Stellate Ganglion Block for Post-COVID-19 Chemosensory Dysfunction: A Case of Rapid and Sustained Recovery

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Introduction

- Post-COVID-19 chemosensory dysfunctions (dysosmia and dysgeusia) are common and significantly affect quality of life
- Symptoms may persist for months to years and frequently co-occur, suggesting shared neurological and autonomic mechanisms
- Proposed pathophysiology: autonomic dysregulation, neuroinflammation, and/or cranial nerve involvement[3]
- Treatment options are limited, driving interest in neuromodulatory therapies
- Stellate ganglion block (SGB) has been used to modulate sympathetic outflow and restore autonomic balance
  - Emerging data suggests it may improve post-COVID-19 dysosmia and dysgusia[1, 2]

Case Description

- 55-year-old female with PMHx hypertension, type 2 diabetes, and confirmed COVID-19
- Had persistent dysosmia and dysgusia >12 months, with significant nutritional and quality of life impacts
  - Symptoms resistant to conventional treatments (olfactory training, acupuncture, and hyperbaric oxygen)
- Evaluated for SGB due to symptom chronicity
  - Post-COVID-19 dysosmia and dysgusia are not currently FDA approved indications for SGB
- Underwent right-sided SGB with 3mL 0.25% bupivicaine under ultrasound and fluoroscopic guidance
- Rapid subjective improvement in smell and taste at one-week and one-month follow-up

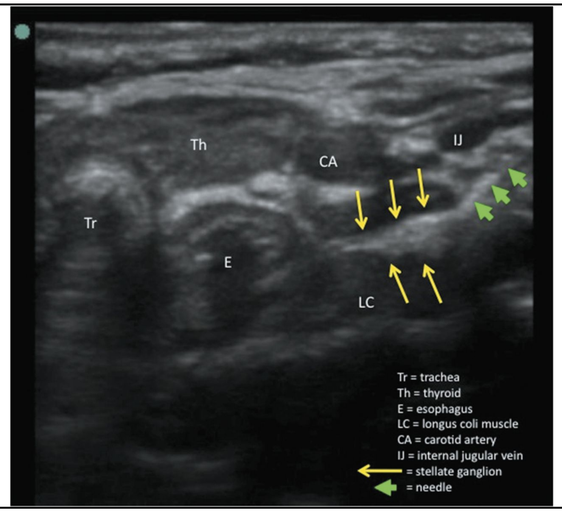

Figure 1: Ultrasound image of SGB. Transverse cervical view demonstrating key anatomical landmarks: thyroid (Th), trachea (Tr) esophagus (E), carotid artery (CA), internal jugular vein (IJ), and longs colli muscle (LC). Yellow arrows indicate the stellate ganglion target adjacent to the longs colli, with green arrow showing in-plane needle advancement technique.[5]

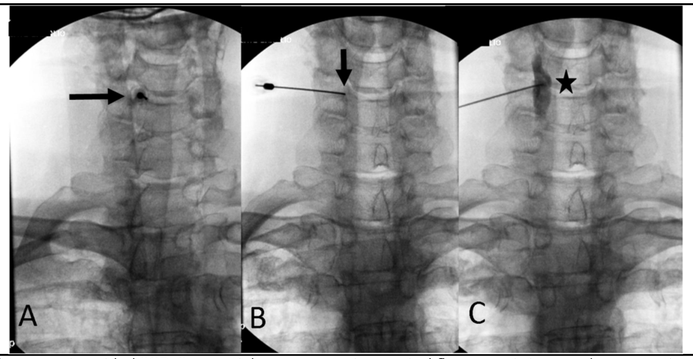

Figure 2: Fluoroscopic-guided SGB: Sequential anteroposterior cervical fluoroscopic images demonstrating (A) needle entry at the C6 level (Chassiagnac's tubercle), (B) advancement of the anterolateral vertebral body, and (C) contrast spread along the prevertebral fascia overlying the longus colli muscle (★), confirming appropriate injectate distribution.[6]

Discussion

- Marked improvement in post-COVID-19 dysosmia and dysgeusia after SGB and failure of conservative treatments
- Proposed mechanism: sympathetic modulation and autonomic "reset," targeting persistent dysautonomia[3]
- Evidence is mixed
  - RCT data show no significant benefit over placebo
  - Smaller studies report modest, variable improvement
- Favorable safety profile in literature
- Not all patients respond; structural olfactory damage may limit efficacy
- SGB may benefit select patients; further controlled studies are needed to define efficacy and patient selection[4]

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