Two Sides to Every Block:

Laterality Matters in Stellate Ganglion Block for Post-Traumatic Stress Disorder

Roshni Sethi, DO; Michael Flamm, DO
NYU Langone Health, New York, NY



Introduction

Right-sided stellate ganglion block (SGB) is supported by randomized trials as an adjunctive treatment for post-traumatic stress disorder (PTSD).[1] However, some patients experience only transient or incomplete symptom relief.

Emerging evidence suggests that left-sided SGB may provide additional benefit in select individuals.[2] We present a veteran with PTSD who achieved more durable improvement following left-sided SGB after limited response to right-sided treatment.

Case report

A 40-year-old female veteran with PTSD related to military sexual trauma, chronic headaches, ADHD, anxiety, and polysubstance use disorder presented with hypervigilance, insomnia, anxiety in public, impaired interpersonal relationships, and heightened reactivity.

She underwent a right-sided SGB with partial improvement, but symptom relief was short-lived and PTSD symptoms recurred.

A subsequent left-sided SGB produced more durable improvement, including decreased hypervigilance and anxiety, with notable improvement in sleep quality. The patient tolerated both procedures without complication.

CLINICAL TAKEAWAY

Laterality matters: left-sided SGB may provide more durable relief in selected patients with PTSD

The differential response may reflect individual variation in central autonomic network lateralization. This patient's military sexual trauma differs from the predominantly combat-related PTSD populations studied in the existing SGB literature.

Right-sided SGB

Partial improvement, but symptom relief was short-lived and PTSD symptoms recurred

Subsequent left-sided SGB

More durable improvement in hypervigilance, anxiety, and sleep quality

Prospective studies are needed to identify predictors of laterality-specific response, including trauma type, sex, comorbidity burden, and baseline autonomic profiles, and to optimize patient selection.

Discussion

This case highlights the potential clinical importance of SGB laterality in PTSD treatment. Patients with incomplete or transient responses may benefit from left-sided blockade rather than discontinuation of therapy.[2]

In a sham-controlled randomized clinical trial, Rae Olmsted et al. demonstrated that two right-sided SGBs reduced CAPS-5 total symptom severity scores over 8 weeks in active-duty service members. Adjusted mean change was -12.6 with SGB versus -6.1 with sham ($p = .01$).[1]

In a retrospective analysis of 205 patients, Mulvaney et al. found that approximately 9.8% did not respond to right-sided SGB. Ten subsequently received left-sided SGB, and 9 of 10 responded favorably, with a mean PCL-5 improvement of 28.3 points.[2]

The differential response may reflect individual variation in central autonomic network lateralization. The improvement in sleep following left-sided SGB is noteworthy given the central role of sleep disturbance in PTSD symptom maintenance and functional impairment.

Prospective studies are needed to identify predictors of laterality-specific response, including trauma type, sex, comorbidity burden, and baseline autonomic profiles, and to optimize patient selection.

References

1. Rae Olmsted KL et al. Effect of Stellate Ganglion Block Treatment on Posttraumatic Stress Disorder Symptoms: A Randomized Clinical Trial. JAMA Psychiatry. 2020 Feb 1;77(2):130-138. doi:10.1001/jamapsychiatry.2019.3474.

2. Mulvaney et al. The Successful Use of Left-sided Stellate Ganglion Block in Patients That Fail to Respond to Right-sided Stellate Ganglion Block for the Treatment of Post-traumatic Stress Disorder Symptoms: A Retrospective Analysis of 205 Patients. Mil Med. 2022 Jul 1;187(7-8):e826-e829. doi:10.1093/milmed/usab056. PMID:33580677.

Materials and Methods: This case report contains no patient-identifiable information and is exempt from IRB review in accordance with NYU institutional policy. Informed consent for publication of case report was obtained from the patient. All protected health information has been de-identified.