Letter to the Editor

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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

Mulvaney et al. tested the hypothesis that a left-sided stellate ganglion block (LSGB) injection may result in significant post-traumatic stress symptom improvement for those who did not achieve symptomatic improvement through a right-sided stellate ganglion block (RSGB) injection. In his sample of 205 patients treated with RSGB, a total of 68 patients did not provide post-intervention data and were excluded from the report. Of the remaining 137 patients, 20 did not clinically significantly respond to symptoms of PTSD with RSGB. The non-responders were offered LSGB and 10 patients underwent this intervention, which led to clinically significant outcomes for nine of these patients.

As a background, Dr. Mulvaney was the first to recommend LSGB when RSGB was not effective as a PTSD treatment, in a 2015 publication. This writer has followed his protocol in treating with a LSGB when a RSGB was not effective. To affirm Mulvaney and colleagues' results, this writer has observed similar improvements in efficacy as reported in the current publication. As such, this publication by Mulvaney et al. adds a value to the literature by suggesting that continual refinement of existing processes, such as performing LSGB if RSGB has failed, may result in enhanced clinical outcomes.

Further, I wish to clarify a statement in Dr. Mulvaney and colleagues' article, which states "Lebovits et al. first described the use of stellate ganglion block (SGB) to treat PTSD in 1990." These authors wish to provide additional context as to the origin of using SGB to address PTSD symptoms. In the 1990 article, Lebovits, Yarmush, and Lefkowitz state that much of the observed effect on PTSD symptoms via SGB was because of pain reduction. Considering the well-documented association of various psychological conditions and reflex sympathetic dystrophy (RSD) syndrome, the choice by Dr. Lebovits and colleagues to treat a pain condition with SGB is not surprising. Also, there is no evidence of the additional use of SGB to treat PTSD as being undertaken by either these study authors, or other physicians, based on this 1990 publication. The first report of PTSD treatment without concomitant pain conditions, utilizing SGB, was published by this writer (E.G.L.) in 2008. This 2008 publication was based on a prior paper describing an endoscopic clipping of the sympathetic ganglia at the second thoracic vertebra (T2) that was first reported in 1998 by Dr. Telaranta, which allowed E.G.L. to predict the potential benefit of using SGB to address PTSD symptoms. The publication of the 2008 paper by this writer (E.G.L.) which demonstrated the efficacy of SGB as a treatment of PTSD, without a concurrent pain condition, has led to relatively rapid acceptance of SGB for treating PTSD since 2008, with publications by Dr. Mulvaney in 2010 and other physicians. The reader is referred to an article by Summers et al. of Johns Hopkins University in 2016, for a detailed review of the history of SGB as a PTSD treatment option.

Finally, the selection of the right side as the location for SGB intervention was based on early understanding of right-sided amygdala overactivation, in patients with PTSD, as demonstrated by Dr. Liberzon in 2006, using functional MRI. This led to the dogmatic approach favoring right-sided intervention, as summarized by E.G.L. in a 2010 publication. Recent neurobiological evidence seems to suggest that a complex interaction of the amygdala and the insular cortex leads to a reduced dominance of laterality, paving the way to a new understanding that RSGB followed by LSGB may yield the best results, at least for some patients, as clinically indicated. As both Mulvaney and E.G.L. have emphasized in the past, it is important to keep in mind that right- and left-side blockades should not be done on the same day because of possible bilateral recurrent laryngeal block, leading to an obstruction of the airway.

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In conclusion, this writer agrees that utilizing an LSGB for PTSD in patients that are not responsive to RSGB is a logical approach. Further research into the utility in treating PTSD with RSGB and LSGB is critical, as is the need for neuroimaging studies to determine SGB effects on the brain.

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