

## Introduction

Post Acute Sequelae of COVID (PASC), or Long COVID, often involves brain fog, fatigue and pain. It is highly prevalent (~50% of COVID infection), disabling, and difficult to treat. Preliminary evidence suggests possible efficacy of stellate ganglion block (SGB), though few studies used standardized measures. Here we present 3 cases of PASC treated by right SGB, where patient- reported outcomes were collected using validated instruments as part of standard clinical care. We hypothesize that SGB is effective in treating PASC, especially in the domains of pain interference and fatigue.

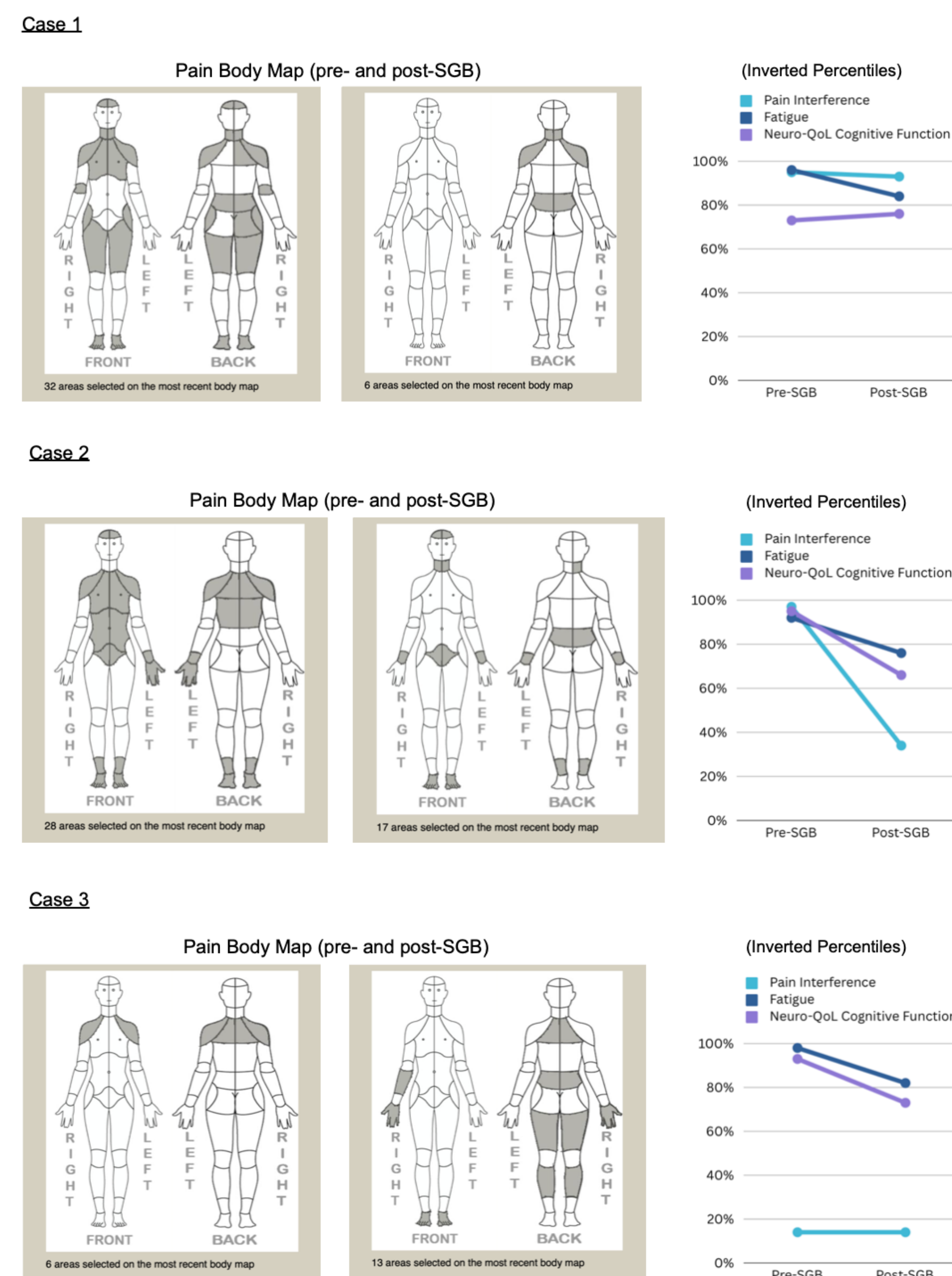
## Methods

Three female patients, between 30 and 53, diagnosed with PASC and failed medical treatment, received a right SBG in 2023. Patient reported outcomes (PRO’s) assessing pain, mood, and function using NIH PROMIS and other instruments were collected before and after SGB. The change in each domain was computed as difference in T-score, and statistical significance estimated by paired T-test.

## Results

**Figure 1** summarizes outcomes to SGB for each case. Reduction is seen in most symptoms, including number of body areas with pain, pain interference, and Neuro-QoL Cognitive Function; and reached statistical significance in fatigue (p=0.008).

Figure 1: Case Outcomes Pre- and Post-SGB



## Conclusions

SGB was effective in reducing most symptoms, including pain interference and number of painful body areas. It was most effective in reducing fatigue, which is a key symptom in PASC and likely related to deranged neuro-immune axis, which can be modulated by SGB. Future studies should be performed in larger cohorts and extend to other post-viral syndromes with autonomic features (eg. fibromyalgia, chronic fatigue syndrome).

## References

- Chen C, Hauptert SR, Zimmermann L, et al. Global Prevalence of Post-Coronavirus Disease 2019 (COVID-19) Condition or Long COVID: A Meta-Analysis and Systematic Review. J Infect Dis. 2022 Nov 1;226(9):1593-1607. doi: 10.1093/infdis/jiac136.
- Liu LD, Duricka DL. Stellate ganglion block reduces symptoms of Long COVID: A case series. J Neuroimmunol. 2022 Jan 15;362:577784. doi:10.1016/j.jneuroim.2021.577784.
- Khan MH, Kirkpatrick KP, Deng Y, et al. Stellate Ganglion Block for Long COVID Symptom Management: A Case Report. Cureus. 2022 Dec 7;14(12):e32295. doi: 10.7759/cureus.32295.
- Pearson L, Maina A, Compratt T, et al. Stellate Ganglion Block Relieves Long COVID-19 Symptoms in 86% of Patients: A Retrospective Cohort Study. Cureus. 2023 Sep 13;15(9):e45161. doi: 10.7759/cureus.45161.