Managing Neuropathy And Pain In Wound Care Patients

Kazu Suzuki, DPM, has started using the Dynamic Neuroscreening Device, shown here, which measures large fiber neuropathy (using the vibratory test) and small fiber neuropathy (using the two-point temperature discrimination test).

Given the challenges of addressing neuropathy in patients with wounds, these expert panelists discuss diagnostic keys and share insights on treatments including medications, non-pharmaceutical treatments and adjunctive options.

Q: How often do you encounter neuropathic patients and how often do you schedule them for treatment?

A: Kazu Suzuki, DPM, CWS, sees neuropathy daily in his institution in new and established patients. He notes that many of his patients have diabetes, are on chemotherapy and are otherwise elderly and have multiple comorbidities.

“What astounds me is the number of patients I see with idiopathic neuropathy with no clear-cut cause for neuropathy,” says Dr. Suzuki. “They come into our wound care center with foot wounds that resemble textbook diabetic foot ulcers, often involving the submetatarsal heads for the ambulatory patients or occurring over the lateral or medial malleolus for bedridden patients.”

David Shofer, DPM, MSHS, sees patients who are at low risk for neuropathy every three months. He says this population includes those with controlled diabetes and patients without positive sensory symptoms. Other patients may need to present for treatment more frequently, according to Dr. Shofer. He says these patients include those in the process of adjusting medications for neuropathic pain and patients with diabetes who are prone to developing heavy calluses or pre-ulcerative lesions, who have had previous amputations and/or peripheral arterial disease.

Q: How do you diagnose and assess neuropathy?

A: Interviewing the patients is the fastest and easiest way for Dr. Suzuki to diagnose neuropathy. He points out that most patients are acutely aware of their “numb feet” problems or “tingling” sensations, or otherwise painful foot conditions of varying degrees. Similarly, Cynthia Cernak, DPM, makes use of a neuropathy screening questionnaire and also uses the Electronic Tuning Fork (O’Brien Medical) battery powered device, which gives a digital read out to track neuropathy quantitatively.

Dr. Shofer uses a Semmes-Weinstein monofilament (5.07/10g) to test protective sensation. Noting there is research supporting using fewer points, he still uses a 10-point monofilament examination.

Dr. Suzuki argues that the monofilament test is not very sensitive and by the time the patient fails the monofilament test (not being able to feel the “poking”), he or she has “a profoundly severe neuropathy and it may be too late to intervene.”

For vibratory sensation, Dr. Shofer will place a tuning fork at the base of the great toe adjacent to the extensor tendon. After the patient identifies that he or she cannot feel it, Dr. Shofer places the fork against his wrist. “If I can feel it, I will count and record the seconds until I can no longer feel it. I will then move to other neurologic tests depending on the patient presentation,” he says.

Dr. Cernak cites the use of studies of large and medium nerve fibers, saying these are most useful in assessing asymmetric neuropathy. She will also look at nerve conduction/electromyography (EMG) A-delta nerve conduction studies as well as AP and lateral lumbar spine X-ray for flexion and extension. Dr. Cernak also looks at the efficacy of the Pressure Specified Sensory Device (PSSD, Sensory Management Services).

Dr. Suzuki has also started using a new neuropathy measuring device called the Dynamic Neuroscreening Device (DND, Proxene), which measures large fiber neuropathy (using the vibratory test) and small fiber neuropathy (using the two-point temperature discrimination test). He says the device replaces tuning forks and monofilaments, allowing one to measure...
and track the improvement or progression in patients' nerve conductivity in the lower extremities.

"Using DND, I have noticed that most patients have one extremity more diseased (in terms of peripheral neuropathy) than the other, much like peripheral arterial disease," adds Dr. Suzuki.

Q: What non-pharmacologic approaches are helpful for addressing neuropathy?

A: All three panelists stress blood glucose control in patients with diabetic neuropathy. If the blood sugars are not adequately controlled, Dr. Shoffler may counsel patients regarding appropriate diet or correspond with their primary care doctor. Dr. Suzuki has found that fluctuations in blood sugar often correspond with spikes in neuropathic pain.

Dr. Suzuki notes some of his patients have experienced an improvement in diabetic neuropathic pain or the pain has disappeared after patients overhauled their diet and eliminated simple carbohydrates.

Dr. Suzuki also adds that plant-based diets can prevent and treat type 2 diabetes "although it's not easy to convince your patients to eat healthier!" Dr. Cernak advises replacing vitamins such as B6 and B12. She cites studies showing that products like MetanX (Nestle Health Science-Pamlab) with vitamins B6 and B12 are helpful in treating some of the symptoms of diabetic peripheral neuropathy. She advises checking the levels of these vitamins as they are not too high or too low.

Furthermore, Dr. Shoffler notes exercise is important for patients with diabetic neuropathy and one should encourage them to maintain an active lifestyle.

Q: What is your prescribing regimen for pain medications and neuropathy medications?

A: After verifying appropriate glycemic control, Dr. Shoffler will suggest alpha lipoic acid. If there is a lack of response, he will typically have the patient begin gabapentin (Neurontin, Pfizer) 300 mg three times daily and titrate upward based on patient response. Dr. Suzuki uses gabapentin 100 mg qhs as a first-line option, raising the dosage depending on the patient response. He warns patients that this medication may cause drowsiness but they often welcome that side effect, given that most may be sleep deprived from the neuropathy.

If the patient does not respond to gabapentin or cannot tolerate the medication due to adverse drug reactions, Dr. Shoffler will move to pregabalin (Lyrica, Pfizer). Dr. Suzuki will also use pregabalin with a starting dose of 50 mg tid, noting it is chemically similar to gabapentin.

Dr. Cernak will use both gabapentin and pregabalin, but notes those agents will treat the symptoms but not the cause of neuropathy.

Dr. Suzuki also notes duloxetine (Cymbalta, Eli Lilly) as a newer medication that is indicated for diabetic neuropathic pain as well as chronic musculoskeletal pain. He cautions against using duloxetine if patients have renal impairment (creatinine clearance < 30), which may be the case in some patients with diabetes.

Dr. Suzuki notes opioid medications, such as hydrocodone or oxycodone, may have a role as rescue medications. However, Dr. Suzuki tries to prescribe those as a last resort for the treatment of neuropathic pain as neuropathy is often a lifetime condition and he does not want his patients to be dependent on opioids.

"As with treating any other specialized medical condition, I think it's a good idea to get a neurologist and pain management specialist involved if you find that you are not managing the neuropathic pain adequately on your own for your patients," advises Dr. Suzuki.

Q: Do you use any adjunctive pain management or therapies (such as topical medications or medical devices) or refer patients for other adjunctive modalities such as psychotherapy?

A: Dr. Cernak and Dr. Shoffler will consider both capsaicin patches and lidocaine patches (Lidoderm, Endo Pharmaceuticals). Dr. Cernak also cites the use of Fast Freeze (DJO Global) and diclofenac (Voltaren, Endo Pharmaceuticals).

While Dr. Shoffler does not use other medical devices and infrequently prescribes topical medications, he will refer patients to pain management or physical therapy for additional modalities. Dr. Cernak cites the use of combined electrochemical treatment and decompression of nerve entrapment for patients with a positive Tinel's sign. She notes that she has a "neurosurgeon and pain clinic on speed dial."

Dr. Suzuki has experimented with topical compounded pain medications in the last few years but has had better results with trying oral medications first. He often recommends transcutaneous electrical nerve stimulation (TENS), which patients can purchase from Amazon for $30 to $40.

Dr. Suzuki says TENS units are perfectly safe alternatives to oral medications or adjunctive treatments as long as patients do not have a pacemaker or other implantable cardiac device. He notes patients can use TENS as often as they like as it can block out the pain signal coming from the feet to the brain.

Given that anxiety and depression have a strong connection to physical pain, Dr. Suzuki thinks it is "perfectly reasonable" to consider referring patients to a psychotherapist or psychiatrist.

Dr. Cernak is affiliated with Wisconsin Neuropathy Center as part of the Well Foot and Ankle Institute in Kenosha, Wis.

Dr. Shoffler is an Assistant Professor at the Western University of Health Sciences College of Podiatric Medicine in Pomona, Ca.

Dr. Suzuki is the Medical Director of the Tower Wound Care Center at the Cedars-Sinai Medical Towers. He is also on the medical staff of the Cedars-Sinai Medical Center in Los Angeles and is a Visiting Professor at the Tokyo Medical and Dental University in Tokyo. Dr. Suzuki can be reached via e-mail at Kazu.Suzuki@CSHS.org.

References:


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