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What are the sympathetic nerves and why are sympathetic blocks helpful?

The sympathetic nerves run on the front surface of the spinal column and not in the spinal canal with the nerves that provide sensation and strength to your legs. The sympathetic nerves are part of the autonomic nervous system, which basically controls functions such as blood flow and temperature regulation to the arms and legs, sweating, heart rate, digestion, and blood pressure.

The autonomic nervous system is responsible for controlling bodily functions that you do not think about or have direct control over. However, there is a connection between the central nervous system (that you have control over) and the autonomic nervous system. Regulation of the connection can become altered, usually secondary to an injury. When regulation of the sympathetic nervous system is altered, various pain states can occur including “complex regional pain syndrome”, also known as “Reflex Sympathetic Dystrophy” (RSD).

What is a sympathetic block and why is it helpful?

A sympathetic nerve block involves injecting numbing medicine around the sympathetic nerves in the low back or neck. By doing this, the sympathetic nervous system in that area is temporarily „switched off“ in hopes of reducing or eliminating pain. If pain is substantially improved after the block, then a diagnosis of sympathetically mediated pain is established. The therapeutic effects of the anesthetic can occur, at times, longer than would be normally expected. The goal is to reset the sympathetic tone to a normal state of regulation. If the initial block is successful, then additional blocks may be repeated if the pain continues to sequentially diminish.

What will happen to me during the procedure?

An IV will be started for safety, and so relaxation medicine can be given if needed. After lying on an x-ray table, the skin over the area to be injected will be well cleansed. Next, the physician will numb a small area of skin with numbing medicine (anesthetic) which stings for a few seconds. The physician will use x-ray guidance to direct a needle to the sympathetic plexus of nerves. The physician will then inject contrast dye to confirm that the medicine only goes over the targeted sympathetic nerves. Once this occurs, numbing medicine (anesthetic) will then be slowly injected.

What should I do and expect after the procedure?

20-30 minutes after the procedure you will move the affected area to try to provoke your usual pain. You may or may not obtain improvement in the first few hours after the injection depending upon if the sympathetic nerves are carrying your pain signals. You may notice increased warmth in the affected extremity for 4-18 hours after the block. If the sympathetic nerves in the neck are injected (stellate ganglion), you will also notice a slight drooping of the eyelid and redness of the eye for several hours. This is normal, and will resolve over 4-18 hours. You should report your remaining pain (if any) and record the relief you experience during the next week on a "pain diary" we will provide. Mail or fax the completed pain diary back one week after the injection so that your treating physician can be informed of your results and plan future tests and/or treatment if needed.

You may notice a slight increase in your pain lasting for several days as the numbing medicine wears off. You might also experience mild pain at the injection site for several days. Ice will typically be more helpful than heat in the first 2-3 days after the injection. You may take your regular medicines after the procedure, but try to limit your pain medicines the first 4-6 hours after the procedure so that the diagnostic information obtained is accurate.

On the day of the injection, you should not drive and should avoid any strenuous activities. On the day after the procedure, you may return to your regular activities. If your pain is improved from this procedure, start your regular exercise/activities in moderation. Even if you are significantly improved, gradually increase your activities over 1-2 weeks to avoid recurrence of your pain.