



PNT Improves Function and Enables Physical Therapy in Patient with Debilitating Subacute Low Back and Leg Pain

Summary

A female patient's incapacitating subacute low back and associated leg pain prevented her from working and carrying out daily activities. The pain also prevented her from engaging in physical therapy, despite treatment with nonsteroidal anti-inflammatory drugs and manual medicine techniques. In this case, percutaneous neuromodulation therapy (Vertis PNT™) markedly improved the patient's ability to function by promptly and significantly reducing pain, enabling her to participate in physical rehabilitation and, ultimately, return to work. The therapy also eliminated the need for other therapies, including epidural steroid injections. Vertis PNT is a new, minimally invasive therapy for low back pain involving the delivery of electrical stimulation to the peripheral nerve pathways using temporarily placed, fine-gauge filament electrodes.

Clinical History and Presentation

This 52-year-old woman had an acute onset of low back pain in early May 2001 due to casual twisting and bending. Her low back pain progressed quickly to her left lower extremity. The patient tried managing her pain using home exercises and stretching, as well as over-the-counter medications, primarily ibuprofen. Despite these efforts, her pain worsened until she was almost completely incapacitated. She also was unable to sit for any length of time. The pain severely impeded her daily activities, limiting her ability to perform her duties as a massage therapist.

The patient was evaluated at St. Mary's Spine Center six weeks after the onset of pain. Her symptoms were consistent with nerve root irritation. An MRI of the lumbar spine showed a cyst on the left L4-L5 facet that contacted the exiting L5 nerve root. Initially, the patient was

treated conservatively with manual medicine techniques, including gentle osteopathic manipulation of the lumbar spine. These therapies, however, did not reduce the patient's pain. At that time, epidural steroid injections and other treatment options also were considered, including surgery.

The patient met the inclusion criteria for a multicenter PNT clinical study being conducted at St. Mary's Spine Center and was enrolled in the trial in late June 2001.

PNT Results

As a participant in the clinical trial, the patient underwent weekly, 30-minute PNT treatment sessions over a period of five weeks. During PNT, an array of fine-gauge electrodes, housed in sharps-safe casings, are temporarily inserted to a depth of 3 centimeters. Electrical stimulation is delivered to the deep tissues in

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order to reach peripheral nerve pathways that lead to the dorsal horn of the spinal column.

Before the first PNT treatment, the patient reported the severity of her low back pain as 5 out of 10 and the severity of her left lower extremity pain as 8.5 out of 10 on a visual analog scale (VAS), with 10 being the “worst pain imaginable.” After the first PNT session, which occurred on June 27, 2001, the patient showed impressive, almost immediate, improvement in her pain. One week after her initial treatment, the severity of her leg pain was reduced to 3 out of 10, and her low back pain to 4 out of 10.

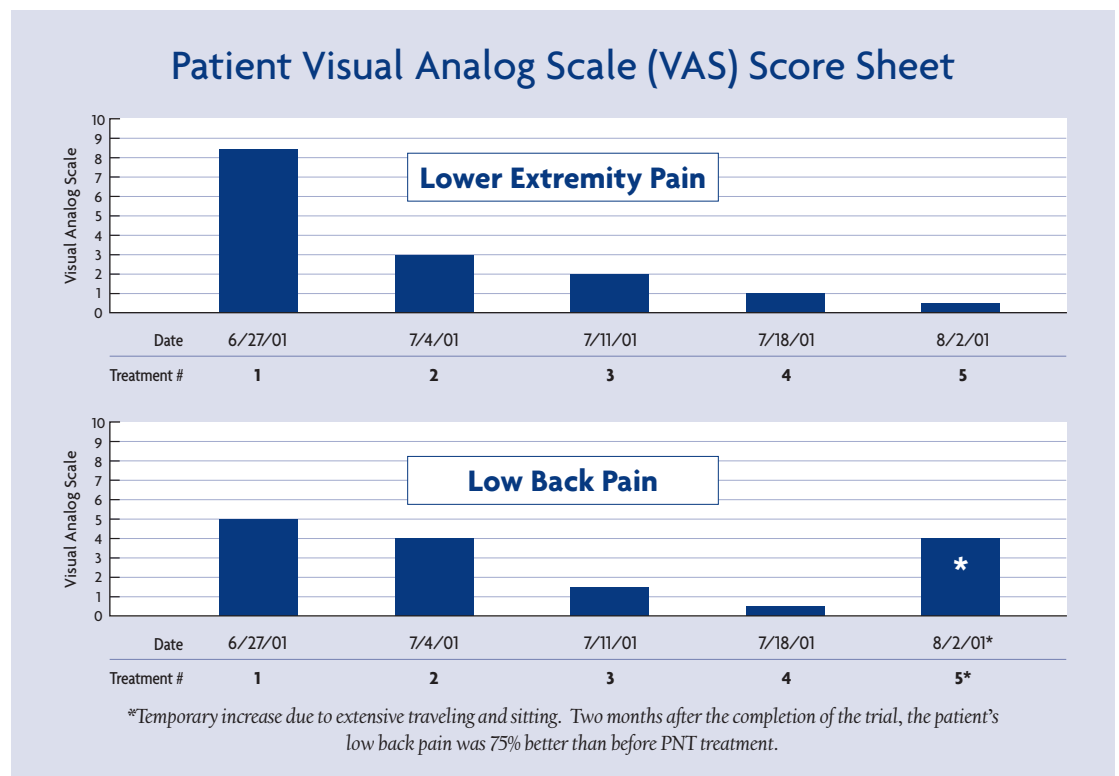
After subsequent treatments, improvement continued, with the patient reporting progressive and lasting pain reduction. In her third week of treatment, back pain had decreased to 1.5 out of 10 and leg pain to 2 out of 10. With the reduction in pain, she was able to begin

physical therapy, including exercise and biomechanics training. After her fifth, and final, PNT treatment, pain continued to be at reduced levels. In particular, her leg pain, which had been the most disabling, was 0.5 out of 10. Her low back pain temporarily rose to 4 because the patient had been traveling frequently and had been sitting for extended periods.

During a follow-up visit two months after the completion of the PNT trial, the patient reported that her low back pain was 75% better than when she presented to the clinic, and her leg pain was nearly 100% resolved. She has returned to work and is engaged in almost all the activities she participated in prior to the onset of her pain.

Discussion: Improving Function

Patients with the potential for recurrent pain due to nerve root impingement require a long-term approach to pain management and mechanical disruption



that typically includes exercise, conditioning, and correct posture. While some modification of activity may be necessary during the early acute phase, patients recovering from low back pain are encouraged to resume their normal activities as soon as possible. In fact, a growing body of evidence indicates that early intervention during acute (pain lasting for up to four weeks) and subacute (pain lasting from 1–6 months) episodes of low back pain can help stem the more severe problem of chronic, unremitting low back pain.

Without adequate pain control, however, these patients often are unable to engage in physical therapy programs and other treatments. In the case reported here, PNT played a pivotal role in helping this patient regain her activity levels and tolerate physical rehabilitation.

Management of Subacute Low Back Pain
St. Mary's Spine Center is a multidisciplinary clinic that evaluates and manages challenging musculoskeletal and spine injuries and pain. It specializes in orthopedic spinal surgery, physical medicine and rehabilitation, and neurology, with many of its patients referred by other physicians. The patient discussed in this case study was self-referred, having been to the clinic some years before for an unrelated hand injury. It is believed that the timing of her presentation with back and leg pain, which fell within the window recommended by the North American Spine Society and the American Academy of Orthopedic Surgeons for early referral of back pain to musculoskeletal specialists, contributed to her positive outcome. For patients with

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subacute low back pain, musculoskeletal specialists offer not only diagnostic expertise but also therapies such as PNT that may not be available from primary care physicians. Treatment options such as PNT can promote both reduced pain and recovery of function.

In summary, PNT helped reduce pain and improve function in this patient with disabling subacute low back and associated leg pain, enabling her to engage in exercise and other therapies. As this case indicates, PNT may render some commonly used therapies unnecessary, avoiding expensive and more invasive alternatives. In particular, without the option of using PNT, this patient would have been offered an epidural steroid injection and was considered a surgical candidate when her films were presented to a spinal surgeon. ■

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