

Stellate Ganglion Catheter as a Bridge to Ablation in a Patient with Refractory Ventricular Tachycardia Storm

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INTRODUCTION

- The stellate ganglion block (SGB) is a widely used regional anesthesia technique used to treat complex regional pain syndrome, Raynaud's syndrome, postherpetic neuralgia, and other upper extremity pain syndromes associated with severe peripheral vascular disease. Alternatively, the SGB has been utilized as an effective therapy for refractory cardiac arrhythmias.

CASE PRESENTATION

- 62-year-old male with history of AICD for recurrent VT episodes s/p multiple ablations and SBRT, non-ischemic cardiomyopathy (EF 35-40%), and HIV on HAART, who initially presented to an outside ED in cardiogenic shock
- Found to be in refractory VT storm with approximately 22 AICD delivered shocks over the course of 48 hours. He was intubated and subsequently transferred to UCLA for HLOC and orthotopic heart/renal transplant evaluation where RHC revealed severely low cardiac indices. He was deemed not a candidate for dual organ transplantation and thus was not eligible for ECMO as a bridging therapy.
- Palliative and alternative transplant discussions were ongoing and the decision was made to consult the Acute Pain Management Service for stellate ganglion catheter placement as a bridging and palliative therapy.
- Over the next 12 hours, the patient experienced one episode of VT, which converted without AICD shock.
- On HD5, he underwent high risk VT ablation with ECMO standby. Patient was extubated and the stellate ganglion catheter was removed on HD9 given stable rhythm. He eventually received a second SBRT and was ultimately discharged in stable condition.

"The stellate ganglion block/catheter adds value not just as a therapeutic intervention, but as a tool that can aid in navigating the intricate medical and ethical landscapes of healthcare in complex patients"

Figure 1. Timeline of Significant Events

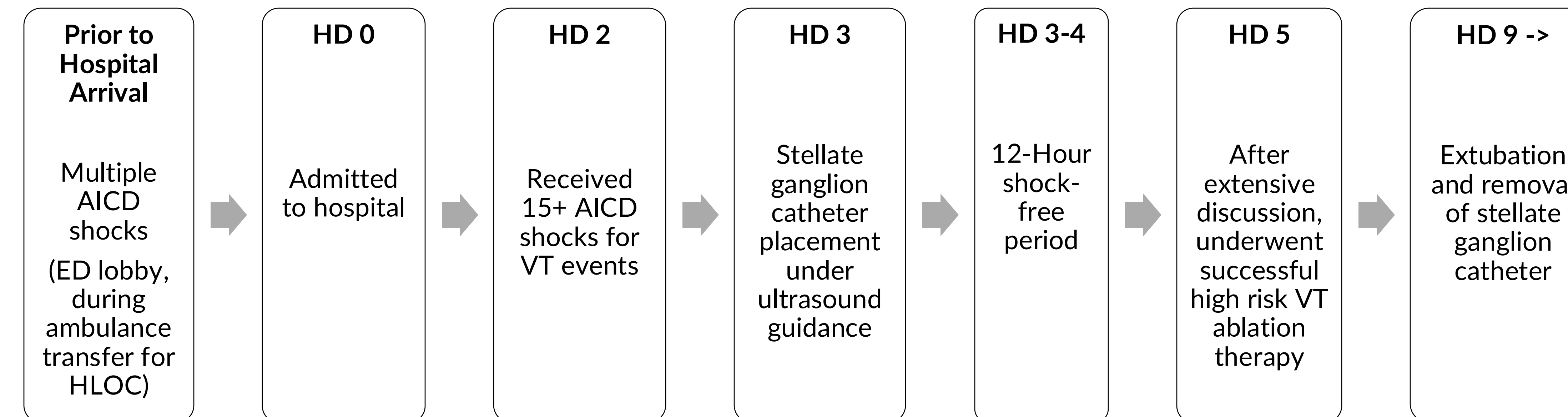
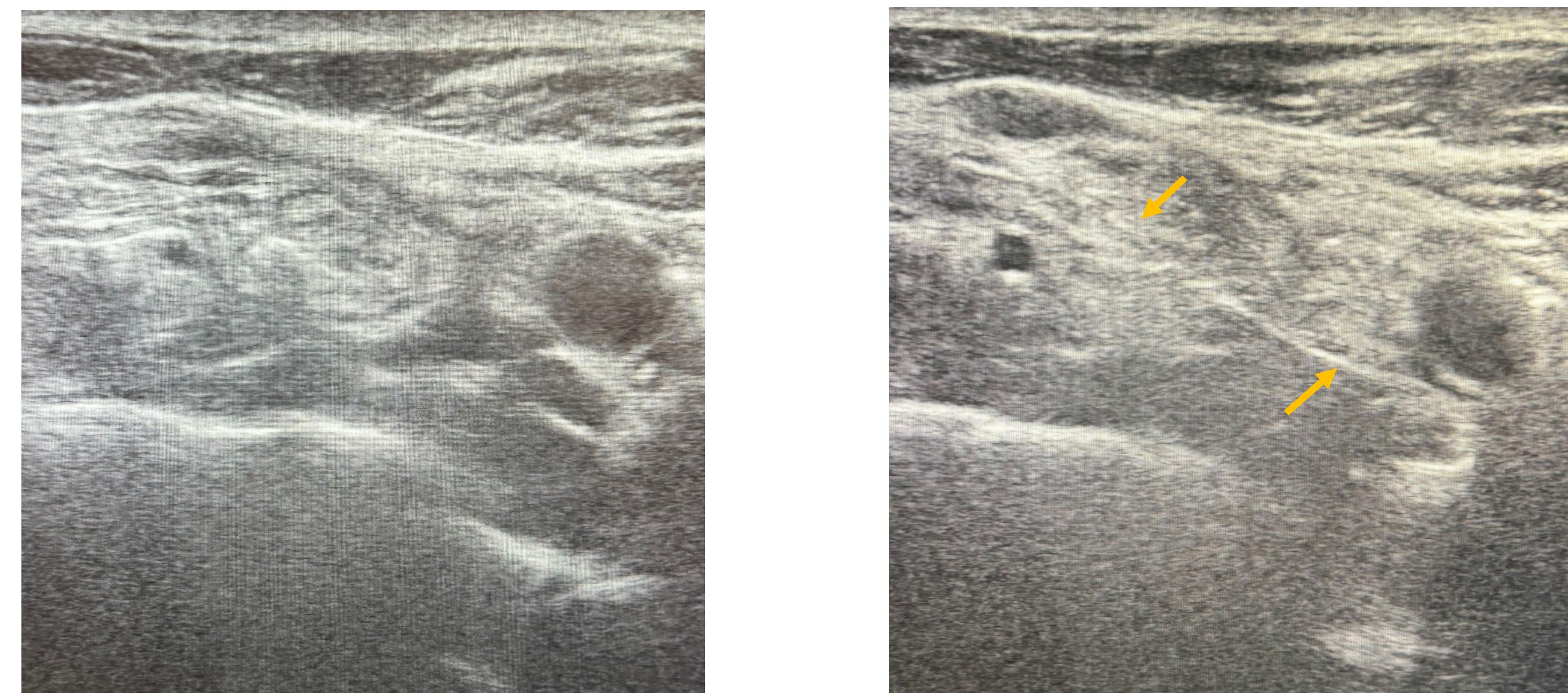


Figure 2. Ultrasound, stellate ganglion catheter placement

Stellate ganglion catheter, Bupivacaine 0.25% infusion at 3cc/hr. Visualization of the carotid artery, IJ, thyroid, trachea, Longus colli, Longus capitis muscle, prevertebral fascia, C6 nerve root, and C6 transverse process. Needle inserted in-plane beside trachea with lateral to medial direction.

Catheter (yellow arrows) reaching prevertebral fascia of Longus colli muscle located between the posterior aspect of carotid artery and tip of C6 anterior tubercle.



DISCUSSION

- In conclusion, while the stellate ganglion block (SGB) is an effective therapeutic option for managing malignant arrhythmias, its role can be much more valuable.
- This case demonstrates how SGB can serve as a critical bridging therapy in patients with complex medical, ethical, and logistical challenges. For this patient, it not only alleviated the distressing burden of arrhythmias and defibrillator shocks but also allowed for valuable time for crucial family discussions and interdisciplinary decision-making.
- The eventual positive outcomes, including definitive ablation therapy, successful extubation, and stable discharge, highlight the significant impact that SGB can have in facilitating comprehensive care planning, particularly in cases where the patient's prognosis and goals of care are multifaceted.
- Thus, the SGB should be recognized not just as a therapeutic intervention, but as a regional anesthesia technique that can aid in navigating the intricate medical and ethical landscapes of healthcare.

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