

Regional Anesthetic Approach to Subcutaneous Implantable Cardioverter Defibrillator Placement

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Introduction

- Patients who require implantable cardioverter defibrillator (ICD) placement often have significant comorbidities, increasing their risk of complications from general anesthesia.
- ICD placement is commonly done under general anesthesia because it is associated with significant peri- and post-operative pain secondary to tunneling the leads during placement, due to involvement of the highly innervated mid-axillary chest wall.
- A regional approach offers several advantages, such as avoiding the adverse effects of general anesthesia and providing an alternative in patients with difficult airways.

Case Description

- Here we present the case of a 74-year-old male with ischemic cardiomyopathy, EF 30%, and a history of tongue cancer s/p laryngectomy, chemotherapy, and head/neck radiation resulting in vocal cord paralysis, recurrent aspiration PNA, and neck tissue wasting who required an ICD for primary prevention.
- Given the pt's history of laryngectomy and difficult airways, he was at high risk for GA complications and the decision was made to use regional approach.

Management

- Parasternal fascial plane, serratus anterior, and external oblique blocks were performed (Figures 1-3). 40 mL of 0.5% ropivacaine was divided among the 3 block sites.
- Following the blocks, the patient tolerated the procedure with minimal sedation. He required 2mg of midazolam and 0.5-1.0 mcg/kg/hr of a dexmedetomidine infusion.
- The patient tolerated the procedure well with no complications and had minimal pain.
- The patient was discharged on post-op day 1 with minimal pain.

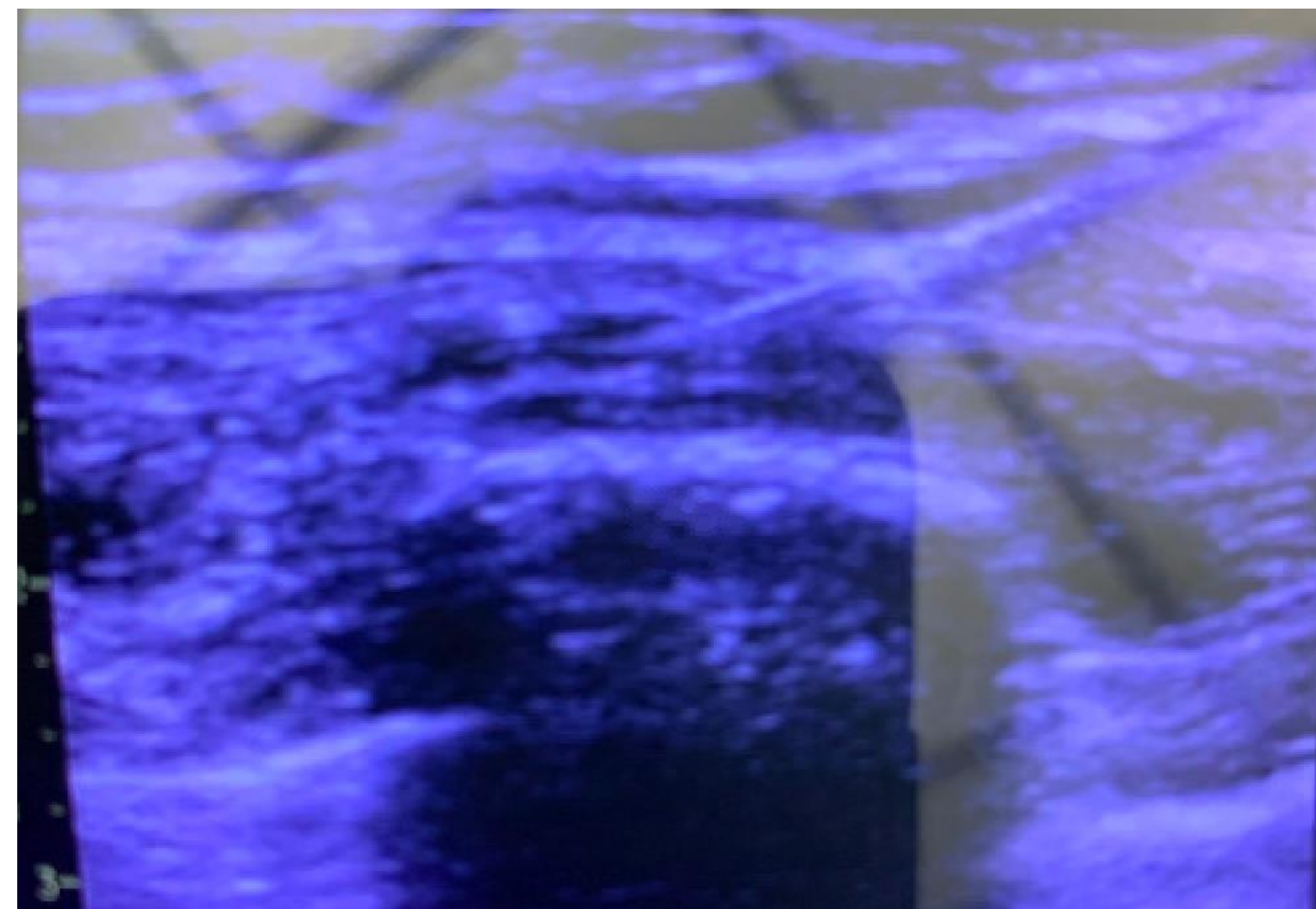


Figure 2. Parasternal Fascial Plane Block

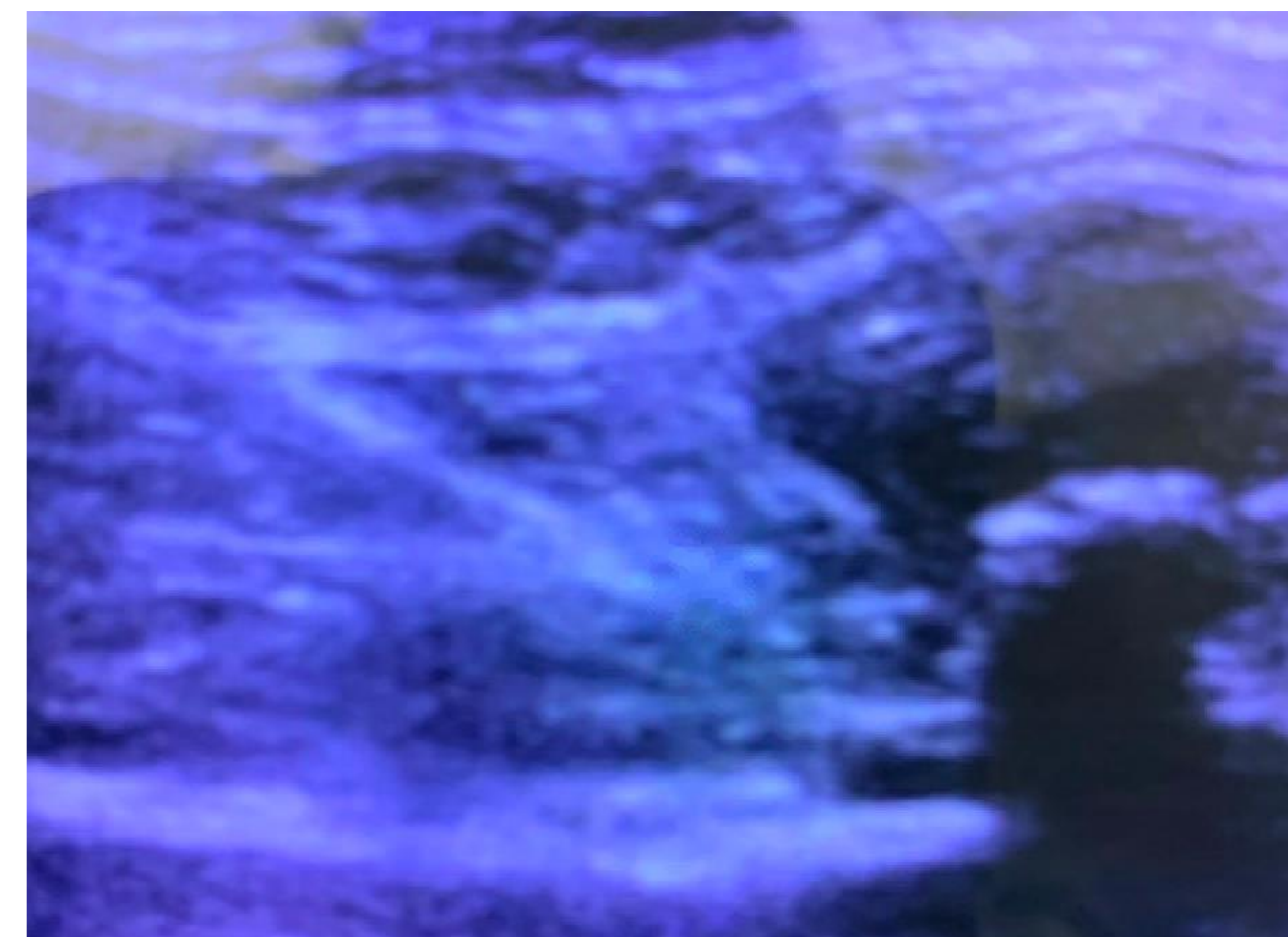


Figure 1. Serratus Anterior Block

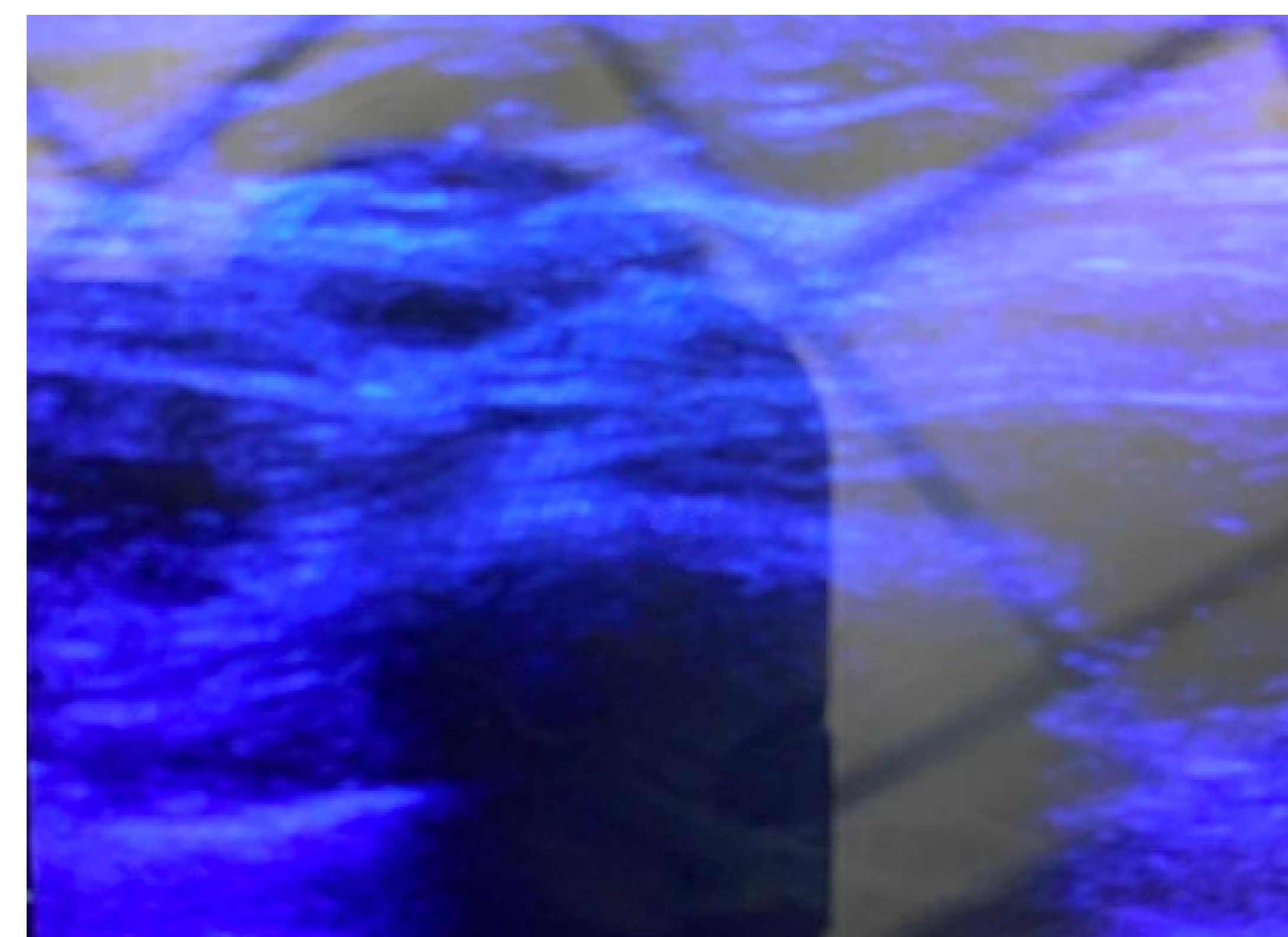


Figure 3. External Oblique Block

Discussion

- Analgesia for subcutaneous ICD placement is often difficult to obtain with local anesthetic infiltration alone [1].
- Previous studies have demonstrated that utilizing the serratus anterior and transversus thoracic plane blocks provided adequate peri- and post-operative analgesia for this procedure [2].
- A regional approach offers the benefit of reducing postoperative opioids, the most common post-operative pain control for ICD placement [3].
- Regional anesthetic approaches offer the advantage of minimizing hemodynamic instability, respiratory depression, and post-operative nausea and vomiting associated with general anesthesia.
- In this case, a regional anesthetic approach allowed a medically complex patient with a difficult airway to undergo an otherwise very painful and stimulating procedure with minimal sedation.

References

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