Clinical Pain Advisor

Reduced Paresthesia With DRG vs SCS Stimulation for Chronic Pain

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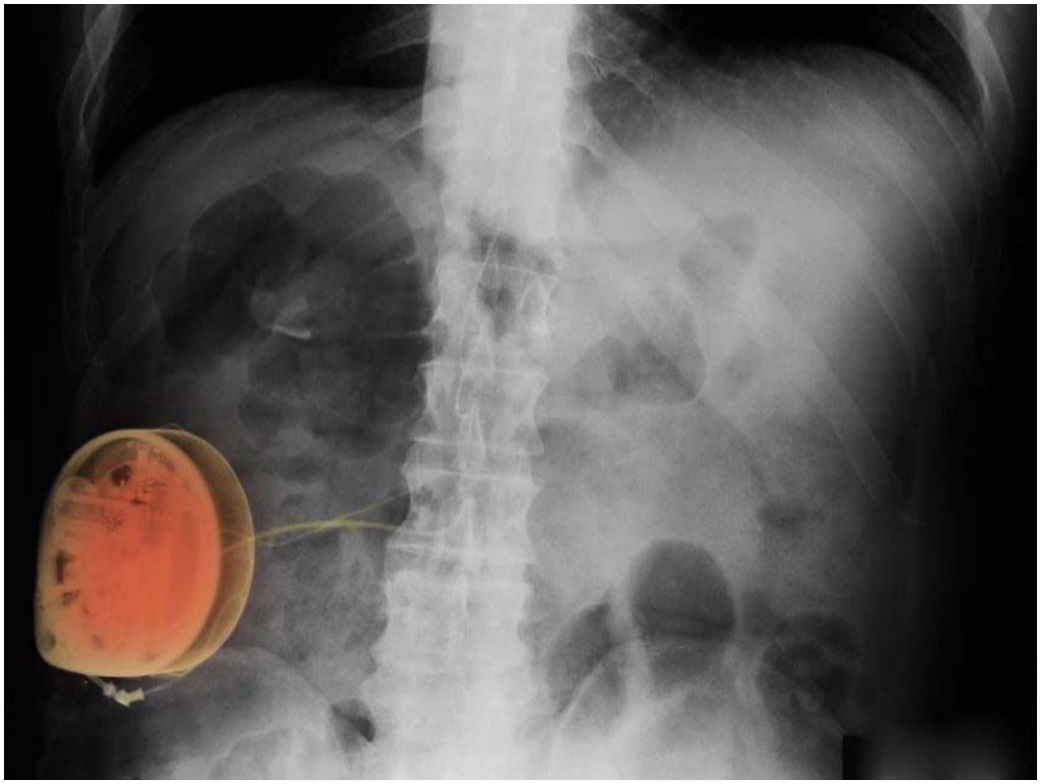

Dorsal root ganglion stimulation allows targeting of specific sensory afferent fibers and corresponding somatotopic areas.

Dorsal root ganglion stimulation (DRG) for chronic pain may be associated with paresthesia with reduced coverage area, intensity, and frequency compared with tonic spinal cord stimulation (SCS), according to a study published in *Neuromodulation*.

Although SCS has proven effective in the management of chronic intractable trunk and lower limb pain, DRG stimulation — which allows targeting of specific sensory afferent fibers and corresponding somatotopic areas — may offer additional benefits, including lower required amplitude and reduced possibility for overstimulation or understimulation because of movement.

A total of 75 participants (n=34 receiving SCS; n=41 receiving DRG) from the ACCURATE study (ClinicalTrials.gov identifier: NCT01923285) were selected for retrospective subanalysis of paresthesia coverage of affected areas. The ACCURATE study, a prospective randomized controlled trial, was conducted to compare the safety and efficacy of SCS vs DRG in patients with complex regional pain syndrome I or II.

At baseline, participants were asked to indicate the location of their pain on a lower limb and torso map. Three months after implantation of a stimulation device (SCS or DRG), they were asked to mark the same maps to indicate areas of paresthesia coverage. The intensity of paresthesia was rated using a 0 to 10 numeric rating scale. Maps were scanned, digitized, and superimposed on a 1398 square grid to quantify the body area initially affected by pain and by stimulation-induced paresthesia at the 3-month follow-up.

At 3 months, 92.7% and 76.5% of patients receiving DRG and SCS, respectively, reported ≥50% pain reduction. Participants who were implanted with a DRG vs SCS device indicated a lower percentage of paresthesia-covered painful areas (13% vs 28%, respectively; P <.05). Of participants reporting ≥50% pain reduction at 3 months, a greater percentage of those receiving DRG vs SCS reported an absence of paresthesia (32% vs 9%, respectively; P <.05). Participants receiving DRG vs SCS indicated stimulation-associated paresthesia over lower percentages of total body area, both in supine (3.4% vs 12.4%, respectively; P <.05) and upright (3.1% vs 9.1%, respectively; P < .05) positions, as well as paresthesia of lower intensity (2.12 vs 3.91, respectively; P <.01) and frequency over the course of the month prior to the 3-month follow-up (34.1% vs 59.1%, respectively; P <.01).

Patients with DRG vs SCS implants had lower unrequired paresthesia (ie, paresthesia in nonpainful areas; 20% vs 210% of total painful area, respectively; P <.01).

“The results of this study show that DRG stimulation can effectively relieve pain while producing paresthesia, on average, that is less frequent, less intense, and with a smaller footprint on the body as compared to SCS,” concluded the authors.