# Stellate ganglion block for refractory ventricular tachycardia: a case report

Presented by Alexandra Frank, MD and Gwynne Kirchen, MD

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**KEY TAKEAWAY: Ultrasound-guided left stellate ganglion block produced a marked reduction in VT burden, allowing subsequent atrial overdrive pacer placement.**

## INTRODUCTION

- The stellate ganglion is the major relay center for sympathetic innervation to the head, neck, upper extremities, heart and lungs.
- Stellate ganglion blocks use local anesthetic to temporarily interrupt sympathetic outflow to these regions.
- Stellate ganglion blocks are more typically employed for diagnoses such as complex region pain syndrome, neuropathic pain, vascular insufficiency such as Raynaud's and Hyperhidrosis. They can also be utilized in cases of refractory ventricular arrhythmias.

## CASE PRESENTATION

**Patient:**

58-year-old male with tobacco use disorder, alcohol use disorder, and coronary artery disease.

**Initial Presentation**

Presented with ST-elevation myocardial infarction requiring multivessel percutaneous coronary intervention.

**Hospital Course**

Severe LV dysfunction (EF 15%), cardiogenic shock requiring mechanical circulatory support, and development of a large post-infarction ventricular septal defect.

**Clinical Challenge**

Developed refractory monomorphic ventricular tachycardia (VT storm) despite multiple antiarrhythmic infusions and repeated cardioversions.

**The large VT burden precluded further pacing interventions.**

## INTERVENTION AND OUTCOME

- Stellate ganglion block performed under ultrasound guidance
- In plane approach utilized
- Performed on left side given predominance of left sympathetic chain in controlling myocardial arrhythmogenesis
- Completed with incremental injection of anesthetic just posterior to carotid artery

**No post-procedural complications noted**

**Following SGB, the patient demonstrated a marked reduction in VT burden.**

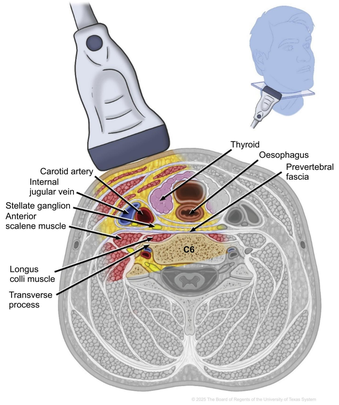
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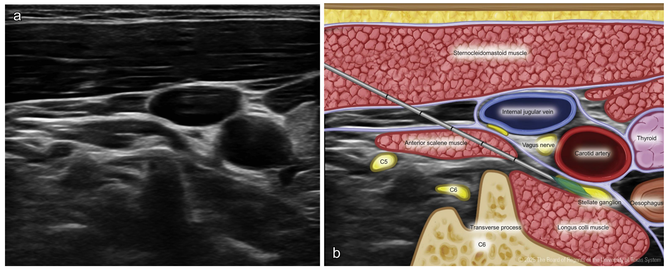
**Reduced VT burden allowed return to the cath lab for placement of an atrial overdrive pacer.**

## PROCEDURAL CONSIDERATIONS

Patient had left internal jugular central line in place ; needle able to be navigated around components.

Patient on Plavix ; ASRA guidelines recommend hold of 7 days prior to procedure, however, given patient's extensive comorbidities and ability to compress area of procedure, decision was made to perform block without holding antiplatelet therapy




## WHY THIS MATTERS

- **Refractory VT can limit the ability to pursue additional pacing-based interventions.**
- **This case demonstrates the feasibility of using an ultrasound-guided stellate ganglion block in a critically ill patient with refractory ventricular arrhythmia.**
- **The procedure provided a temporary reduction in arrhythmia burden sufficient to facilitate a more advanced intervention (atrial pacer placement)**

## References

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