Annals of Clinical Psychiatry, 20[4]:227–228, 2008

ISSN: 1040-1237 print / 1547-3325 online
DOI: 10.1080/10401230802435518

informa
healthcare

Letter to the Editor

Cervical Sympathetic Blockade in a Patient with Post-Traumatic Stress Disorder: A Case Report

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TO THE EDITOR:

We report our use of minimally invasive manipulations of sympathetic nerve tissue to relieve profound anxiety and related symptoms in a patient diagnosed with post-traumatic stress disorder (PTSD). A 48-yr-old male victim of armed robbery and assault was bound, gagged, and hit in the head with a gun "over 100 times." He sustained minor, closed soft tissue injuries and bruising, which healed without treatment. One week post-trauma the patient presented to his primary care physician with severe anxiety, sporadic nausea, shaking, loss of appetite, and insomnia. He was prescribed escitalopram, alprazolam, and olanzapine.

Twenty-three days post-trauma, the patient underwent psychological evaluation, at which time he described feeling as if he had "too much adrenalin" and reported having intermittent chest tightness ("like I'm having a heart attack"). He began psychotherapy, focusing on relaxation techniques; these were initially helpful, but after a few weeks he still reported having days when he felt like he was "going 110 miles per hour." The patient continued in psychotherapy but was also referred to our pain clinic, where, 55 days post-trauma, we administered a right-sided stellate ganglion block (SGB): the injection of local anesthetic (7 cc bupivicaine 0.5%) into sympathetic cervical nerve tissue at the C6 level. Immediately following the procedure, he reported that his anxiety had subsided. Over the next week, the patient significantly reduced his use of alprazolam. One week post-SGB he estimated that his anxiety level was reduced by 80% to 90%, his appetite had improved approximately 50%, and his sleep was about 25% better.

We saw the patient 32 days post-SGB, at which time his PTSD symptoms had returned. We then treated him with pulsed radiofrequency (PRF) of the right stellate ganglion. After anesthetizing the right side of his neck, we guided a 22-gauge insulated needle with a 10-mm active tip to C6 (anterior lateral position) and delivered a 500-kHz current (2 Hz/mw for 400 seconds). After the procedure, he described a "downshift from 5th to 1st gear." Three month later, the patient stated that he was still "90% improved."

Previously, we reported our use of SGB to alleviate severe hot flashes (1). Based on evidence that the stellate ganglion has links with CNS nuclei that modulate body temperature—in particular, those of the insular cortex (2)—we proposed that

SGB interrupted CNS connections with sympathetic nerves, allowing the body's temperature-regulating mechanisms to reset (3). We subsequently used PRF to relieve hot flashes.

Recent advances in imaging and labeling methods have enhanced our understanding of the neuroanatomy. MRI studies of patients with PTSD suggest that the amount of insular atrophy correlates with the intensity of symptoms (4). Pseudorabies labeling in rats has shown that the amygdala, hypothalamus, and insula are connected to the stellate ganglion via second- and third-order neurons (5). These are among the findings that allowed us to predict the effects of SGB and PRF on PTSD.

We believe these simple sympathetic manipulations deserve study, as they may provide a meaningful complement to current psychological and pharmacological treatments for PTSD, an increasingly common disorder in these increasingly traumatic times.

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