

Point of Technique Cardiac Critical Care

Pecto-Intercostal Fascial Block in Cardiac Surgical Patients

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- Despite an ever-growing motivation towards minimal invasion in cardiac surgery, the majority of open-heart surgery continues to employ a median sternotomy incision which results in significant acute postoperative pain with subsequently enhanced predisposition to persistent post-sternotomy pain (PSP).^[1-3]
- Ultrasound (USG)-guided pecto-intercostal fascial block (PIFB) has been recently proposed to effectively manage the median sternotomy pain wherein García Simón and Fajardo Perez suggest a decreased risk of major complications (including, vascular injury and pneumothorax) with PIFB as opposed to the transversus thoracis muscle plane block.^[1-4]
- We often perform a bilateral PIFB for our cardiac surgical patients undergoing median sternotomy, mostly after induction of general anesthesia. With the patient in a supine position, a high-frequency L 12–3 MHz linear USG probe (EPIQ7C, PHILIPS, Holland) is placed 2–3 cm lateral to the corresponding sternal edge in the 4th intercostal space [Figure 1a]. Using a 21-gauge ×100 mm Stimuplex A block needle (B. Braun, Melsungen, Germany), an in-plane approach is employed to reach the target PIFB between the pectoralis major and external intercostal muscles [Figure 1b]. Following hydro-dissection with saline to confirm the desired plane for local anesthetic (LA) injection [Figure 1c], 20 mL of dilute concentrations of 0.25–0.3% ropivacaine is injected on each side, which tends to be within the safe limits of the LA dose as per the body weight of the patient.
- Meanwhile, we practice a single-injection PIFB (akin to research groups like Wang *et al.*^[2]) and rely on the LA spread visualized under USG-guidance, independent researchers also

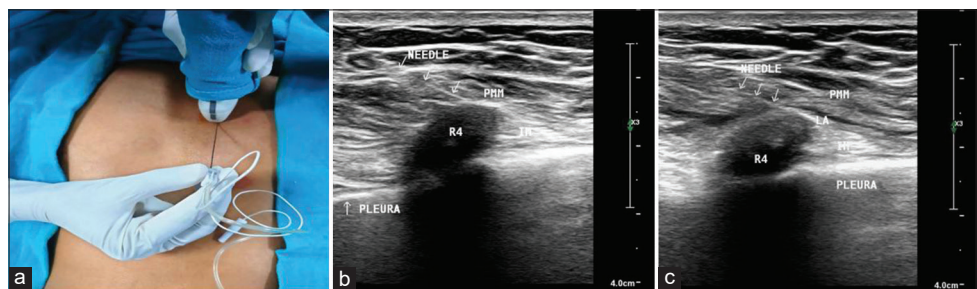


Figure 1: Depiction of the ultrasound (USG) probe placed 2–3 cm lateral to the corresponding sternal border (a); Sonoanatomy of pecto-intercostal fascial plane (PIFB) with in-plane needle tract and the tip visualized between the pectoralis major (PMM) and the intercostal muscle (b); USG-image showing the LA agent injected into the PIFB (c). One can note the glistening white structure as the pleura where R4 denotes the fourth rib.

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employ 2–3-injection PIFB technique equally dividing the LA volumes accordingly.^[1,3]

- Nonetheless, recent literature on the efficacy-safety of PIFB is encouraging wherein one can achieve adequate post-sternotomy pain relief with an acceptable degree of opioid-sparing closely governed by institutional analgesic practices.^[1-5]
- Interestingly, Sahoo *et al.* report a seminal use of PIFB in a 63-year-old lady suffering from severe persistent PSP following coronary artery bypass grafting, propounding the role of the former in chronic pain settings as well.^[6]

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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