

General Medical Procedures

Pleural Decompression Procedure (ALS)

This policy outlines the indications and technique for pleural decompression. Clearance to perform this procedure in the Washtenaw/Livingston Medical Control Authority will be accomplished by an inservice during orientation for new personnel provided by the ambulance service. The ambulance service will notify the medical control authority of all new personnel cleared for this procedure.

Indications

- A. Tension Pneumothorax (not simple pneumothorax).
- B. For patients who remain in PEA after treatment for Hypovolemia and Hypoxia has been unsuccessful*
- C. Under special circumstances by direct physician order.
- * Since tension pneumothorax is a treatable cause of PEA, bilateral needle thoracostomy should be considered.

Presentation of Tension Pneumothorax

A tension pneumothorax will have at least one of the following:

- 1. Severe respiratory distress in the conscious/breathing patient with hemodynamic compromise.
- 2. Difficult ventilation in the unconscious/apneic patient in the presence of a correctly positioned endotracheal tube.
- 3. Hypotension caused by impairment of venous return with either respiratory distress or difficult ventilation through a correctly positioned Endotracheal Tube.

Circumstances which favor development of tension pneumothorax include chest trauma, severe bronchospasm, and barotrauma in the intubated patient. If these patients deteriorate, a tension pneumothorax should be considered.

Signs/Symptoms of Tension Pneumothorax

- a. Severe respiratory distress or difficult ventilations.
- b. Diminished or absent breath sounds with a properly positioned endotracheal tube. (Note that right mainstem bronchus intubation can mimic a left sided pneumothorax!)
- c. Tracheal deviation (not always present).
- d. Signs of shock including tachycardia, hypotension, anxiousness, pallor, cyanosis, diaphoresis.
- e. Subcutaneous Emphysema (not always present but if present strongly suggests either a simple pneumothorax or a tension pneumothorax).
- f. Distended neck veins (unless hypovolemic).

Technique

- A. Place patient on maximum available oxygen
- B. Assemble equipment.
 - 1. 14 or 16 ga IV catheter
 - 2. Approved antiseptic solution
 - 3. Dressing and tape
 - 4. Flutter valve if available
- C. If intubated ensure adequate E.T. tube placement.
- D. Identify landmarks: (on side of diminished breath sounds)
 - 1. Mid-clavicular line
 - 2. The second intercostal space is between the second and third ribs. The second rib can be felt just inferior to the clavicle. The second rib is adjacent to the angle of Louis, which is the prominence at the sternal edge approximately 2 cm below the sternal notch.
- E. Prep area with approved antiseptic solution

Pleural Decompression Procedure

- F. Insert IV catheter over the top of the 3rd rib until pleural space entered. A rush of air egressing confirms placement and diagnosis of tension pneumothorax.
- G. Remove needle, leaving catheter in place
- H. Reassess breath sounds and patient's condition (Patient should improve almost immediately)
- I. Secure catheter with tape, apply flutter valve if available.
- J. Medical Control may be contacted at any time for guidance.
- K. If uncertainty of tension pneumothorax exists contact Medical Control before procedure is begun.

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