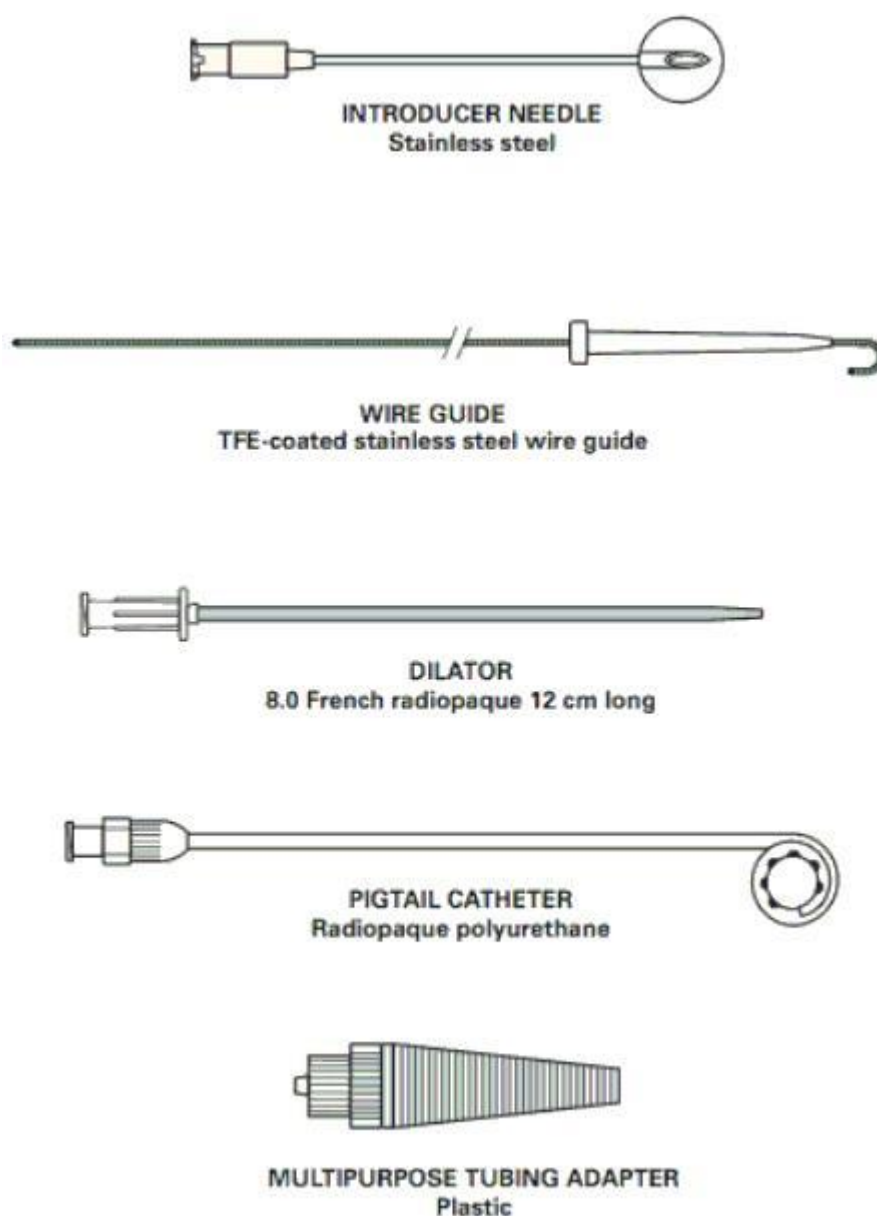


Pigtail catheter chest drain insertion

Pigtail catheters are an effective, reliable and possibly less traumatic way of treating pneumothoraces and draining pleural fluid compared to traditional chest drains. Pigtail catheter chest drains are inserted using a modified Seldinger technique as outlined below.

Equipment

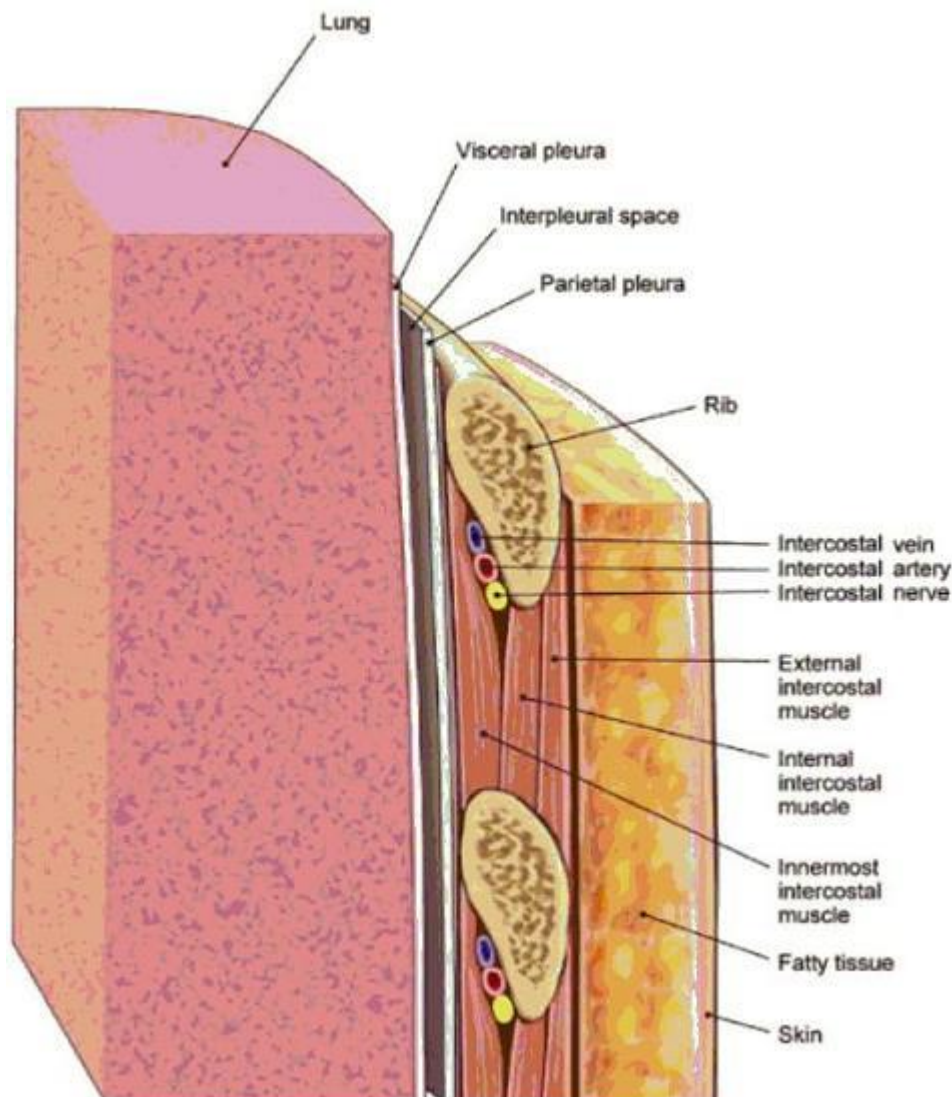
Pigtail catheter, access needle, syringe, dilator, wire guide, multipurpose tubing adaptor and preassembled drainage system.



Procedure

1. Positioning: Tilt the baby to 30-45 degrees with the affected side up, using a towel or a bean bag under their back.
2. Sterile preparation: prepare the chest using aseptic technique. The portholes of the incubator should be down to allow good access and facilitate aseptic technique.

3. Locate landmarks: aim to insert the drain into the 4th-5th intercostal space in the mid-axillary line.



4. Analgesia: give an intravenous bolus of morphine and infiltrate the insertion area down to the pleura with 1% lidocaine.
5. Needle insertion: insert the introducing needle (attached to a syringe) over the top of the rib towards the desired catheter placement. Aim anteriorly. Gently advance the needle (by no more than 2 cm in depth). Pull back on the plunger as the needle is advanced.
6. Verify placement into the pleural space by aspiration of air (or fluid) into syringe. Remove syringe once placement is verified.
7. Guide wire placement: attach the guide wire to hub of needle, gently advance the guide wire. NOTE: the wire guide should advance without impedance.
8. Remove the needle leaving the guide wire in place.
9. Dilation: thread the dilator over the guide wire, carefully twist the dilator to dilate the path and facilitate catheter introduction.
10. Remove the dilator keeping the guide wire secured.
11. Pigtail placement: introduce the catheter over the wire guide until all the portholes are inside the skin and pleural cavity. NOTE: the wire guide should always extend beyond the catheter tip.
12. Guide wire removal: slowly remove the guide wire. The pigtail catheter will now curl up in the pleural cavity.
13. Secure the tube with a stitch.
14. Prefill water bottle

15. Attach the multipurpose adaptor to the catheter and connect to preassembled drainage system. The water bottle should be prefilled to the specified line and no higher. The drainage tube should not be more than 3cm under the water (this equates to 3cm of water pressure needed to release gas/fluid). A three way tap is not necessary. Look for bubbling in the under water seal.
16. Clean off the Betadine once the procedure is complete.
17. Place a clear sterile dressing over the tube.
18. Request a Chest X-ray for verification of catheter placement and to see resolution of the pneumothorax

Top tip: think 'Normal Working Day Doctor'

- Needle
- Wire
- Dilator
- Drain