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Introduction

Hiccups are mostly tolerable and self-limiting, However, when consults are requested for persistent hiccups, they are likely represent severe discomfort and significant disruption in quality of life. When physical maneuvers and pharmacologic management fail to provide relief, direct intervention at the level of the phrenic nerve, or surrounding sympathetic fibers of the afferent limb of the hiccup reflex arc may be employed .^{1,2}

Phrenic nerve blocks have been utilized with good results, however it is difficult to perform and has been associated with respiratory dysfunction.³ Few studies have performed a stellate ganglion block as an alternative and comparatively easier technique. Although its exact mechanism is poorly understood, it has yielded positive results and carries a lesser risk of pulmonary complications .^{4,5}

Materials and Methods

As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per Hartford Healthcare policy. Patient provided signed consent for publication at the time of encounter.

The Case

- A 54-year-old male with end-stage renal disease, coronary artery disease, gastrointestinal esophageal reflux, and ascending aortic aneurism, status post repair, presented with a 13-year history of intractable hiccups.

- Review of systems and workup revealed no significant neurologic, cardiovascular or gastrointestinal findings. Medication history did not coincide with symptom history. Hiccups first began in the period following his aortic aneurism repair in 2012, suggesting that as a possible inciting event.

- The patient was maintained on Chlorpromazine (Thorazine) at a dosage of 25 mg every 8 hours or as needed on a long term basis, yet his symptoms have shown little to no improvement at the time of the clinical assessment for SGB procedure.

Procedure

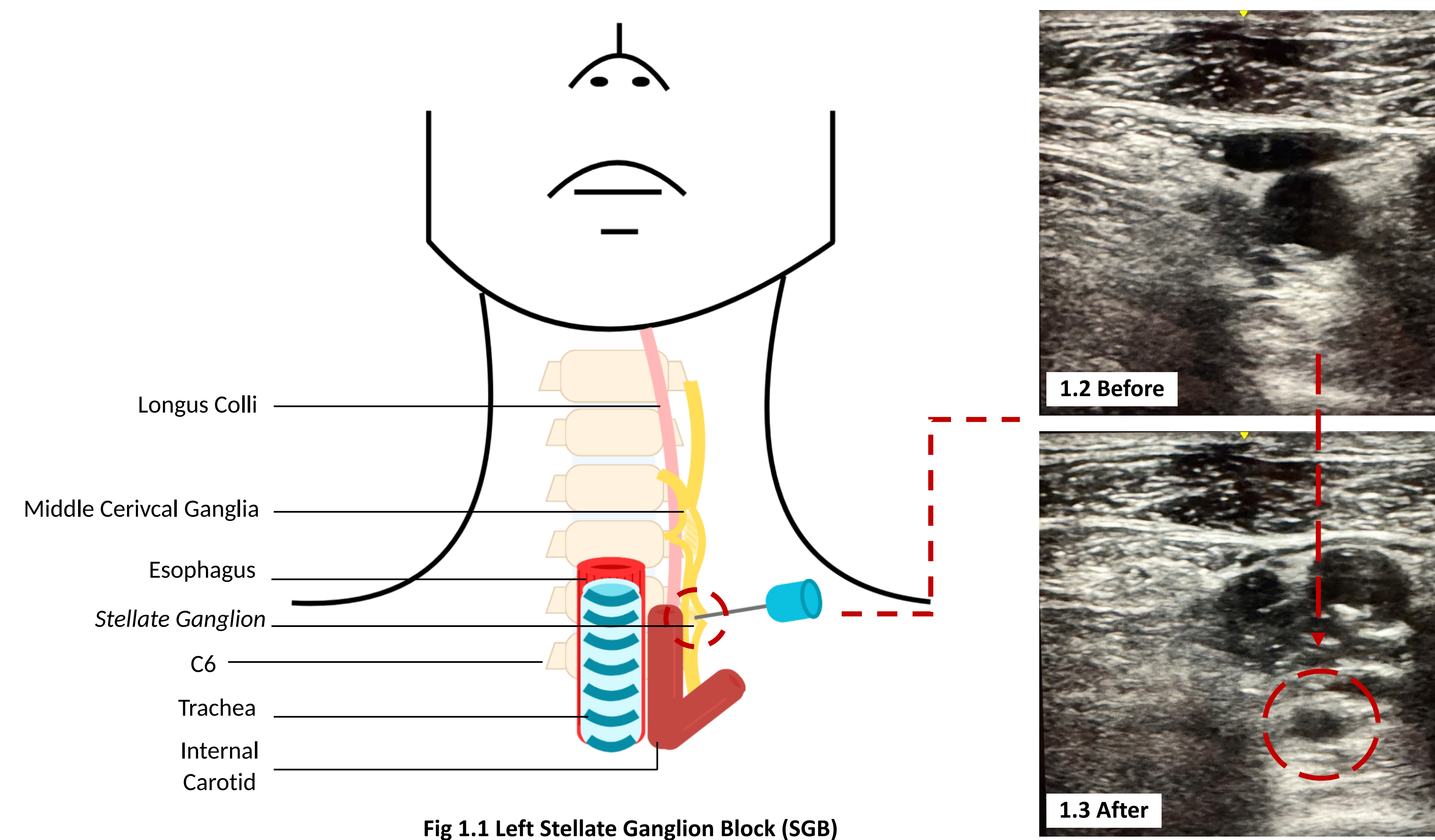


Fig. 1, 1.1. Stellate Ganglion block (SGB). The needle is inserted beside the trachea and advanced laterally to medially until its tip reaches the prevertebral fascia over the *Longus colli* muscle between the *carotid artery* and the *C6 anterior tubercle*.⁵ **1.2. & 1.3.** Ultrasound visualization demonstrating the before and after spread of the local anesthetic (hypodense area within red circle)

Intervention

- An ultrasound guided left stellate ganglion block was performed (Fig. 1). Ten mL of local anesthetic (0.5% bupivacaine) was slowly injected, aspiration negative every 2-3mL, confirming the needle was not in a blood vessel.⁴
- Cessation of hiccups for several hours and marked reduction in frequency thereafter.
- At the time of writing this case report, the patient was approximately 21 days post-procedure and reports a meaningful reduction in symptoms. While clinical monitoring remains ongoing, he felt the benefit of the block was significant enough to request a right stellate ganglion block at a later date to achieve further symptomatic relief.

Discussion

- Persistent hiccups are rare and are considered chronic at more than 2 weeks or intractable at more than 1 month. When left untreated, it may lead to dehydration, malnutrition, depression, and exhaustion that have resulted in emergency room visits and hospitalizations.^{1,2}
- Although several pharmacological and procedural interventions have been employed, relief can be slow and the approach relies on lengthy observation periods which may affect compliance and prolong distress .^{2, 3, 5}
- The hiccup reflex arc is a complex pathway made up of central and peripheral limbs. The phrenic nerve is a prominent feature of both efferent and afferent pathways and ultrasound guided interventions have been done when pharmacological treatment has failed.^{3,4} However, difficult sonographic identification and the large volume anesthetic requirement has increased risk of brachial plexus involvement or diaphragmatic paralysis .^{3,4}
- SGB can be safely performed consistently and although very little information has been published regarding the their efficacy, the few case reports that exist demonstrate variable outcomes, from temporary relief to complete resolution.^{5,6} However, it was notable that these patients did not experience hoarseness or respiratory discomfort, which is typical after phrenic nerve blockade.^{6,7}
- No clear guidelines have been established on the interventional approach to treating intractable hiccups, thereby increasing the necessity for safer yet equally effective treatment methods like Stellate Ganglion Blocks.

References

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