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Small fiber Neuropathy successfully treated with SCS, a case report

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Abstract
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Abstract

Background:

Spinal cord stimulation (SCS) is a pain treatment based on electrical stimulation delivered to the spinal cord through various electrodes located in the epidural space. SCS is a useful technique for selected painful conditions such as Failed Back Surgery Syndrome (FBSS), radiculopathies and Complex Regional Pain Syndromes (CRPS) type I and II, when conservative treatments have failed. Beyond these indications, case reports regarding other painful diseases have been reported, i.e in the Small Fiber Neuropathy (SFN), a rare polyneuropathy that afflicts small delta and C fibers with chronic and widespread neuropathic pain.

Methods:

A 22-year-old female patient diagnosed in 2019 for small fiber neuropathy by skin biopsy reported pain mainly localized to the extremities with allodynia. Several pharmacological treatments with different drugs, such as strong and weak opioids, antiepileptic-anticonvulsants and NSAIDs, failed in controlling chronic pain. During the first evaluation, the patient showed uncontrolled pain with a severe impact on walking and other daily activities (ODI 80/100, VAS 9). Neuropathic pain was confirmed by LANSS score (24/24) and DN4 score (9/10). SCS was then proposed to patient. After a successful single-electrode trial of 8 days with a pain reduction > 80%, the patient undergoes to definitive SCS implant with a pacemaker Boston alpha 32 located in the left gluteal pocket and a single lead placed with the distal poles at T7. A tonic stimulation was set (PW 250 msec, freq. 40 Hz, A. 3,4 mA) with paresthesias extended from lumbar area to lower limbs.

Results:

The 12 months follow-up evaluations showed a clinically significant improvement in pain and ambulation. The quantitative scores decreased up to 50% or more (ODI 46/100; VAS 4) and the qualitative ones up to 70% (LANSS 7/24; DN4 2/10). Until now the patient hasn't reported any pain relapse or exacerbation and she carry on a progressive decrease of opioids use.

Conclusion:

Tipically, the treatment of SFN involves the identification of the etiology and the prevention of further damages, but often this process takes time and doesn't lead to a defined response, making empirical treatment of pain a priority. In these cases, the chance of alternative strategies cuts the time required to achieve adequate results. On this point, SCS becomes a weapon that leads to long-lasting results quickly and safely.

Although the use of SCS is expanding rapidly, there are still few data in literature regarding its use in diseases like SFN. This short description underline its emerging role in the treatment of these disabling conditions, as a beginning point for extending and targeting its use.

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