Sympathetic Nerve Block

The sympathetic nerves are nerves that control some involuntary functions of the body. Examples of these functions include the widening and narrowing of blood vessels, control of blood flow, sweating and the function of glands. When the sympathetic nerves are not working correctly, they may cause long standing (*chronic*) pain.

A sympathetic nerve block is performed to find out if there is damage to the sympathetic nerve chain and if that could be the source of pain. Blocking those nerves with an anesthetic is done mostly to find out what is wrong. But it may provide pain relief even after the anesthetic wears off.

SOME COMMON SYMPATHETIC NERVE BLOCKS

- The sympathetic nerves of the stellate ganglion lie just in front of the spine in the lower neck. Blocking these nerves can help ease pain involving the face, arms and hands.
- The lumbar sympathetic nerves in front of the spine of the lower back can be blocked to help with painful conditions of the legs and feet.
- Pelvic pain often involves the sympathetic nerves in front of the sacrum. These nerves can be blocked with injections just above or below the *sacrum*. That is the large bone at the bottom of your your backbone (*spinal column*).
- The solar plexus (*celiac plexus*) is a bundle of sympathetic and sensory nerves behind the stomach. They transmit much of the sensation from the belly (*abdominal*) organs. Celiac plexus blocks can help control a variety of longstanding (*chronic*) abdominal pains, especially cancer-related pains.

Injections into sensitive points on the body (*trigger points*) to block sympathetic nerves also block the nerve impulses to the muscles. This stops the contractions of the muscles that are causing pain. Muscles that are tense or in spasm over long periods of time become tender and painful. The pain then triggers more spasm and more pressure on the nerves. This creates a vicious cycle. Physical therapy and exercise are the main treatments. But injections into the muscle can help to break the cycle.

PROCEDURE

- A numbing medication such as Novocain is applied to the skin over the area of the nerves to be injected.
- A needle is then inserted under X-ray guidance (*fluoroscopy*). Once the needle is in the proper position, an anesthetic medication is injected into the area. Following this, you may notice redness to areas of the body supplied by those nerves. It may take 30 minutes for the procedure. It may be followed by rechecking and recovery over several hours.

PERIPHERAL NERVE BLOCKS

Peripheral nerves are the nerves outside of those within the brain and spinal cord. These nerves transmit feeling (*sensation*) and movement (*motor*) control. Peripheral nerves can be damaged by injury, surgery, scar tissue or illness. Blocking peripheral nerves may help provide pain relief. Following are three examples of common peripheral nerve blocks:

- The occipital nerves travel from the cervical spine in the neck to the back of the head and scalp. These nerves can be damaged by arthritic changes in the cervical spine, by muscle spasm or by neck injuries. The result can be headaches. These typically start in the back of the neck and spread toward the forehead. Occipital nerve blocks with drugs called steroids can often help.
- Chest injuries or surgery can injure the intercostal nerves, triggering continual chest-wall pain. A valuable part of the treatment may be to block or even freeze these nerves.
- The ilioinguinal nerve wraps around the rim of the pelvis and goes to the groin (*inguinal*) and pubic areas. The nerve can be damaged by surgery or by scar tissue that develops following hernia repairs and cesarean sections. Here, too, nerve blocks may enhance treatment.

ADVANCES IN INJECTION TECHNIQUE

A few years ago, most blocks were placed more or less blindly, according to the caregiver's “feel” of the patient's arrangement of body parts (*anatomy*). Now, much more accurate needle placement is achieved by using X-ray (*fluoroscopic*) guidance. In difficult cases, the *anatomy* might be distorted by lumps (*tumors*). Then *CT, or CAT, scan* (another type of imaging) guidance is used. Another development is the use of curved needle techniques for deeper injections. By using curved needles and fluoroscopic guidance, the pain specialist can gently twist and turn the needle directly to the target. This avoids multiple attempts to get the needle in the right place. This results in better needle placement with less discomfort.

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