



Enhancing Postoperative Pain Management in Elderly Cardiac Patient: Serratus Anterior Plane Block with Liposomal Bupivacaine



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INTRODUCTION

The Serratus Anterior Plane Block (SAPB) rapidly gained popularity since its introduction in 2013 by R. Blanco et al. SAPB is a valuable technique for managing anterior and lateral to posterior chest wall pain by covering the lateral cutaneous branches of the thoracic T2-9 intercostal nerves.

PATIENT INFORMATION

- 76yo F, (67.9kg, BMI 30) with complex medical history
- 1) congenital heart disease (corrected transposition of the great arteries, dextrocardia, subaortic stenosis, aortic and tricuspid regurgitation, s/p tricuspid valve replacement)
- 2) arrhythmias (AV nodal reentry, atrial tachycardia, atrial flutter, and atrial fibrillation) managed with a bi-ventricular dual-chamber AICD/PM
- 3) lung disease (COPD, pulmonary adenocarcinoma)
- 4) chronic kidney disease (baseline creatinine of 1.7, (eGFR ~30 ml/min/1.73m²), history of hemodialysis.
- AICD/PM generator change c/b bleeding
- removal of AICD/PM, pocket washout, and placement of a wound VAC.
- Severe 10/10 left anterior chest pain, in WV site. Difficulty moving her left arm and shoulder due to pain.
- Failed medical mgmt.
- She remained on a heparin infusion.

INTERVENTIONS

Block of choice?
Deep vs. Superficial SABP?
Choice of LA and dosing?

The heparin infusion was stopped for PICC line placement on POD 5. While the patient was sedated under 50mg of Ketamine for the procedure, a superficial SAPB with 15 ml of ropivacaine 0.5% was performed, (1.1mg/kg)
Patient experienced excellent pain relief, NRS down to 5/10, and regained full range of motion in her left arm and shoulder.
POD7, GA for WV change, same technique, 5ml of 0.25% bupivacaine (12.5mg, 0.18mg/kg) with 159.6mg of 1.3% liposomal bupivacaine (2.35mg/kg) were injected. Her pain scores and subjective sleep quality improved significantly over the next day. She no longer needed any opioids for pain control.

FIGURES/IMAGES

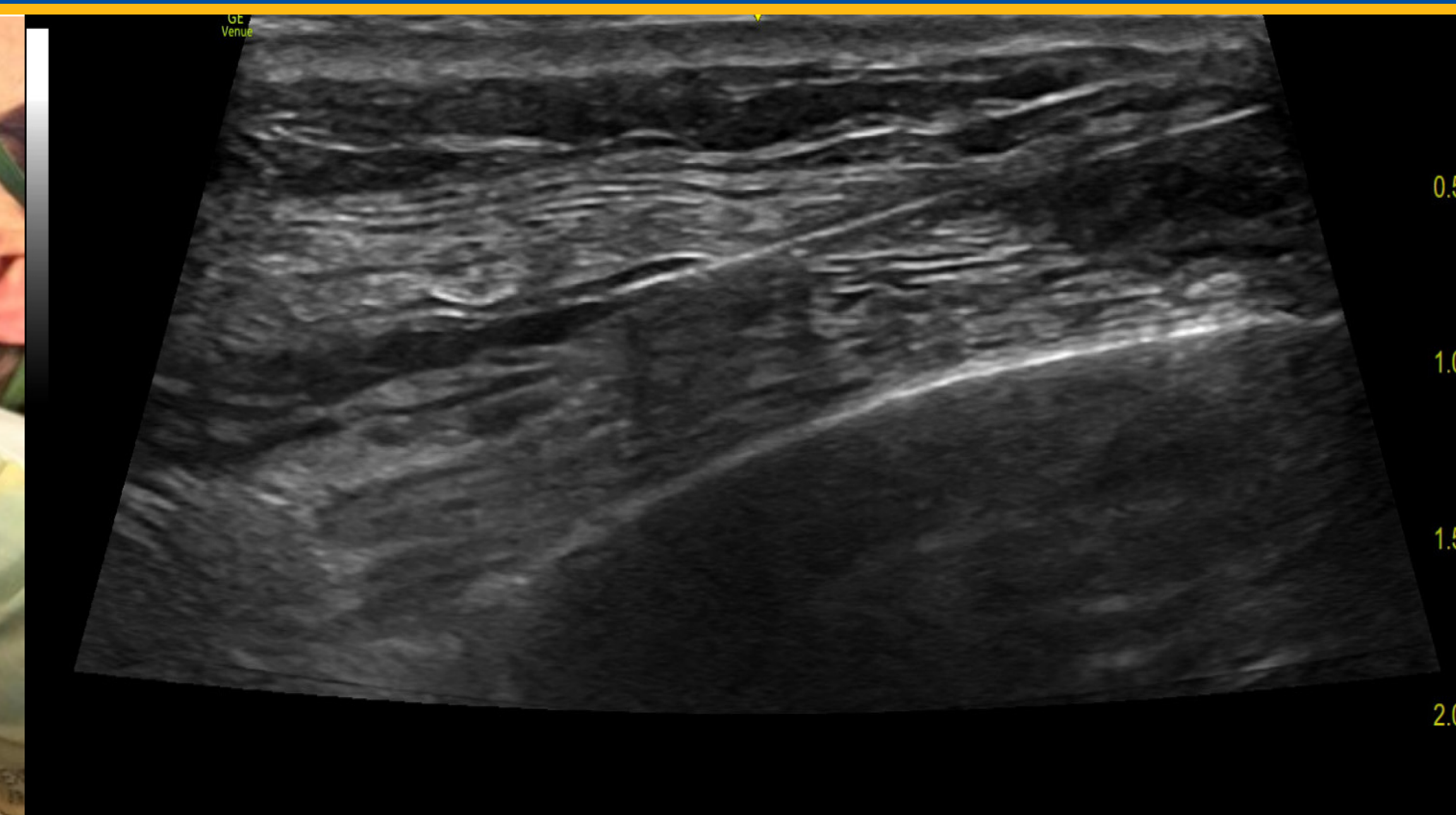


Figure left. Place the probe at the 5th rib using a linear transducer and approach the needle in an anteroposterior direction.

Figure up. Hydro-dissecting with LA in the fascial plane above the serratus anterior muscle.

DISCUSSION

- SAPB block appears to be a safe and effective analgesic modality in this geriatric patient with multiple comorbidities on anticoagulation therapy.
- Caution is warranted in liposomal bupivacaine administration in patients with renal, cardiac, and liver dysfunction, as it is metabolized by the liver and excreted by the kidney
- The liposomal bupivacaine was not studied for geriatric population. It is essential to mention that, in the event of severe local toxicity, the reversal of bupivacaine liposome has not been studied.
- We did not inject the maximum dose recommended for liposomal bupivacaine (266mg) and bupivacaine and decided to inject a dose in mg/kg appropriate for bupivacaine administration (~2.5mg/kg total).

REFERENCES

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