

AMELIORATION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV)-ASSOCIATED NEUROPATHIC PAIN WITH SPINAL CORD STIMULATION (SCS): CASE REPORTS

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Peripheral neuropathy is the most common neurologic complication of human immunodeficiency virus (HIV) infection, and may be caused by the virus itself, by antiretroviral drug toxicity, or by opportunistic infections. Symptoms include debilitating pain combined with burning, numbness, tingling, and/or stiffness in the feet and toes. Patients with HIV-associated neuropathy are encouraged to take palliative measures such as wearing more comfortable shoes and avoiding long periods of standing or walking, and to consider discontinuing the offending medication(s). Often, such strategies are inadequate for long-term pain relief or contribute to a decrease in quality of life. Patients therefore turn to pain medications, including narcotics. For a significant portion of patients with neuropathy, pain medications are also inadequate or have unacceptable side effects, leaving patients with few options for their considerable pain. (1, 2)

Spinal cord stimulation (SCS) is a non-drug pain management strategy that is highly effective for pain of neuropathic origins. SCS devices use electrical impulses to block pain from being perceived in the brain. A typical SCS system is fully implanted inside the body: one or two leads or wires connect electrical contacts in the epidural space near the spine to a pulse generator located in a shallow pocket in the subcutaneous fat (Figure 1). Mild electrical current is then applied to the contacts, which stimulate the dorsal columns of the spinal cord. After programming of the SCS system, patients typically perceive that the pain has been replaced with a non-noxious paresthesia. (3)



Figure 1: SCS leads are placed into the epidural space overlying the dorsal columns of the spinal cord and subcutaneously tunneled to an implanted pulse generator in a pocket under the skin.

Can HIV-associated neuropathic pain be managed by spinal cord stimulation?

METHODS

Five HIV-positive male patients in their thirties were seen at a pain management practice for treatment of severe HIV-associated neuropathies of the distal lower extremities. All of the patients had exhausted conventional pain management options and were dependent on large doses of opiates and anticonvulsants. Despite the pharmacological interventions, the pain was unbearable and for some patients approached 10 on a 0-10 scale of severity. Thus, the patients underwent a temporary trial period of spinal cord stimulation and reported significant pain relief. All five patients were then implanted with bilateral 8-contact epidural percutaneous leads at T9 and a rechargeable pulse generator (Precision™, Boston Scientific) (Figures 2 and 3).

RESULTS

The patients reported substantial pain relief after implantation of the permanent SCS system; in some cases, as much as 70% of the pain was relieved. As a result, patients were able to reduce or altogether stop the use of pain medications. Additionally, patients were better able to walk and those who had been disabled by the pain were able to return to work. The assuagement has been durable through the year since implantation.

Spinal cord stimulation effectively relieves HIV-associated peripheral neuropathy, allowing reductions in pain medication and return to work.

CONCLUSIONS

After having exhausted conventional pain management options for their HIV-associated neuropathy, the five patients seen by this pain specialist were 'rescued' by SCS therapy. Because SCS therapy is minimally invasive, reversible, and can be tested for efficacy prior to permanent implantation, it represents a viable non-drug option for patients who face significant challenges due to their pain.

We encourage the consideration of SCS for the management of HIV-associated neuropathy.



Figure 2: The Precision implantable pulse generator and two percutaneous leads.

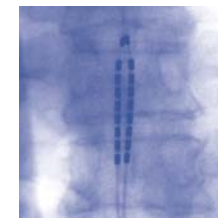


Figure 3: A representative fluoroscopic image showing two percutaneous leads placed in the epidural space.

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Data were gathered in medical practice.