Stellate Ganglion Block

What is the stellate ganglion?
The stellate ganglion refers to a bundle of nerves that sits at the base of the neck, just in front of the seventh vertebral body. These nerves predominantly carry sympathetic fibers—that is, nerve fibers that are responsible for your “fight or flight” response, and play a key role in producing chronic pain.

A stellate ganglion block is usually utilized to treat a painful condition of the arm or hand known as **Complex Regional Pain Syndrome (CRPS)** – also known as **Reflex Sympathetic Dystrophy (RSD)**.

How is a Stellate Ganglion Block Performed?
The stellate ganglion block can be done with the help of ultrasound and/or fluoroscopy (low-dose X-ray) to improve accuracy and safety. For both techniques, you will be asked to lie down on your back with your neck slightly extended, and your head turned slightly towards the side opposite of the block.

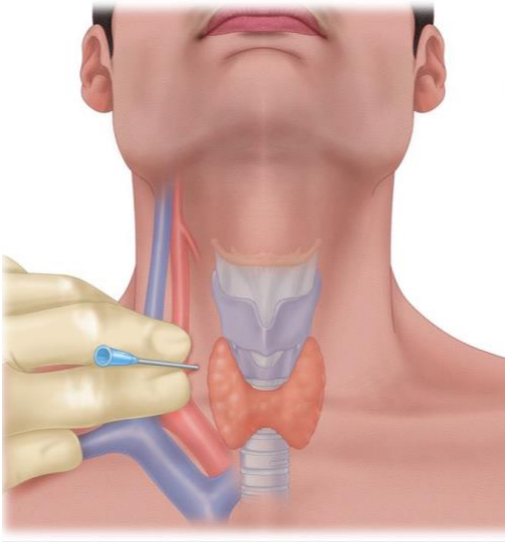

Image source: Goel et al, 2018 Published in Regional Anesthesia and Pain Medicine

Ultrasound Guidance:
Cleaning solution will be placed over your neck. An ultrasound probe will then be used to scan the neck and identify various structures and anatomy. Once the stellate ganglion is identified, your physician will numb the skin, then direct a small needle towards the ganglion under the guidance of the ultrasound. Local anesthetic medication will then be administered over the stellate ganglion.

Fluoroscopic (Low-dose X-ray) Guidance:
Your neck will be cleaned and draped in a sterile manner. Key structures such as the vertebral bodies of your neck will be identified under fluoroscopy. Next, a small amount of local anesthetic medication will be used to numb the skin. A needle will then be advanced under X-ray guidance towards the location of the stellate ganglion. Appropriate needle location will be confirmed via the injection of a small amount of contrast solution. Once the position is confirmed, a local anesthetic medication will administered over the ganglion.

What is Horner’s Syndrome?
Many patients will experience a set of symptoms known as **Horner’s Syndrome** following the procedure. This includes drooping of the eyelid, a constricted pupil, and decreased sweating.

This is *normal and expected* for the procedure. These symptoms should subside when the anesthetic medication wears off, usually about 4 to 6 hours after the block is performed.

Risks and Complications:
As with any medical procedure, there are rare potential risks associated with the procedure. This includes bleeding, infection, nerve injury, collapsed lung, esophageal perforation, allergic reaction, seizure (if the medication is injected into a blood vessel), brachial plexus block (arm numbness on side of block that lasts for a few hours), temporary hoarseness, and shortness of breath (if the phrenic nerve is anesthetized).
Through the use of image guidance and sterile technique, we will take every measure to minimize these potential risks and maximize the therapeutic benefit.