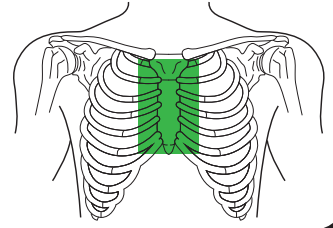


ICU PLAN A BLOCKS **Superficial Parasternal Intercostal Plane**

INDICATIONS: Traumatic sternal fracture. Post-sternotomy

TARGET: Tissue plane between internal intercostal muscle (IIM) and pectoralis major muscle (PMM) on each side of the sternum to anaesthetise the anterior cutaneous terminal branches of the intercostal nerves (T2 to T7)

LOCAL: 15-20ml each side



EQUIPMENT

- ICU-appropriate PPE
- High-frequency (10 to 15 MHz) linear array transducer
- Probe cover and gel
- Chlorhexidine 0.5%
- Local anaesthesia for skin
- If single shot: 50 mm NRFit block needle
- If continuous technique: epidural catheter kit e.g. 50mm NR fit 18-19G Touhy

ICU PROCEDURE CHECKLIST

A: Airway secure and safe **B:** Ventilation and oxygenation adjusted **C:** Cardiovascular stability, vasopressors if increased sedation **D:** Sedation and analgesia, skin infiltration for block **E:** Everyone on board. Unit quiet. No other priorities. Adequate personnel. Free of emergency call duties.

Patient focus:

- Recheck and mark the side of the block
- Check coagulation profile, platelet count and drug chart (anticoagulation)
- Consider weight-based maximum local anaesthetic dose, dose reduction in organ failure, low protein states, especially for continuous infusion, large or repeated boluses
- Valid consent or incapacity documentation. NOK informed?

PRE-PROCEDURE

- Complete ICU procedure checklist
- Patient position supine or semi-recumbent position
- Position US machine on the side opposite to the clinician
- Bilateral blocks can be performed from one side
- Ensure appropriate monitoring

PREP

- US transducer in parasagittal plane 2cm lateral to the sternal border over the 3rd & 4th ribs.
- Visualise the ribs, PPM & IIM, pleura, and identify lung sliding.
- Scan medially to the sternum observing PPM and IIM disappearing, scan laterally until the PMM and IIM are identified
- Identify the internal thoracic artery (ITA) using Doppler
- Ensure asepsis (if catheter use gown, drape and probe sleeve)

STOP

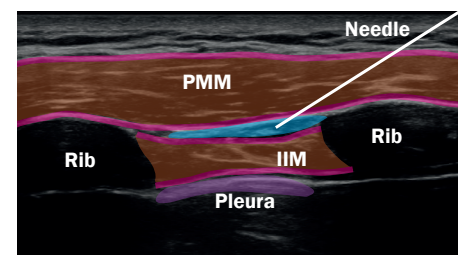
- Confirm skin mark and consent

BLOCK

- Local anaesthesia to skin
- Needle inplane from either cephalad or caudad
- Place the tip of the needle between the PMM and IIM
- Confirm negative aspiration
- Inject and observe separation of PMM and IIM and spread of LA.
- If inserting a catheter, use full aseptic technique, allow 3 cm in space, and secure

CAUTION

Risk of pleural injury
Beware of anti-platelets and anticoagulation following PPCI
Damage to internal thoracic arteries may hinder future coronary surgery



REFERENCES

Haslam et al (2021) Prep, stop, block': refreshing 'stop before you block' with new national guidance.
<https://www.ra-uk.org/index.php/prep-stop-block>



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