
 - f. Distended neck veins
 - g. Respiratory distress
 - h. Intubated patients that get progressively more difficult to ventilate
 - i. Mechanism consistent with tension pneumothorax
 - 2. Decompression MUST NOT BE PERFORMED for a simple pneumothorax.
- B. Other special circumstances by direct physician order
- C. If there is any doubt about the presence of a tension pneumothorax, CONTACT MEDICAL CONTROL.

II. Technique

- A. Utilize universal precautions.
- B. Evaluate and maintain the airway, provide oxygenation and support ventilations.
- C. Procedure:
 - 1. Gather equipment
 - a. Large bore IV catheter - 16 ga or larger diameter, 3-3½ inch
 - b. Betadine swabs
 - c. Dressing and tape
 - 2. Identify landmarks
 - a. Anterior approach
 - 1) Mid-clavicular line (MCL)
 - 2) Second or third intercostal-space (ICS) - Feel for rough area on sternum at 3/4" below suprasternal notch. This is the Angle of Louis and should correspond to the area of the second or third rib. Also, count the ribs to assure proper location.
 - 3. Prep the area with Betadine
 - 4. Remove flash chamber cap from angiocath
 - 5. Insert the catheter over the top of the rib until air rushes out. Remove needle, leaving catheter in place.
 - 6. Reassess breath sounds and patient's condition (patient's condition should improve almost immediately).
 - 7. Secure catheter with tape.
 - 8. Remember that the patient may need to have both sides of chest decompressed due to bilateral pneumothoraces.

P III. Possible complications of procedure

- A. Pneumothorax
- B. Hemothorax
- C. Dyspnea
- D. Cardiac tearing
- E. Hypotension

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F. Shock

NOTE: ***REMEMBER** to go just above the rib due to all of the major structures (arteries, veins, and nerves) which lie below the rib. The closer you stay to the top of the rib, the less chance of complication

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