Finger Thoracostomy

PROCEDURE

STEPS

1. Universal precautions, including face and eye protection (PPE is necessary — contents may be under pressure)
2. Arm abducted: find and mark the 4th or 5th intercostal space at the anterior (or between anterior and mid-axillary) line, within the triangle of safety
3. Clean the area with an antiseptic swab in a circular motion, inside working out
4. Make a 2–3 inch transverse incision through the skin along the 5th rib, to the depth of the rib
5. Penetrate the parietal pleura with Rochester Pean (Kelly): a gentle, steady push, feeling for a 'give' or 'pop' — depth generally NOT over 3 cm past the targeted rib
6. Bluntly dissect the intercostal muscle wide enough to insert a finger; sweep the pleural cavity, gently releasing adhesions if present
7. Remove the finger and monitor the patient for improvement or complications
8. Circle each wound with a permanent marker and label EMS-R or EMS-L; consider a vent chest seal if the patient is spontaneously breathing

BEFORE YOU START

- Indications: traumatic cardiac arrest; signs of tension pneumothorax with severe hemodynamic compromise
- Acute respiratory distress or failure and/or hypotension not responsive to fluids
- Contraindications: none, with indications present

KIT YOU NEED

- Sterile gloves, eye protection, chlorhexidine prep, #10 blade scalpel
- Hemostats or Kelly clamp, skin marking pen, chest seal

IF IT GOES WRONG

- Caution: thoracic contents may be under pressure and release dramatically on penetration — biohazard precautions required
- Fractured ribs may have jagged edges that can puncture the glove or skin of the paramedic during the sweep

Take Home Message:

Finger thoracostomy: mark the triangle of safety, incise along the 5th rib, pop the pleura, sweep, label the wound EMS-R or EMS-L.