



PROCEDURE CHECKLIST

Chest drain insertion by blunt dissection

Open (blunt dissection) insertion of an intercostal drain in the safe triangle for traumatic pneumothorax, haemothorax or other pleural collections needing large-bore drainage.



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Patient reference

Date

Time

Completed by

Equipment ready

- ☐ Sterile gown, gloves, drapes, antiseptic (chlorhexidine 2% in alcohol)
- ☐ Lidocaine 1% or 2%, 10 mL and 20 mL syringes, orange and green needles
- ☐ Scalpel with a number 10 or 11 blade
- ☐ Blunt dissection instruments: curved (Kelly or Roberts) forceps, straight forceps
- ☐ Chest drain of appropriate size, without the trocar
- ☐ Underwater seal drainage bottle primed with sterile water to the marked level, tubing
- ☐ Heavy non-absorbable suture (e.g. 1-0) for securing
- ☐ Occlusive dressing
- ☐ Ultrasound machine
- ☐ Monitoring and oxygen

Before · Checks and consent

- ☐ Confirm the side and indication clinically and on imaging
- ☐ **Use ultrasound to guide the site whenever a drain is inserted for pleural fluid**
Blind insertion for fluid is associated with organ puncture.
- ☐ Obtain consent, or proceed in the patient's best interests in an emergency
- ☐ Perform a safety pause or checklist: patient, side, site, imaging, clotting, allergies
- ☐ Give analgesia; consider procedural sedation in the anxious patient only with appropriate monitoring
- ☐ Attach monitoring and give oxygen

Before · Position and mark

- ☐ Position supine or at 45° with the arm on the affected side behind the head
- ☐ Identify the safe triangle
- ☐ Mark the site in the 4th or 5th intercostal space in the anterior to mid-axillary line

Before · Asepsis and anaesthesia

- ☐ Wash hands, put on sterile gown and gloves, clean widely and drape
- ☐ Infiltrate local anaesthetic into the skin, then down to the periosteum of the rib below and over its upper border into the pleura
- ☐ **If air or fluid cannot be aspirated with the anaesthetic needle, do not proceed at that site; reassess with imaging**

During · Incision and dissection

- ☐ Make a 2–3 cm skin incision along the line of the rib, over the upper border of the rib below the chosen space
- ☐ Bluntly dissect through subcutaneous tissue and intercostal muscles with curved forceps, opening them in the line of the rib
- ☐ **Stay on the upper border of the rib to avoid the neurovascular bundle under the rib above**
- ☐ Push the closed forceps through the parietal pleura with controlled force and open them to widen the hole
- ☐ A rush of air or fluid confirms pleural entry

During · Finger sweep and insertion

- ☐ Insert a gloved finger through the tract and sweep to confirm the pleural space and check for adhesions
- ☐ **Never use the trocar to insert the drain**
- ☐ Clamp the tip of the drain with curved forceps (or guide with a finger) and advance it through the tract
- ☐ Direct the drain apically for air and basally for fluid; ensure all side holes are inside the chest
- ☐ Connect to the primed underwater seal and check for swinging and bubbling or drainage of fluid

During · Secure

- ☐ Secure the drain with a stay suture tied firmly around the tube
- ☐ Close the rest of the incision with interrupted sutures; avoid purse-string sutures
- ☐ Apply an occlusive dressing and tape the tube to the chest wall to avoid kinking

After · Checks and care

- ☐ Request a chest X-ray to confirm position and lung re-expansion
- ☐ Keep the drainage bottle below the level of the chest at all times
- ☐ **Never clamp a drain that is bubbling**
Clamping a bubbling drain can cause tension pneumothorax.
- ☐ Record initial drainage volume and watch for ongoing blood loss
- ☐ For large effusions, control drainage: stop or clamp after 1.5 L in the first hour and reassess
- ☐ Prescribe regular analgesia
- ☐ Start observation of swing, bubbling and output on a drain chart; teach the nursing team about bottle care
- ☐ Consider antibiotic prophylaxis for penetrating chest trauma drains per local protocol
- ☐ Document indication, consent, site, technique, drain size, initial drainage and X-ray findings



A drafted procedure checklist, awaiting senior review. Perform procedures only within your training, competence and local policy. It does not replace your clinical judgement.

EM Orbit · Emergency medicine, in one orbit · proc-chest-drain · red rows are the steps that must not be missed