

TREATMENT OF VERTIGO WITH STELLATE GANGLION BLOCK

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HISTORY OF PRESENT ILLNESS

- 38-year-old male who presented with neck pain and vertigo
 - Previously treated by other pain providers for cervical facet mediated pain
 - Reports it as a “golf ball” sensation with tension on the left side of his neck
 - Longstanding vertigo, balance issues following ski accident several years prior
 - Refractory to medications, interventions, physical therapy
 - Hx of PTSD

CASE PRESENTATION

History

- *Past Medical History*
 - Concussion s/p ski accident in 2015
 - Meniere's Disease with vertigo
 - PTSD
- *Past Surgical/Interventional History*
 - Left C5-C7 MBB (2017)
 - Botox (2017)
 - Left C4-C6 MBB (2021)
 - Left C4-C6 RFAx2 (2021)
 - Left cervical ESI (2022)
 - Left C4-C6 RFA (2023)
- *Medications*
 - Diclofenac PRN
 - Previously tried valium and Flexeril

Physical Exam

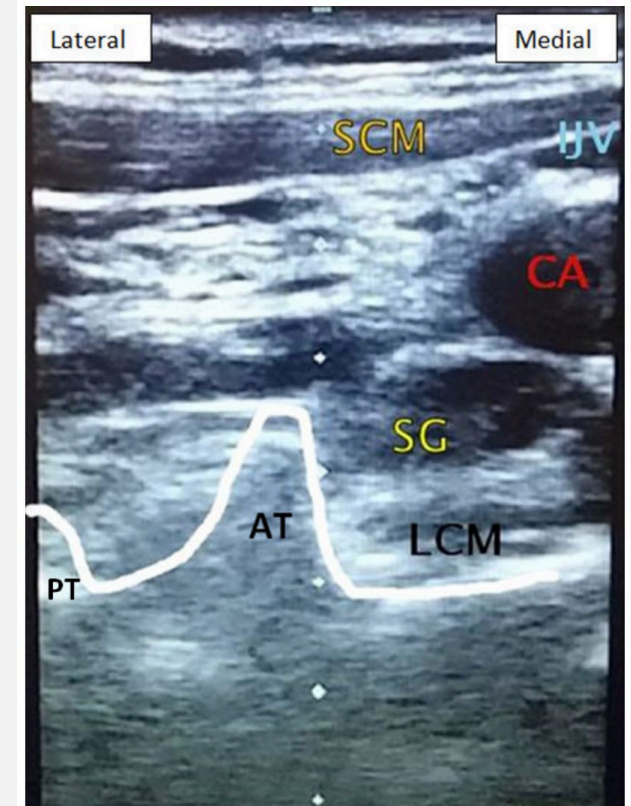
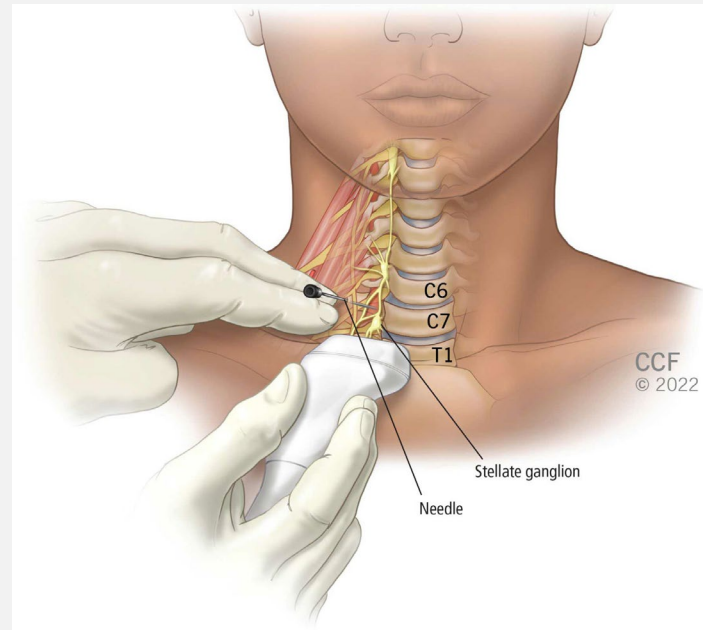
- *MSK*: No gross deformities noted. Bulk and tone within normal limits. Strength 5/5
- *NECK*
 - No misalignment or asymmetry noted.
 - Full range of motion.
 - No pain with flexion, extension, rotation, lateral bending. Spurling's - Negative BL
- *NEURO*
 - Alert and appropriate. Cranial nerves II-XII grossly intact.
 - Sensory intact to light touch bilateral upper/lower extremities.
 - No hyperesthesia/hypoesthesia, dysesthesia, allodynia, hyperalgesia noted.

Imaging/Labs

- *Cervical MRI*
 - Disc bulging and uncovertebral spurring throughout the cervical spine results in significant foraminal stenosis from C2-C3 through C5-C6. Faint type I Modic endplate changes are again noted at C5-C6. There is no change since August 2020.

MANAGEMENT

- Stellate ganglion block
 - Target: Sympathetic fibers from the head, neck, upper extremities, and heart arise from T1 synapse with the inferior cervical ganglion.^{1,2}
 - Our patient: S/p 2 stellate ganglion blocks (August 2023 then September 2023)



SCM = sternocleidomastoid; JV = internal jugular vein; CA = carotid artery; SG = stellate ganglion; PT = posterior tubercle; AT = anterior tubercle; LCM = longus colli muscle

REVIEW OF THE LITERATURE

- Many indications of stellate ganglion blocks including CRPS, peripheral vascular disease, postherpetic neuralgia, phantom limb pain, and post-surgical pain.²
- Hughey et al performed a pilot cadaver study comparing ultrasound and fluoroscopy finding no significant difference.³
- Case series by Warwick et al which included patients with Meniere's Disease with tinnitus and vertigo. In two cases, patients were symptom free from vertigo for years after several repeat stellate ganglion blocks.⁴
- Hoogland et al performed a study on 37 patients with Meniere's disease and vertigo was relieved in 25 patients (68%).⁵

REFERENCES

1. <https://www.asra.com/news-publications/asra-newsletter/newsletter-item/asra-news/2020/08/01/how-i-do-it-stellate-ganglion-blocks>
2. Piraccini E, Munakomi S, Chang KV. Stellate Ganglion Blocks. 2023 Aug 13. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan—. PMID: 29939575.
3. Hughey S, Schafer J, Cole J, Booth G, Tuttle R, Stedje-Larsen E. Ultrasound Versus Fluoroscopy for Stellate Ganglion Block: A Cadaveric Study. *Pain Med*. 2021 Oct 8;22(10):2307-2310. doi: 10.1093/pm/pnab182. PMID: 34051103.
4. Warrick JW. Stellate ganglion block in the treatment of Ménière's disease and in the symptomatic relief of tinnitus. *Br J Anaesth*. 1969 Aug;41(8):699-702. doi: 10.1093/bja/41.8.699. PMID: 5810130.
5. HOOGLAND GA. Treatment of Ménière's disease with cervical sympathetic block. *Acta Otolaryngol*. 1952;42(4-5):379-386. doi:10.3109/00016485209120365