

Serial Stellate Ganglion Blocks Ameliorate Anosmia and Dysgeusia from Long COVID

David Yim MD, Dalmar Mohamod DO*, Nwadi Igwe MD, Kanchana Gattu MBBS, Seung Lee MD, Thelma Wright MD
Dept of Anesthesiology, University of Maryland, Baltimore

Introduction

Globally, over 770 million cases of COVID-19 have been confirmed by the World Health Organization. The prevalence of this infection in the population magnifies the impact of its manifestations on patients and healthcare systems at large. One example is persistent anosmia within “long COVID,” a term used to describe COVID symptoms lasting longer than 12 weeks. Stellate Ganglion Blocks (SGB) have been investigated as a treatment modality for this given the underlying mechanism could be sympathetic overdrive.

Case Presentation

A 69-year-old male presented to a neurology clinic for lack of ability to taste or smell that developed after a COVID-19 infection two years prior. The patient noted that one day, he woke up and could not smell or taste. He stated that he was able to taste sweet/sour foods, but not bitter or umami. Overall capability was at 40% of what it was. He denied any other symptoms of long COVID, e.g. brain fog. He was then referred to the pain management clinic, where a SGB was recommended. First, a right SGB was performed. Sense of smell subjectively improved by 30%. This was followed by a left SGB with two subsequent blocks in the week to follow, one right, one left, both with continued improvement.

By the end of two weeks, the patient described having an additional 50% of his sense of smell back, and the ability to taste bitter and salty foods again.

Literature Review and Fluoroscopy

Table 1: Summary of Results for SGB in Long COVID Reported in Literature

Reference	Results
Liu and Duricka, J Neuroimmunol 2022 ⁷	Case series: 42 yo female with 8 mo hx of fatigue, mental fogginess, difficulty concentrating, resting tachycardia, sleep disturbance, and parosmia/dysgeusia. 44 yo female with 8 mo history of anosmia, dysgeusia, mental fogginess, headache, dyspnea, cognitive impairment, right sided paresis. Both pts received bilateral SGB with durable improvement. <i>[Regimen: Not Reported]</i>
Vinyes, Munoz-Sellart, and Caballero, Medicine 2022 ²	Case report: 54 yo male with multiple ongoing COVID related symptoms x 14 weeks suggestive of dysautonomia, including fatigue, breathlessness, emotional lability, intermittent diarrhea and muscle pain. Left SGB, left sphenopalatine ganglion, left supraorbital and bilateral L1 spinal ganglion blocks resulted in improvement. <i>[SGB Regimen: 2.5 mL procaine 0.5%]</i>
Chauhan, Upadhyay, Khanduja and Emerick Cureus 2022 ⁸	Case report: 48 yo female with anosmia and dysgeusia persisting 6 months post-COVID-19 infection. Right then Left SGB were performed with complete resolution 24 hrs after the second SGB. <i>[SGB Regimen: 4 mL 0.25% bupivacaine]</i>
Khan, Kirkpatrick, Deng and Shah, Cureus 2022 ⁹	Case report: 38 yo male with persistent fatigue, shortness of breath, post-exertional malaise, flu-like symptoms, cold intolerance, and GI symptoms (diarrhea and abdominal pain) for over 2 years following presumed acute COVID-19. Right then Left SGB were performed with improvement in multiple symptoms. <i>[SGB Regimen: 4 mL 0.25% (10 mg) bupivacaine with 1 mL (10 mg) dexamethasone]</i>
Kalava, Benyahia, Tico Calzada and Staat. Cureus 2023 ¹⁰	Case series: 6 patients (57 yo male, 48 yo female, 36 yo female, 20 yo female, 55 yo female, 55 yo male) with persistent olfactory and gustatory dysfunction ranging from 5 mos to 1-2 years. Patients received an SGB on each side. Five out of six demonstrated improvement. <i>[SGB Regimen: 7 mL 0.5% bupivacaine or ropivacaine]</i>
Pearson et al. Cureus 2023 ⁹	Retrospective Cohort Study: 41 patients (18 male and 23 female) with age range between 18 and 89 yrs who received SGB for treatment of long COVID-19. Reported symptoms included fatigue (85%), brain fog (80%), post-exertional malaise (66%), mood changes (31%), change in taste and smell (44%), among others. Patients received unilateral or bilateral SGB. Of the patients reporting anosmia/dysgeusia, 56% reported symptom improvement after SGB. <i>[SGB Regimen: mixture of 2 mL 2% chloroprocaine, 2 mL 1% lidocaine, and 1 mL 0.2% Ropivacaine]</i>
Peterson et al. Otolaryngology-Head and Neck Surgery 2023 ¹	Prospective Pilot Study: 20 patients (16 female, 4 male) mean age 46 (SD 11) yrs, mean duration of olfactory dysfunction was 21 (SD5) mos. Patients received bilateral SGBs with mepivacaine performed 1 week apart. Eleven (55%) achieved minimal clinically important difference (MCID) in UPSIT and 7 (35%) achieved MCID in ODOR.

Table 1: Summary of reports of SGB use for long COVID

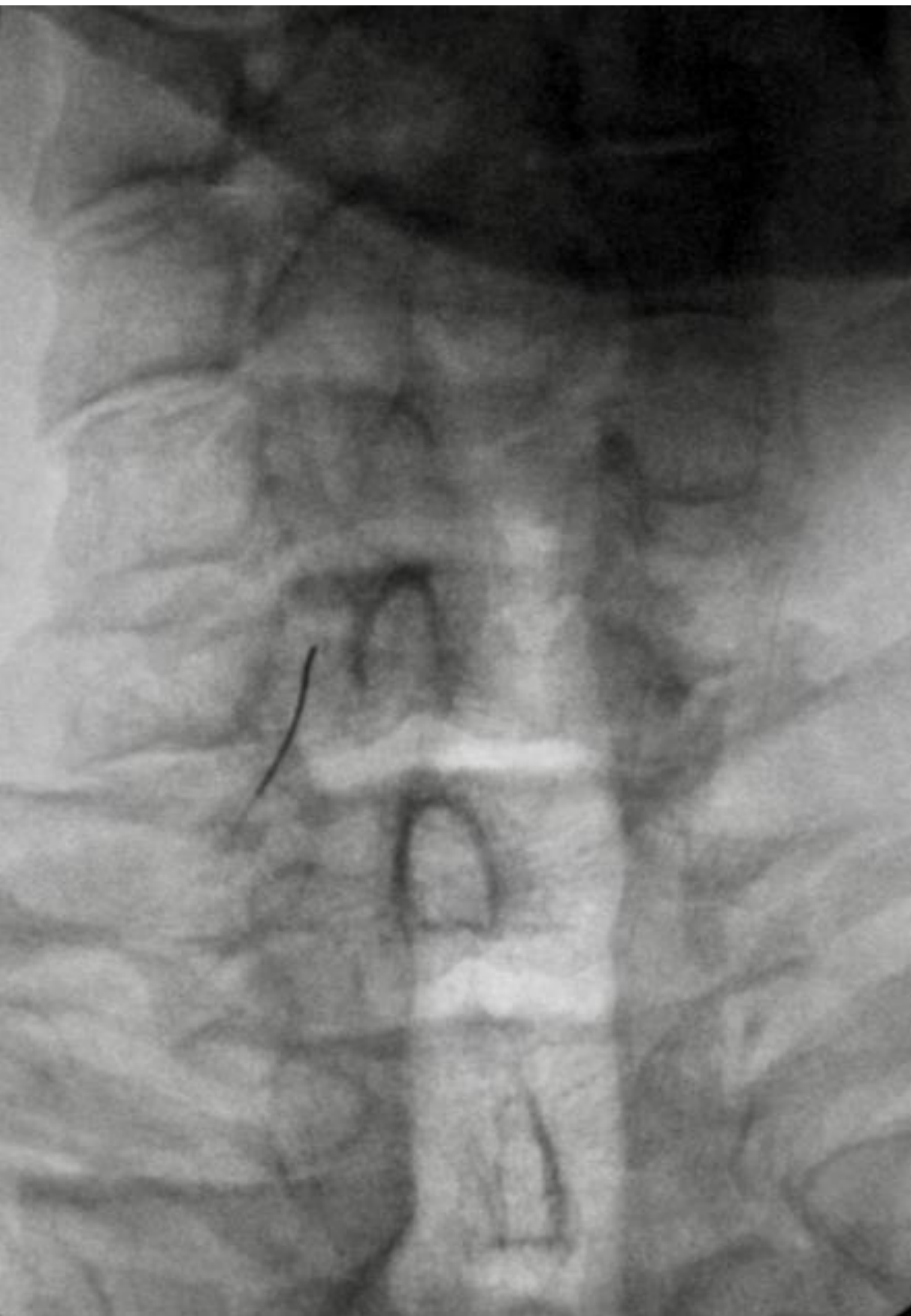


Figure 1: Fluoroscopic image from the second right SGB.

Discussion

Persistent olfactory dysfunction may be due to chronic SARS CoV-2 infection, continuous inflammation, basal cell damage, and dysautonomia. In this regard, there are an increasing number of reports in the literature on the use of SGB for long COVID symptoms. While the accruing experience with SGB for the treatment of Long COVID noted in Table 1 is promising, many questions remain about the optimal approach for using SGB in this setting.

Our patient presented 2.5 years post-acute COVID-19 infection, likely impacting the responsiveness of his ongoing dysautonomia to SGB. For this reason, when partial improvement was experienced, we provided the option to repeat the series to maximize potential response. Additional improvement was observed after the subsequent series.

Local anesthetic strength and concentration can affect block efficacy. We used 0.5% ropivacaine which alleviated symptoms but, unlike lidocaine, has not been shown to be immunomodulatory in nature. More studies regarding the optimal local anesthetic regimen for SGBs would be beneficial. Limitations: the rate at which the subsequent SGBs were performed.

References

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