



Unlocking  
Common ED  
Procedures

## Cutting Through the Triangle: A Review of Tube Thoracostomy In the Emergency Department

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### ✓ **Rapid Procedure Review – Tube Thoracostomy**

1. Set up chest tube drainage system.
2. Position the patient supine with the upper extremity of the side of the procedure flexed and abducted over the head.
3. Assess landmarks and demarcate the procedure site at the 4th or 5th intercostal space in the mid-axillary line.
4. Sterilely prepare procedure site.
5. Anesthetize from the skin through the subcutaneous tissue and down to the periosteum of interior rib of the intercostal space that the chest tube will be placed.
6. Using a #11 blade, make a 2-3 cm incision at the inferior border of the intercostal space so that the chest tube will enter the space over the superior border of the rib below the intercostal space.
7. Using a curved or Kelly clamp, dissect through the subcutaneous tissue down to the superior border of the rib.
8. Using the closed, blunt tip of the Kelly clamp, puncture through the pleura over the superior border of the rib and open the clamp to widen the space.
9. Insert your index finger into the space to assure you are within the pleural cavity and sweep 306 degrees to assess for adhesions.
10. Using the Kelly clamp, grasp the proximal end of the chest tube which has already clamped at the distal end and insert into pleural space using the finger which is still in the pleural space to guide insertion. The directionality of insertion will depend on the indication of the tube.

11. Attach the distal end of the chest tube to the sterile end of the drainage system and unclamp tube.
12. Secure chest tube, suture insertion site as necessary, and apply occlusive dressing.
13. Obtain post-procedural chest x-ray.

### ✓ **Rapid Procedure Review – Pigtail Catheter**

1. Set up chest tube drainage system.
2. Position the patient supine with the upper extremity of the side of the procedure flexed and abducted over the head.
3. Assess landmarks and demarcate the procedure site at the 4th or 5th intercostal space in the mid-axillary line.
4. Sterilely prepare procedure site.
5. Anesthetize from the skin through the subcutaneous tissue and down to the periosteum of interior rib of the intercostal space that the chest tube will be placed within.
6. Insert the 18 gauge introducer needle into the anesthetized skin at the inferior border of the intercostal space that the chest tube will be placed within and aspirate until fluid or air can be returned.
7. Leaving the needle in place, remove the syringe and advance the guidewire into the pleural space.
8. Hold the guidewire in place and withdraw the needle over the wire.
9. Using a #11 blade, make a small nick at the guidewire insertion site.
10. Pass the dilator over the wire and dilate the catheter tract.
11. Advance to pigtail catheter over the guidewire until it is at least 2 cm after the last hole is within the pleural cavity.
12. Connect the catheter to the drainage system.
13. Secure catheter and apply occlusive dressing.
14. Obtain post-procedural chest x-ray.



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