

Introduction

- A stellate ganglion block is an injection of local anesthetic that blocks the sympathetic nerves and provides relief in the upper extremity.
- After a subarachnoid hemorrhage, cerebral vasospasm is common. It is a significant complication and source of morbidity and mortality.
- The most common prevention for cerebral vasospasm is calcium channel antagonists with nimodipine being the first-line treatment.
- Cerebral vasospasm can be relieved from a sympathectomy in the area with a stellate ganglion nerve block especially if other conventional and invasive treatments have failed.

Case Report

A 43-year-old male with past medical history of IV drug abuse, COPD, current smoker, HTN, and GERD presents to the ED after a fall in the shower with a severe headache. The patient presents with a GCS of 7 for which he was intubated and sent for emergent head CT. The head CT revealed a subarachnoid hemorrhage with an aneurysm arising from the anterior communicating artery. The patient's Hunt and Hess score was 4 and an EVD was placed. The patient was then transported to the intensive care unit for neuromonitoring and cardiopulmonary support. The patient was also found to be COVID positive. Nimodipine infusion was started and the anterior communicating artery was coiled by interventional radiology. Eventually the patient was able to follow commands with right upper extremity.

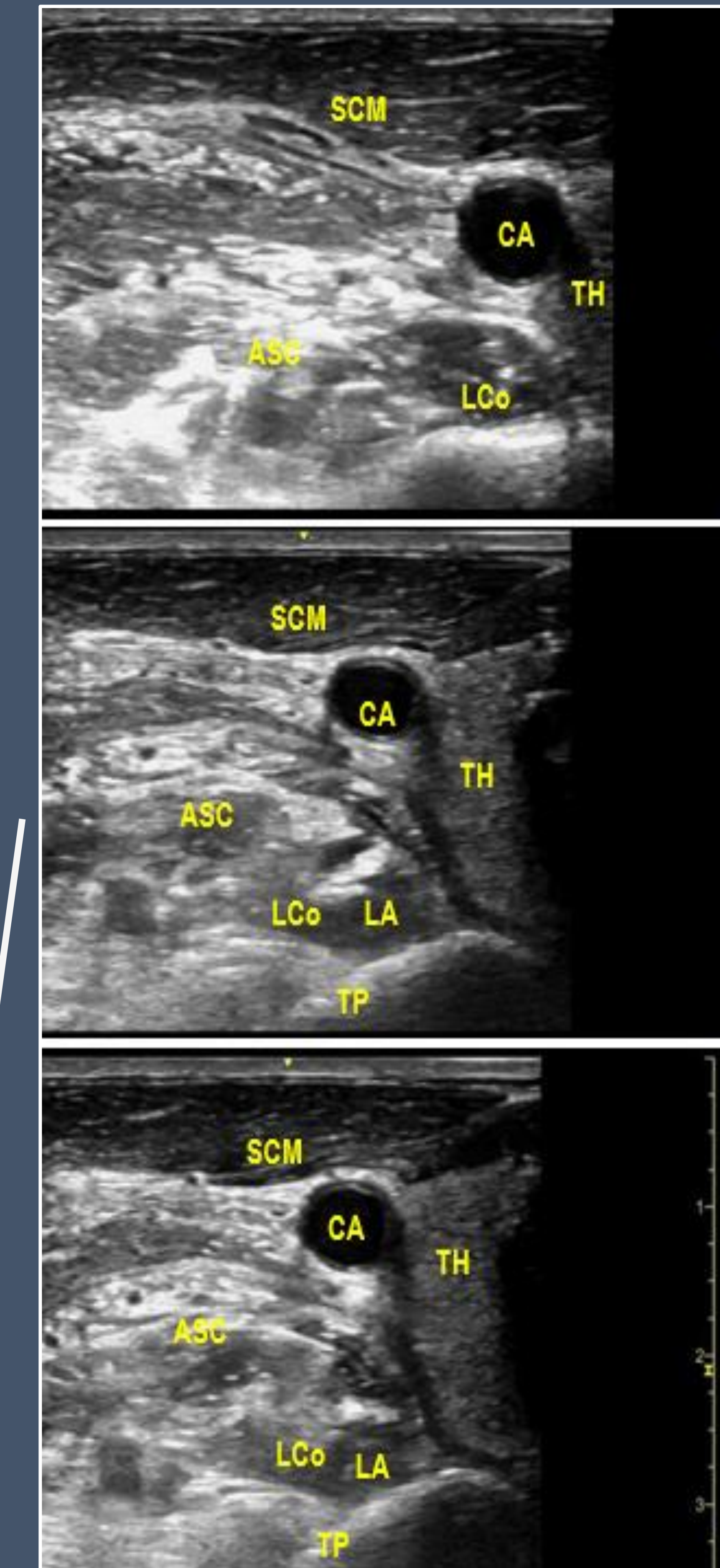
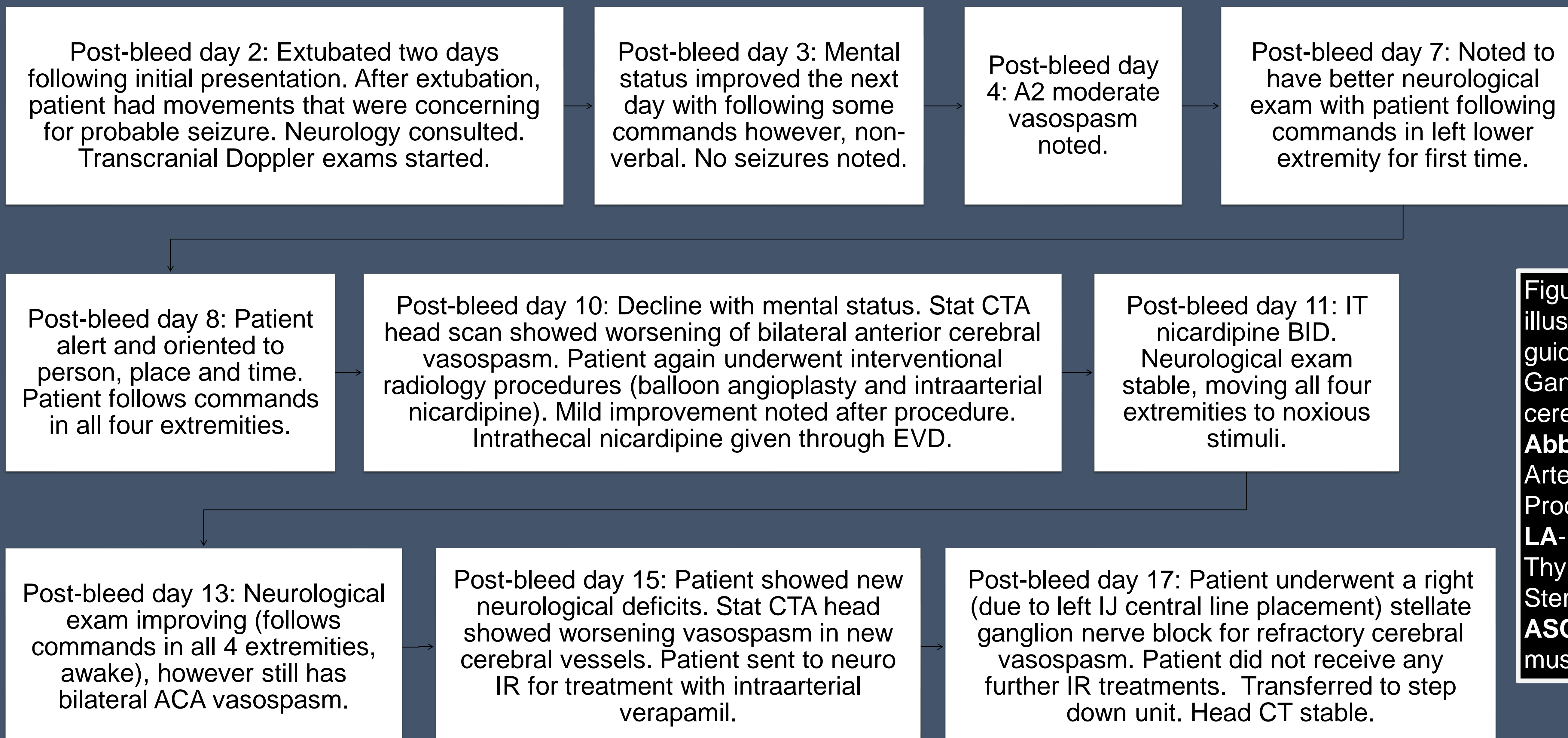


Figure 1. A schematic illustration of ultrasound-guided right Stellate Ganglion Block for refractory cerebral vasospasm.
Abbreviations: CA- Carotid Artery, TP- Transverse Process, LCo- Longus Colli, LA- Local Anesthetics, TH- Thyroid, SCM- Sternocleidomastoid muscle, ASC- Anterior scalene muscle.

Discussion

- This patient exhibited refractory cerebral vasospasms from a subdural hemorrhage after a presumed cerebral aneurysm rupture.
- A stellate ganglion block was used as an adjunct therapy to help decrease sympathetic cerebral vascular tone.
- This patient had several interventions done in order to stop his vasospasms such as triple therapy, balloon angioplasty, intrathecal/intraarterial nicardipine and stellate ganglion block.
- Stellate ganglion block has been noted to have successfully treated cerebral vasospasm in the setting of subdural hemorrhage.
- Stellate ganglion block increases cerebral blood flow and neurological improvements were seen in minutes following the block.
- This patient did not have any reoccurring cerebral vasospasms after the stellate ganglion block was performed.

References

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- Jain V, Rath GP, Dash HH, Bithal PK, Chouhan RS, Suri A. Stellate ganglion block for treatment of cerebral vasospasm in patients with aneurysmal subarachnoid hemorrhage - A preliminary study. *J Anaesthesiol Clin Pharmacol*. 2011 Oct;27(4):516-21. doi: 10.4103/0970-9185.86598. PMID: 22096287; PMCID: PMC3214559.