SCOPE:
Poudre Valley Hospital EMS Division

PURPOSE: To define the use of needle decompression of the chest

Procedure Protocol: Tension Pneumothorax Decompression

Indications

A. Tension pneumothorax.
B. Traumatic arrest is an indication for bilateral needle decompression of the chest. This is at the paramedic’s discretion, and clinical judgment should be used [e.g. The patient should have a mechanism compatible with chest trauma].

Contraindications

A. Simple pneumothorax is common, is not immediately life threatening, and should **not be decompressed**. Patients with simple pneumothorax have dyspnea, chest pain, decreased breath sounds, and subcutaneous emphysema. They do not have hemodynamic collapse.

Technique

A. Clean chest insertion site with alcohol, betadine, or chloraprep. Use sterile technique.
B. Insert a 10-20 guage angiocathether in the second intercostal space, sliding just over the lower rib, in the midclavicular line. Needle guage is determined by the age of the patient, and equipment available.
C. Remove the syringe and advance the catheter over the needle.

Side Effects and Specific Information

A. **Signs of tension pneumothorax must be present** before this treatment is undertaken: They include progressive, severe respiratory distress; drum-like percussion on the affected side; hyper-expansion on affected side, tracheal shift away from affected side [May be difficult to detect], JVD [May be absent if hypovolemic], hypotension, absent lung sounds on affected side, and increasing airway resistance.
B. Only one attempt to be done per side without direct physician order.

C. Complications include pneumothorax, lung laceration, air embolism, intercostal vessel laceration, subclavian vessel laceration, pain, infection.

D. Tension pneumothorax can be precipitated by occlusion of an open chest wound with a dressing. If, after dressing an open chest wound, the patient deteriorates, remove dressing.

Protocol: Needle Chest Decompression

<table>
<thead>
<tr>
<th>Tension pneumothorax</th>
<th>EMT-B</th>
<th>EMT-IV</th>
<th>EMT-P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult and pediatric</td>
<td></td>
<td></td>
<td>SO</td>
</tr>
</tbody>
</table>

REFERENCES: