Stellate Ganglion Nerve Block in Refractory Arrhythmia

Sumeet Prasad, MD; Anam Shaikh, MD; Katelyn Kanemitsu, MD; Yuriy Ivanov, DO; William R. Grubb, MD, DDS

Rutgers University, Department of Pain Medicine, New Brunswick, NJ

Introduction

The stellate ganglion block has long been used as a tool of diagnosis and treatment of upper extremity chronic pain problems. However, the presence of sympathetic nerves at the stellate ganglion also allows for the potential treatment of cardiac arrhythmias. In this case report, we will discuss the use of a stellate ganglion block in the termination of refractory ventricular tachycardia/ventricular fibrillation in a patient being evaluated for heart transplant.

Case Report

The patient was a 57-year-old male with a past medical history of HIV, HLD, CAD s/p PCI to the LAD who initially presented to an outside hospital in sustained VT/VF. He was discharged on a life vest but presented again in impending shock per the life vest and found to be in VT/VF, requiring defibrillation. His course was complicated by VF arrest requiring intubation and defibrillation, cardiogenic shock necessitating ECMO and IABP requiring frequent shocks for recurrent VT/VF.

Case Report (Cont'd)

This arrhythmia was refractory to amiodarone, lidocaine, manual carotid compression, pacing swan placement, single lead pacemaker, sedation, discontinuation of epinephrine, and a previous stellate ganglion block performed by the CVICU attending. The pain management team was consulted for a repeat stellate ganglion block.

The first attempt was performed with .25% bupivacaine with decadron and had a positive response for eight hours. On repeat attempt by the pain management team, a left sided stellate ganglion block was performed under ultrasound guidance with. 25% bupivacaine, sterile saline, and precedex and decadron adjuvants. In the same time interval, the patient was weaned off lidocaine and amiodarone with no further recurrence of VT/VF.

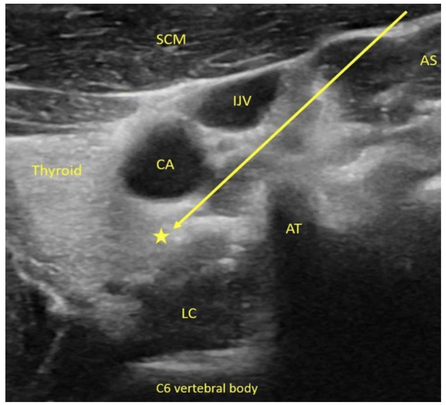


Figure 1: Ultrasound image of the stellate ganglion with needle path of the block

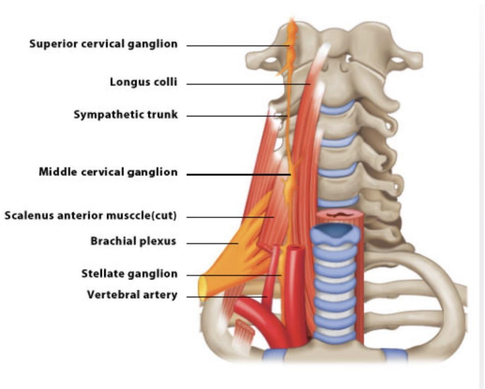


Figure 2: Anatomical diagram of structures surrounding the stellate ganglion

Discussion

The stellate ganglion block represents an opportunity for a pain management block to participate in the multidisciplinary treatment of sympathetically driven processes. Apart from its use in pain management and the aforementioned result in ablating refractory VT/VF, it may also be used in the treatment of PTSD, long covid, menopause, and other disease processes not typically associated with pain management. There is utility in further evaluation of the stellate ganglion block in other uses.

References

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