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Indications

Traumatic cardiac arrest  Often following 2 unsuccessful needle decompression attempts	Signs of tension pneumothorax with severe hemodynamic compromise:  Acute respiratory distress or failure AND/OR Hypotension not responsive to fluid bolus	Contraindications:  None
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Preparation & Equipment

Sterile gloves	Eye protection/ face shield	Chlorhexidine prep / alcohol
Scalpel	Hemostats or Kelly clamp	Skin marker

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Technique & Procedure

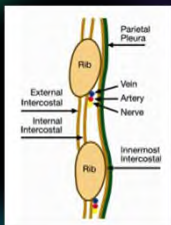
- Universal precautions, including face and eye protection.
- With arm abducted, find and mark the area at the 4th or 5th intercostal space between anterior & mid-axillary lines (within the triangle of safety).
- Clean the area as best as possible with an antiseptic swab stick in a circular motion starting from the inside and working out.



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Technique & Procedure

- Make a 2 inch transverse incision through the skin along the 5th rib, to depth of the rib.
- Utilizing Rochester Pean (Kelly), penetrate parietal pleura.
 - Penetration is accomplished with a gently, steady push while feeling for a sudden "give" or "pop"
 - Depth should generally NOT exceed 3 cm past targeted rib.
- USE CAUTION. Contents in thoracic cavity MAY BE UNDER PRESSURE. Penetration into the thoracic cavity may dramatically release this pressure. Biohazard precautions and the use of personal protective equipment are necessary.



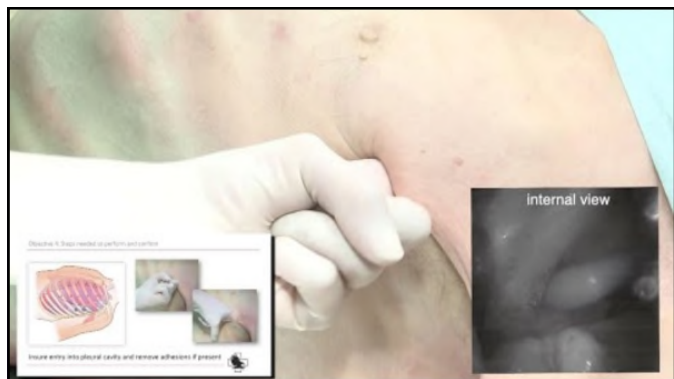
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Technique & Procedure

- Bluntly dissect intercostal muscle wide enough to carefully insert finger into pleural cavity.
- Insert finger along the track into the pleural cavity and perform sweep.
- Ensure that adhesions between parietal and visceral (if present) are gently released.
- Be careful as there may be **fractured ribs with jagged edges** that may puncture glove/skin of paramedic.
- Remove finger and monitor patient for improvement or complications.
- Each wound should be circled with a permanent marker and labeled EMS-R or EMS-L to identify incisions made by EMS in the event of autopsy or criminal investigation.
- Consider Vent Chest Seal if patient spontaneously breathing

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Complications

- Cardiac penetration and death
- Lung injury
- Chronic nerve damage (pain, numbness, intercostal muscle paralysis)
- Vascular injury

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Post-procedure Care

- Monitor for
 - Hemodynamic instability
 - Respiratory distress
 - Dropping O2 saturation
 - Bleeding
 - Incision occlusion
 - Hematoma
 - Unilateral chest wall expansion

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Questions?

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