

LETTER TO THE EDITOR

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Letter to the Editor On: Reversible Increased Anxiety Following Left-Sided Stellate Ganglion Block to Treat Posttraumatic Stress Disorder: A Case Report

In a case report by Mulvaney et al., two patients underwent right-sided stellate ganglion block (SGB) treatment, resulting in improved anxiety and Post Traumatic Stress Disorder (PTSD) symptoms. However, when they received a planned left-sided SGB, their symptoms worsened unexpectedly. The exacerbated symptoms were resolved by reverting to the right-sided SGB treatment. The severity of symptomatology was assessed using the Posttraumatic Stress Disorder Checklist for DSM-5. It is worth noting that the addition of a left-sided SGB is typically associated with a further reduction of symptoms, but in the cases presented by Dr Mulvaney, there was a significant reversal of the improvements achieved by the right-sided SGB when the left-sided “SGB” was performed. Dr Mulvaney described injections of local anesthetic at C6 and C4 levels, which should be more correctly called Cervical Sympathetic Block (CSB), as suggested in another publication. Historically, the term SGB is used when sympathetic block is performed at the C6 level only. Our clinic follows a protocol like that of Dr Mulvaney and has also seen symptom exacerbation as well following CSB; to date, all patients with exacerbation have seen resolution of increased symptoms with a contralateral block. Of note, we observed at least one patient who had a post-CSB exacerbation following the original right-sided treatment that resolved with left-sided treatment. Another patient received right-sided CSB with severe exacerbation within 15 min post-procedure; this was resolved completely by left-sided CSB within 2 h after the first procedure. We do not recommend this approach because of possible complications, yet it was done as an emergency intervention. As Dr Mulvaney reported, no known explanation

exists for the effect described. Yet, a potential explanation may exist when known facts are considered. The demonstrated neural connection between the stellate ganglion (SG) and the amygdala (structure involved in PTSD) has been shown by,¹ using pseudorabies virus tracing techniques. Increased sympathetic sprouting, known to occur because of trauma, has been shown to increase Norepinephrine (NE), which is associated with symptoms of PTSD, as summarized by.² Finally, compensatory changes were observed in contralateral sympathetic neurons of the superior cervical ganglion and terminals in the pineal gland following unilateral ganglionectomy, as³ reported. Cervical Sympathetic Block is presumed to reduce NE on the side of the procedure. Contralateral sympathetic block rapidly increases intracerebral norepinephrine and promotes compensatory sprouting through an unknown mechanism, explaining the delayed exacerbation of symptoms. We hypothesize that contralateral CSB, as a treatment for exacerbation, has a biphasic impact: immediate reduction in NE and pruning of sympathetic sprouting, as² hypothesized. It is unclear why it happens to some individuals but not others. The rare occasion of post-CSB exacerbation should not deter clinicians from utilizing this life-changing technique.

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CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY

Not applicable.

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