



PARAVERTEBRAL BLOCK FOR AXILLARY LYMPH NODE DISSECTION OF MALIGNANT MELANOMA IN A PATIENT WITH CARDIOPULMONARY COMORBIDITIES

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Introduction:

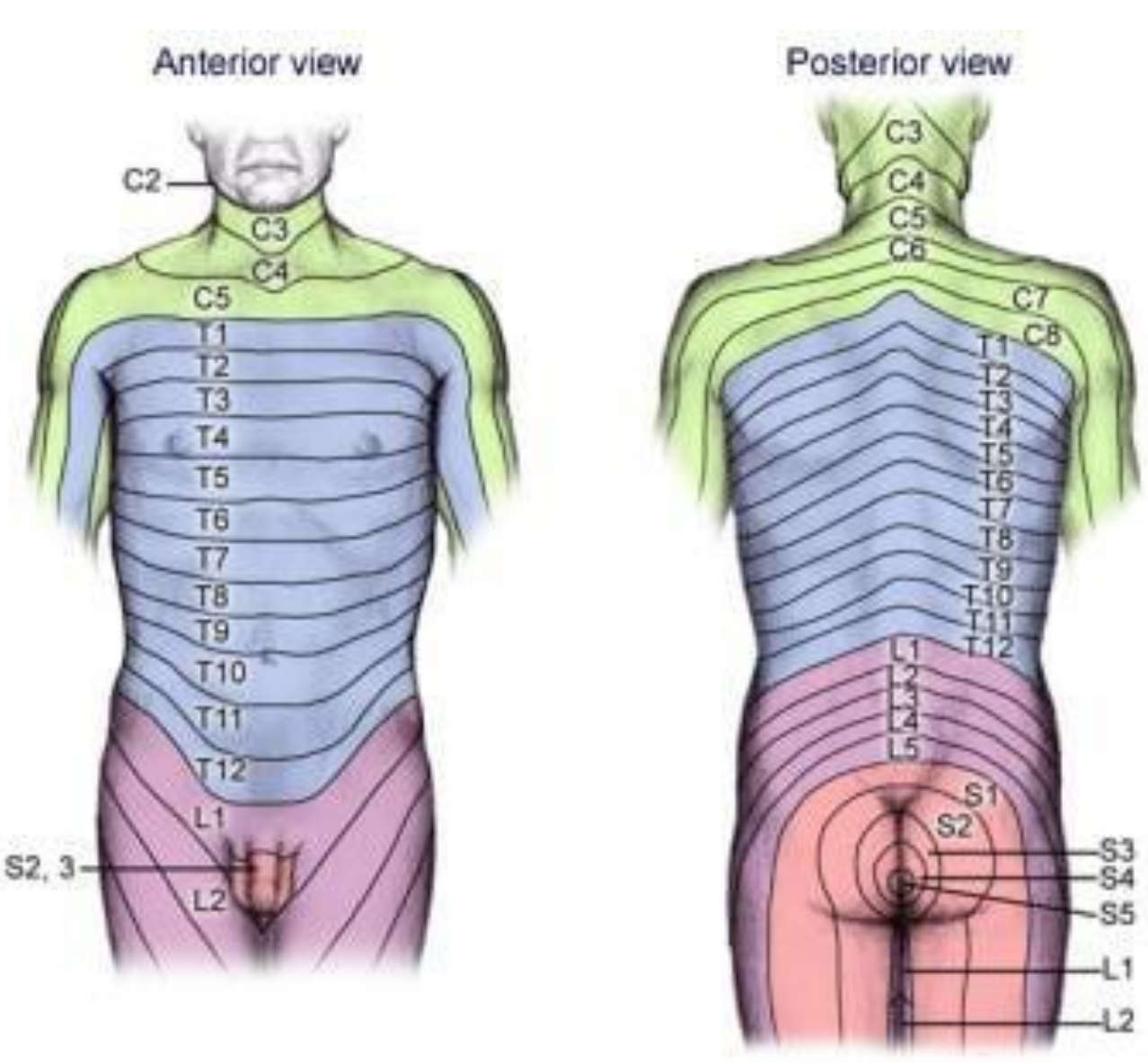
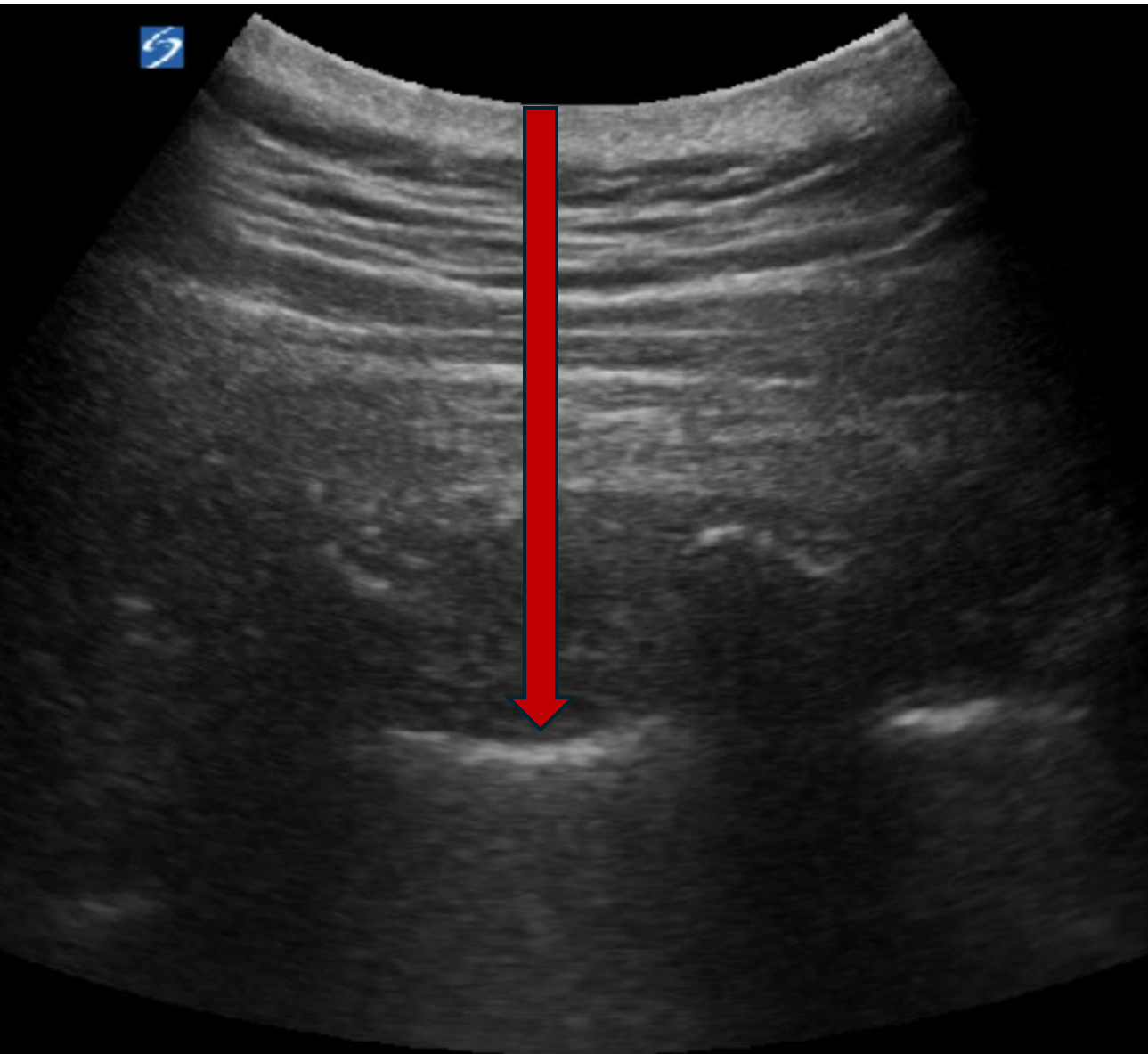
- Paravertebral blocks (PVB) have become an established regional anesthetic technique capable of providing post-operative pain control for a diverse variety of surgical procedures.
- PVBs are most often used as an adjunct to general anesthesia but may also be deployed as the primary anesthetic technique in patients undergoing breast cancer or chest wall surgery.³
- Ultrasound guidance has improved the safety and precision of paravertebral blocks, thus increasing its clinical utility.^{1,2}
- PVBs may be particularly beneficial in patients in whom general anesthesia administration is associated with an unacceptable risk profile.

Case:

- An 88-year-old male was scheduled for a wide local excision of a left forearm melanoma with axillary lymph node dissection/biopsy in ambulatory surgery center.
- PMHX: pulmonary hypertension (PASP 53 mmHg), severe tricuspid regurgitation, multivessel coronary artery disease (5-vessel CABG), persistent atrial fibrillation, and obesity (BMI 35).
- No additional pre-op tested required.
- Prominent holosystolic murmur heard day of surgery elected to change to regional anesthesia in main OR with possible admission post-op if needed.
- Ultrasound probe was placed in the sagittal orientation and an out of plane technique was utilized.
- A left-sided PVB was performed at the T1/T2 interspace with 15 mL 0.5% bupivacaine with 2.5 mcg/ml epinephrine for the axillary lymph node dissection.
- Propofol infusion (40/50mcg/kg/min) was used in the OR as well as local infiltration of 2% lidocaine for the wide local excision.
- Patient remained hemodynamically stable during the surgery, reported no pain in the PACU, and was discharged on the same day.

Technique:

- Patient was placed in the seated position.
- Using a linear US probe in the sagittal orientation the left paravertebral space at T1-T2 was identified.
- A 22-gauge, 5.0 cm needle (Pajunk SonoPlex II) was inserted using an out of plane technique.
- Small, intermittent injections of sterile saline were used to identify needle depth during advancement until the pleura was observed being pushed away from the costotransverse ligament.
- 15 mL 0.5% bupivacaine with 2.5 mcg/ml epinephrine was injected under US visualization.



Discussion:

- Optimizing anesthetic and analgesic planning requires a multidisciplinary approach that considers an individual's unique set of comorbidities, the surgical team's comfort with proposed anesthetics, and the anesthesiologist's familiarity and experience with regional anesthesia procedures.
- In patients with pulmonary hypertension, anesthetics that avoid hypoxemia, hypercapnia, acidosis, and the hemodynamic effects of positive pressure ventilation should be prioritized to mitigate perioperative risk.
- Postoperative analgesia supplied by this approach limited sympathetic nervous system activation, with accompanying increases in cardiac demand, peripheral resistance⁴, and increases in pulmonary arterial hypertension.⁵
- While there are risks associated with paravertebral blockade, thoracic paravertebral blocks should be considered as a "Plan A" anesthetic technique in patients with pulmonary hypertension undergoing axillary lymph node dissection.

References:

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