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POSTER CASE REPORT

Successful use of Cervical Sympathetic Block to treat PTSD & Alcohol Use Disorder without withdrawal symptoms or Delirium Tremens

Introduction: We present a case of a military member diagnosed with PTSD and comorbid alcohol use disorder (AUD); Cervical Sympathetic Block (CSB) was successfully used to treat both conditions. The patient acutely terminated alcohol consumption without withdrawal symptoms or Delirium Tremens.

Materials & Methods: The case report is devoid of patient-identifiable information, and it is exempt from IRB review requirements as per the Stella Center policy.

Case Description: A 45-year-old male, a retired member of special operations forces with a history of 12 deployments, was diagnosed by the VA with Post Traumatic Stress Disorder (PTSD) and AUD. His past medical history was significant for well-controlled hypertension on medications. His PCL-5 score (PTSD Checklist) was noted at 75 (0 to 85 scale), considered to be severe PTSD before treatment. He also reported drinking 1 liter of vodka per day for 10 years. CSB was performed using ultrasound guidance on the right side utilizing 8 ccs of 0.5% bupivacaine at C6 level and 4 ccs of 0.5% bupivacaine at the C4 level following a standard protocol(1). One day after the treatment, the patient reported marked relief of his PTSD and AUD symptoms, including sleep dysfunction, irritability, uncontrolled anger, and desire for alcohol. His PCL score was 25, demonstrating a complete remission of PTSD symptoms. He reported complete cessation of alcohol intake. The patient was followed for 3 years without relapse of PTSD or AUD symptoms. The last reported PCL score was 32, at a 3-year follow-up, still considered as PTSD remission. The patient also reported continued absence from alcohol and no withdrawal symptoms or Delirium Tremens (DT) at any time after CSB.

Discussion: Cervical sympathetic blocks have been successfully used since 2008 to treat PTSD, with positive results demonstrated in multiple institutions(1). What makes this presentation unique is the first report of acute cessation of alcohol use in a patient with PTSD and associated AUD without withdrawal symptoms or DT. The physiology behind this clinical finding is likely modulation of the sympathetic system by CSB. While the detailed mechanism is unknown, corticotropin-releasing factor (CRF) may play a

significant role. CRF is known to be involved in modulating sympathetic nervous response to surgical stress(2) as well production of secondary psychotic symptoms in PTSD(3). Dr. Kimbrough reported that CRF receptor system has been suggested to be critical for the emergence of anxiety-like behavior in ethanol dependence(4). CSB is theorized to reduce the sympathetic nerve fibers in the brain by Lipov(1), leading to prolonged reduction of PTSD symptoms(1). We hypothesize possible explanations of the effects seen on the above patient to be the reduction of sympathetic nerve fibers in the amygdala, which has a two-way connection to the hypothalamus(5) and cervical sympathetic ganglion(1). Hypothetically, CSB reverses the cascade of hypothalamic activation via the deactivation of the amygdala and prevents further activation, which typically leads to PTSD and DT symptoms.

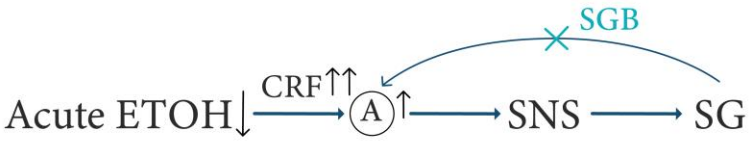

Figure 1

ETOH = Ethanol
CRF = corticotropin-releasing factor
A = Amygdala
SNS = Sympathetic Nervous System
SG = Stellate Ganglion
SGB = Stellate Ganglion Block

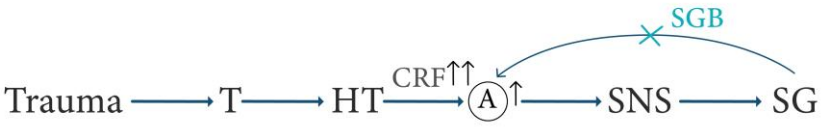

Figure 2

T = Thalamus
HT = Hypothalamus
CRF = corticotropin-releasing factor
A = Amygdala
SNS = Sympathetic Nervous System
SG = Stellate Ganglion
SGB = Stellate Ganglion Block

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