

Assessing and Treating Peripheral Sensory Nerves

APPLICATIONS FOR LOW BACK AND PELVIC PAIN

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Can we help treat chronic neuropathic pain? Neuropathic pain is an ongoing pain that has no real utility to the body, as compared to nociceptive pain, which is an acute pain that signals something in the body is injured. Neuropathic pain is an ongoing pain that continues for no obvious reason.

When it comes to neuropathic pain, think of complex regional pain syndrome; think of the whiplash patient who still hurts five years later. Many people who have been diagnosed with fibromyalgia may really have a treatable problem - chronic neuropathic pain that has spread. How many patients do you see who have chronic pain, and your best efforts don't quite seem to solve their ongoing or recurrent pain patterns? Let's explore a new way to look at and treat these patients.

A Little Background: Pain and the Peripheral Sensory Nerves

One promising approach is to downregulate or "deflate" the peripheral sensory nerves which supply the skin. When these nerves are irritated, certain points along the peripheral nerves, especially where the nerve comes through the fascia to the skin, are tender to the touch. This represents more than sensitive skin; it can mean the nerves are chronically inflamed, which can initiate a vicious cycle of pain.

Pain is mediated through sensory nerves. The skin is amply supplied with sensory nerves. These surface nerves, the peripheral sensory nerves, are in the anatomy books, but none of us - DCs, MDs, PTs or LMTs - has been taught to focus on them. When these nerves are inflamed, they are palpable as small, swollen, tender noodles.



Hilton's law comes into play here, which John Hilton defined in 1863 as "The principle that the nerve supplying a joint also supplies both the muscles that move the joint and the skin covering the articular insertion of those muscles." When the peripheral sensory nerves are bombarding the dorsal root ganglia with abnormal signals, the brain gets the message that the whole area is unhappy, including the deeper joints and muscles. Neuropathic pain is often experienced as a broad area of pain, and thus is hard to isolate to one spot.

John Lyftogh, MD, has developed a method to treat chronic neuropathic pain via subcutaneous perineural injections of 5 percent dextrose. He sees immediate changes in the patient when he performs this treatment, commonly known as neuroprolotherapy or peripheral injection therapy. He has published [several papers](#) in peer-reviewed journals on this model.

Dr. Lyftogh has an elaborate hypothesis on the neurophysiology of this phenomena. I am not well-educated enough in neurophysiology to know if his theory is accurate; however, I am enough of an observer to have seen patients remarkably helped by this therapy.

One of the fascinating parts of this hypothesis is that it includes nerve entrapment in the fascia. Dr. Lyftogh calls these entrapment points *chronic constriction injuries*. Think of the old-school chiropractic hypothesis: The garden hose of the nerve is being compressed when bones are out of place in the spine. Suppose Old Dad Chiro was right, except that he had the wrong nerves in mind, and the spine is only one of the many places that the nerves can get irritated.

Looking at the spine from this model, the issue is more about the dorsal root ganglia (DRG). The DRG, just outside the spinal canal, is where all of the sensory nerves from one area come together and send their signals up the spine to the brain.

I was first exposed to these ideas four months ago. The concept is fascinating. The application, without dextrose injections, is still in process for me.

What have I learned? I have learned to palpate and appreciate irritated peripheral sensory nerves. This is not a little thing; this is a huge addition to my skills. I further appreciate that when I can eliminate tenderness and swelling in peripheral nerves, deeper pain often diminishes. I have found tools that decrease the immediate tenderness of the neural points. Sometimes, this work is a breakthrough for the patient. Whether this produces long-term downregulation of the inflamed nerves and lasting pain relief varies. In a successful case, whether with injections or with non-invasive methods, pain levels gradually decrease, and the area of pain and the number of tender points shrink.

This model has made me further appreciate [Robert Maigne's](#) contributions, especially his work on the thoracolumbar junction (TL) as a source of lower back pain through irritation of the superior cluneal nerves. Let's outline a protocol for palpation and treatment of the peripheral sensory nerves, focused on lower back and pelvic pain.

Palpating for Irritated Nerves

The first step is to identify the sensitized nerves, both at their origin at the spine and along their course. The diagnosis and treatment outlined as follows is an expansion of the concepts from my [previous article](#) on the thoracolumbar junction [Nov. 4, 2011 *DC*]. I am convinced that a large percentage of lower back pain has at minimum a contribution from TL junction dysfunction, at T10 through L3, rather than in the lumbosacral area where the patient usually complains of pain.

On the spine, between T10 and L3, do your usual motion palpation, and find the restricted and tender joints. Maigne is skeptical of our palpation for restriction, and advises the practitioner to focus on tenderness. Maigne looks for tenderness over either the spinous processes or the facets. I palpate for both restriction and tenderness.

The patient does not usually complain of pain at the TL junction region. The dysfunctional spinal segments contribute to or cause distal referred pain. The upper lumbar is challenging to palpate either prone or sitting. As these segments are at the apex of the lumbar lordosis, we often need to position the spine out of lordosis, into slight flexion, to find the restriction or tenderness.

Next, go to the iliac crest. Just below the crest you will find a series of points that are often quite tender and swollen. Maigne describes an osteofibrous tunnel, 7-8 cm lateral to the midline, where usually L1 or occasionally the L2 or L3 nerves come through. Lyftogh adds another tunnel, about 10-12 cm lateral to midline, where the T10 or T11 nerve comes through. These are the two usual tender points, but explore the whole line of tissue just below the iliac crest.

These are not classical trigger points. These are palpable inflamed nerves. The more medial one is along the course of the superior cluneal nerve. I think the best name for the more lateral one is to

call it the T10 nerve (although it may be another branch of the superior cluneal). If you look at Maigne's dissections, you will note the variability in the course of these nerves; let your hands guide you.

Draw lines between the spinal restricted segments and the iliac crest points, and continue the line down to just above the greater trochanter. Use palpation and/or skin rolling to find tender and constricted areas or points along these lines. These are the points you are going to treat. (There are a series of nerve lines along the lateral hip, which we will not detail today.)

Another significant set of nerves is the middle cluneal nerves. These follow horizontal lines starting just lateral to the sacrum. Middle cluneal irritation may be associated with SI joint area pain or dysfunction.

Potential Treatment Tools

My treatment of irritated cluneal nerves has evolved since 2011. Spinal manipulation itself is not enough. If these are inflamed nerves that have a "double crush" type of problem, you are going to need to treat at least the two constriction points, and ideally all along these lines. One major point is at the spine, where the spinal dysfunction contributes to the nerve's entrapment; the other is just below the iliac crest. If these are inflamed places, our pro-inflammatory deep tissue may not be the most effective tool to treat the hot spots.

You know how to treat the spine. Adjust it, mobilize it. Within the joint-by-joint model, this is within the stiff region, the thoracics or thoracolumbar, so inducing motion fits that model as well.

The rest of this treatment plan goes beyond spinal manipulation alone, addressing direct treatment of the inflamed nerves. Here are some other tools that may be effective directly over the nerves:

Light therapy seems to immediately decrease tenderness over the sensitized nerve. These nerves are very superficial. I seem to equally good results with LED or laser. If the target tissue is superficial nerves, we don't need much power to reach them. Red light at 660 nm does not penetrate as deeply as infrared at 808 nm. Again, we are not trying to treat deep structures, but superficial nerves, so start with red 660 nm light. I have owned and used lasers and LED for more than 20 years. If you have a laser, use it.

Topical dextrose is another fascinating tool. Dextrose is the sugar the body uses for biological function. Topical dextrose is cheap, the patient can use it twice daily at home, and it often seems to work well.

Is dextrose downregulating the nerve? Is it feeding the nerve? I test topical dextrose by rubbing it into the area of the tender nerve. If it is going to work, the area will immediately (within 30 seconds) start to become less tender. I seem to have success with this test in at least 80 percent of my patients. When the patient starts home use, the success rate seems to drop to about 50 percent.

Topical dextrose is not the whole answer, but it is another useful tool. One of the issues with dextrose lotion is how well it is absorbed through the skin. You can probably increase your success with dextrose cream by pushing it into the tissue with pulsed ultrasound. I know of several sources of topical dextrose, but you can also make your own by mixing 12-24 percent dextrose with a high-quality skin lotion.

What about *soft-tissue* work? Gentle, subtle soft-tissue treatment is likely to be more effective on inflamed, swollen nerves. Deeper, heavier soft-tissue treatment may just create more inflammation when applied directly over the inflamed nerve.

I use variations on counterstrain or tissue approximation. Shorten or slack the tissues around the irritated nerve. *Tissue approximation*, a term and concept I learned from Walter Libby, a massage therapist who adapted counterstrain to work on the supine or prone patient, is a simple method. Place one finger or thumb on the tender point. Gather or push the surrounding tissue toward the point. If you are going the right direction, the point will immediately become less tender. Hold for 90 seconds, slowly release and then recheck to feel if the point remains nontender.

Diane Jacobs, PT, has developed an indirect, gentle [soft-tissue model](#) for working on the peripheral nerves.

Tapping the tender points may be helpful. I wish that I could use dry needling; I suspect that might work well. I also utilize electrical stimulation with good success. I am curious how well frequency-specific microcurrent might work.

Whatever tools you decide to use, follow a best-practices approach. Assess, treat, reassess. The tenderness should be gone right away. Range of motion, if limited, should increase. Pain levels ideally should decrease immediately.

It is important to reassess, as you may have missed significant irritated nerve areas, or your initial therapy may not have been enough. This model is all about treating the nerves directly. I suspect you will get the best results when you use your whole toolbox, including rehab.

This approach, assessing and treating peripheral nerves, is not the complete answer to lower-back or any other pain. However, sensitized peripheral nerves give us another window into pain and the nervous system. Few of us have paid any attention to these nerves. Assessing them may give us another tool to monitor the effect of any treatment.

Editor's note: Readers with ideas for further enhancing downregulation of peripheral nerves are encouraged to contact the author via email at marchellerdc@gmail.com.

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