



Rare Case of Complex Regional Pain Syndrome II Cured after Spinal Cord Stimulator Trial

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Introduction

Spinal cord stimulation has been successful in treatment of complex regional pain syndrome (CRPS)¹. There is paucity of information in the literature regarding spinal cord stimulation curing CRPS in the lower extremity². We present a case of cured CRPS type 2, after spinal cord stimulation (SCS) in a patient with history of bunion osteotomy corrective surgery.

Case Presentation

A 25 year old male with history of left hallux distal chevron and akin osteotomy bunion correction surgery (June 2023) presented for evaluation of refractory chronic neuropathic pain. Workup revealed likely etiology of his pain to be secondary to CRPS II (causalgia). His pain was characterized as unprovoked, frequent and random sharp shooting electric shocks in his left foot. It interfered with his ability to work or sleep due to intractable pain rated at a 10/10 in severity. He failed conservative management with physical therapy, opioids, neuropathic pain medications, and lumbar sympathetic nerve blocks (x6). Patient underwent successful trial with Boston Scientific FAST sub-perception SCS therapy. He is now cured from his CRPS symptoms completely after his seven day trial with pain levels now at 2/10 in severity with minimal episodes of electric shocks. He is able to sleep and has returned to work full time. Figure 1, shows programming settings and figure 2 shows lead placement. Patient informed consent was obtained for submission of a case report.

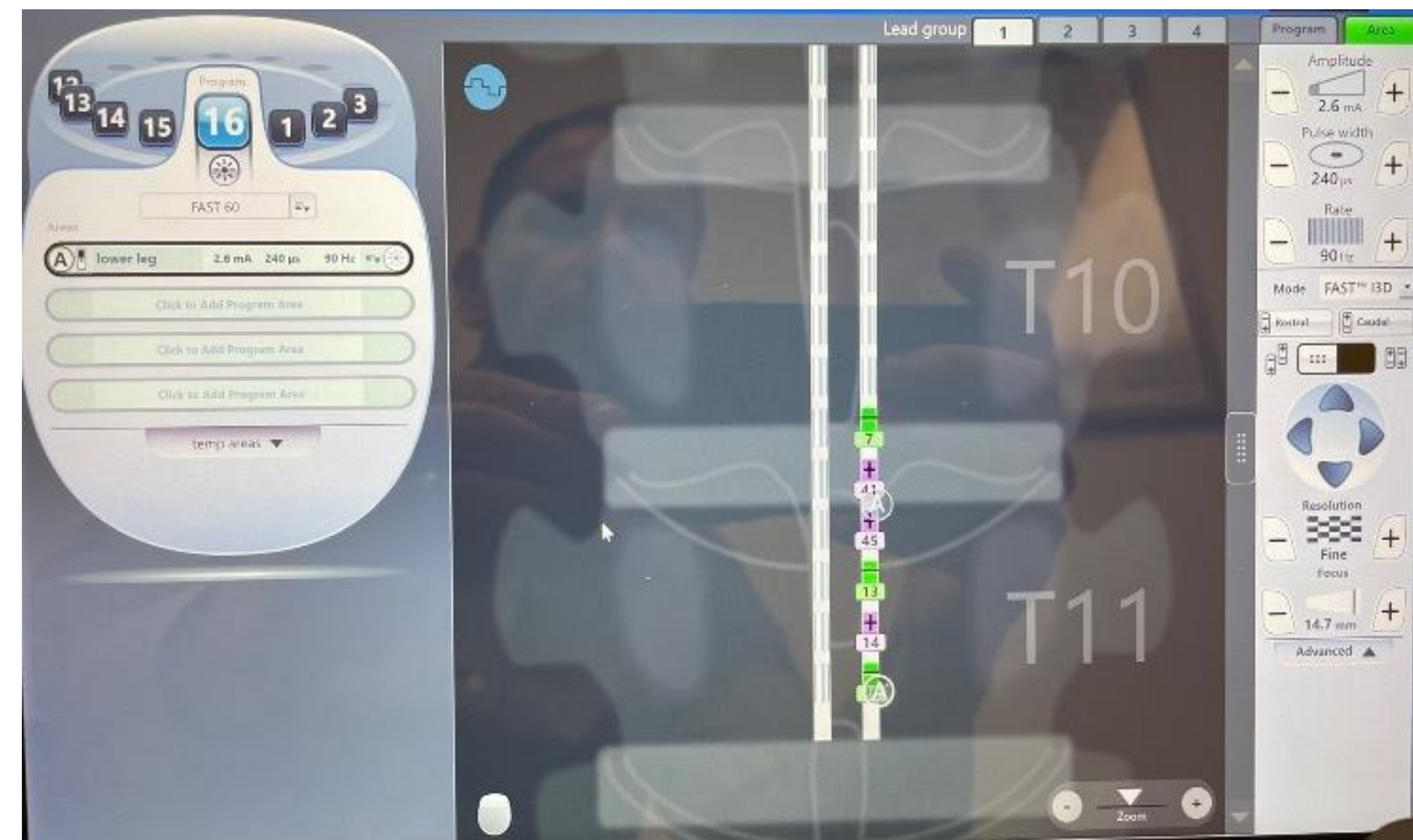


Figure 1. Boston Scientific FAST Therapy Programming. Amplitude 2.6mA, pulse width 240 μ s, frequency 90Hz. Stimulation with 4 hours at 30% perception followed by a bolus up to 70% perception for 20mins during the entirety of trial period.

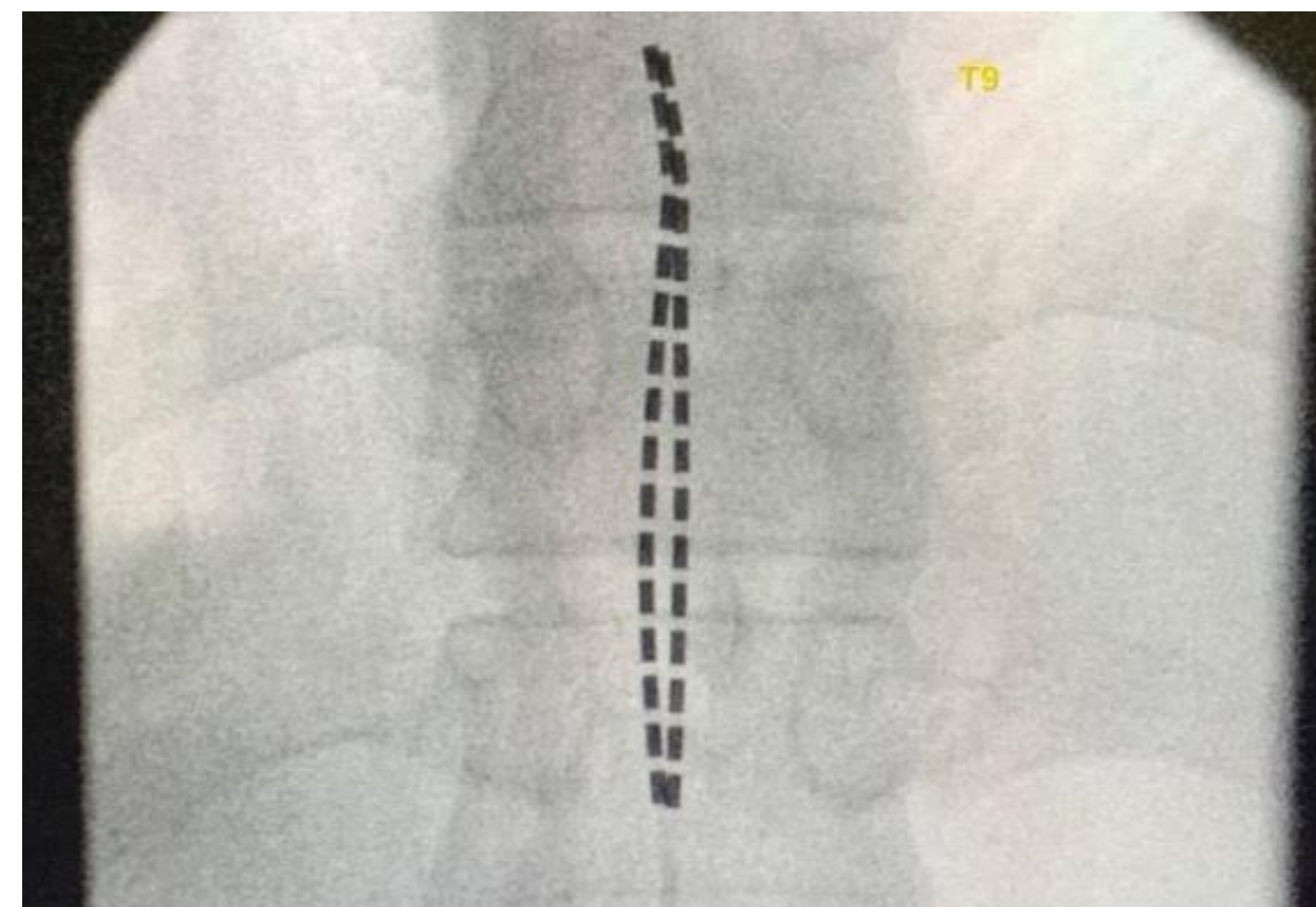


Figure 2. AP view of fluoroscopic image of percutaneous leads placed at T9-T12.

Discussion

To date there is currently no reliably validated “cure” for CRPS. There has only a few reports where SCS resulted in the complete eradication of the signs and symptoms associated with CRPS. This series involved adolescent girls aged 11–14 years of age, who tend to have a more benign and self-limited treatment course than that seen in adults. This raises the question as to whether a “neural switch” exists, and if so, where it is located and how can we target it. This case demonstrates the continued challenge posed by CRPS in understanding of the pathophysiology of it leading to the discovery of more effective treatment modalities.

Conclusion

Spinal cord stimulation may be curative for patients with sustained CRPS type II. Our case demonstrates this in a patient with CRPS type 2 secondary to bunion osteotomy corrective surgery.

References

1. Hoikkaenen T, Nissen M, Ikäheimo TM, Jyrkkänen HK, Huttunen J, von Und Zu Fraunberg M. Long-Term Outcome of Spinal Cord Stimulation in Complex Regional Pain Syndrome. *Neurosurgery*. 2021 Sep 15;89(4):597-609. doi: 10.1093/neuros/nyab239. PMID: 34245150; PMCID: PMC8440061.
2. Saranita J, Childs D, Saranita AD. Spinal cord stimulation in the treatment of complex regional pain syndrome (CRPS) of the lower extremity: a case report. *J Foot Ankle Surg*. 2009 Jan-Feb;48(1):52-5. doi: 10.1053/j.jfas.2008.10.003. PMID: 19110160.
3. Kayode A, Williams, Kau Korto, Steven P. Cohen, Spinal Cord Stimulation: “Neural Switch” in Complex Regional Pain Syndrome Type I, *Pain Medicine*, Volume 10, Issue 4, May 2009, Pages 762–766,
4. Olsson GL, Meyerson BA, Linderöth B. Spinal cord stimulation in adolescents with complex regional pain syndrome type I (CRPS-I). *Eur J Pain*. 2008;12(1):53-59. doi:10.1016/j.ejpain.2007.02.007