Stellate Ganglion Block
The stellate ganglion is a collection of nerves located at the back of your neck adjacent to your spine. These nerves form part of the sympathetic nervous system that supplies the head, face, neck, upper chest and arm. The sympathetic nervous system has many roles, but of particular significance is preparing your body’s flight or fight response. Blocking the stellate ganglion has been used for many years for a number of different conditions, including:

- Diagnosing a patient’s pain
- Facial pain
- Angina
- Ménière’s disease
- Shingles and post herpetic neuralgia
- Phantom limb pain
- Complex regional pain syndrome
- Excessive sweating and menopause related flushing
- Improve blood flow
- More recently to treat the hyperarousal symptoms associated with post-traumatic stress disorder (PTSD)

**WHAT IS A STELLATE GANGLION BLOCK (SGB)?**

The exact mechanism in pain depends on the condition being treated, but reducing the release of norepinephrine is a common process to all these conditions. Norepinephrine is an adrenaline like chemical that has a role in the activation of pain sensitive nerves, regulating body temperature and sweating and activating the amygdala (brain’s fear centre).

The exact mechanism in PTSD is still unknown. After an extreme trauma there is a disruption in the sympathetic nervous system whereby extra nerves grow that lead to increased levels of norepinephrine. Norepinephrine activates the amygdala, which can keep the body in a state of constant fight or flight. SGB reduces this amygdala activation and quietens down the symptoms (nightmares, anxiety, hypervigilance, insomnia) associated with this hyper-aroused state.
HOW EFFECTIVE IS A SGB?

The effectiveness of an SGB does depend on the condition being treated and varies from patient to patient. It is difficult to predict your outcome before the procedure. If an SGB is being used as a diagnostic tool then there may not be any relief if the stellate ganglion or sympathetic nervous system is not a source of your problem.

In pain and menopause related symptoms some patients see improvements immediately after the injection. These can last for only a few hours after the anaesthetic effect wears off. In other patients the improvements last beyond the duration of the local anaesthetic effect (in some patients for several months). The duration of relief can get longer after each injection and your doctor may recommend a series of injections to treat the problem. You may require up to 10 injections before seeing a sustained improvement to your condition.

In PTSD the benefits of SGB are less clear and the exact method of how to best utilise an SGB is yet to be clarified. Some studies have suggested up to 75% of patients will benefit from the procedure and can continue to benefit for 2 months afterwards. While some patients will see improvements immediately after a single block, some studies do suggest a second block to improve the effectiveness.

It is important to recognise that an SGB is not a cure for your condition(s). It should be looked upon as a symptomatic treatment that can then be used to facilitate reduction in medication and improve quality of life and functioning. Any improvement to pain seen can be used to facilitate a rehabilitation approach to your management as guided by your treating doctor. In PTSD it is to facilitate the therapy you will need to process the trauma related condition.

HOW IS A SGB DONE?

SGB’s are a minimally invasive procedure that is completed in a clean operating theatre environment. It is usually completed as a day procedure and usually does not take more than 5 minutes. Throughout the entire procedure your heart rate, blood pressure and oxygen levels will be monitored. In addition to your doctor there will be an anesthetist who will monitor your care during the procedure.

- You will be given a sedative through a drip to relax you so that you are not aware of the procedure (this is not a general anesthetic).
- The procedure is completed under x-ray guidance to help direct the needle involved in the injection.
- The procedure may also involve injecting a special dye to confirm the correct location of the injection.
- Your neck area will be cleansed with an antiseptic solution before a thin needle is inserted in the area to the side of your voice box. A local anaesthetic will be injected in the treatment area before the needle is inserted to help numb the skin.
- A small amount of anaesthetic is then injected to block the stellate ganglion.
For more detailed information on your procedure including costs, preparation, and aftercare please refer to the Procedure Information Sheet.

Stellate Ganglion Block

Stellate Ganglion

Entry Point

Spinal Vertebrae

Spinal Disc
ARE THERE ANY RISKS?

The risk of complications with an SGB is very low. There are risks associated with the procedure, medications used and the anaesthesia. For risks relating to the anaesthesia we recommend discussing this with your anaesthetist. Potential risks include:

Common
(Usually mild and self-limiting)

- Bleeding at the injection site
- Bruising and discomfort at the site of injection
- Ineffective

Uncommon

- Steroid effects: elevated blood sugar levels, sleep disturbance, mood changes, facial flushing, sweating
- Headaches
- Nausea and/or vomiting
- Worsening of your pain

Rare

- Nerve or spinal cord damage
- Infection
- Bleeding around the spinal cord
- Seizures
- Allergic reaction to medications

Approximately 75% of people will have what is known as a Horner’s Syndrome. These are a cluster of symptoms and signs that indicate a positive response to the block and will usually resolve within a few hours. You do not need to have these effects to have had a positive response:

- Blurred vision
- Red or blood shot eyes
- Droopy eyelid
- Tearing and/or nasal congestion
- Difficulty swallowing
- Warmth/tingling in your arm, hand and/or face
- Sensation of a “lump” in your throat
- Voice hoarseness

IS A SGB RIGHT FOR YOU?

If you think an SGB may be right for you talk to your doctor about it. If you would like any further information or would like to see one of our doctors please do not hesitate to contact The Anodyne Centre.
When it comes to tackling pain, we’re better together