

New onset dizziness after adjustment in stimulation of spinal cord stimulator

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Introduction

- Neuromodulation with spinal cord stimulation (SCS) has been an effective treatment for various chronic pain conditions since 1967.
- After a percutaneous trial, permanent SCS leads are placed within the epidural space.
- The SCS uses waveforms to disrupt both peripheral and central mechanisms of pain by suppressing dorsal horn neurons and inhibiting the spinothalamic tract.
- This modulation interrupts pain signals being transmitted to the brain which leads to the decreased perception of pain.
- The implantable pulse generator (IPG) has programmable waveform settings to optimize pain control.

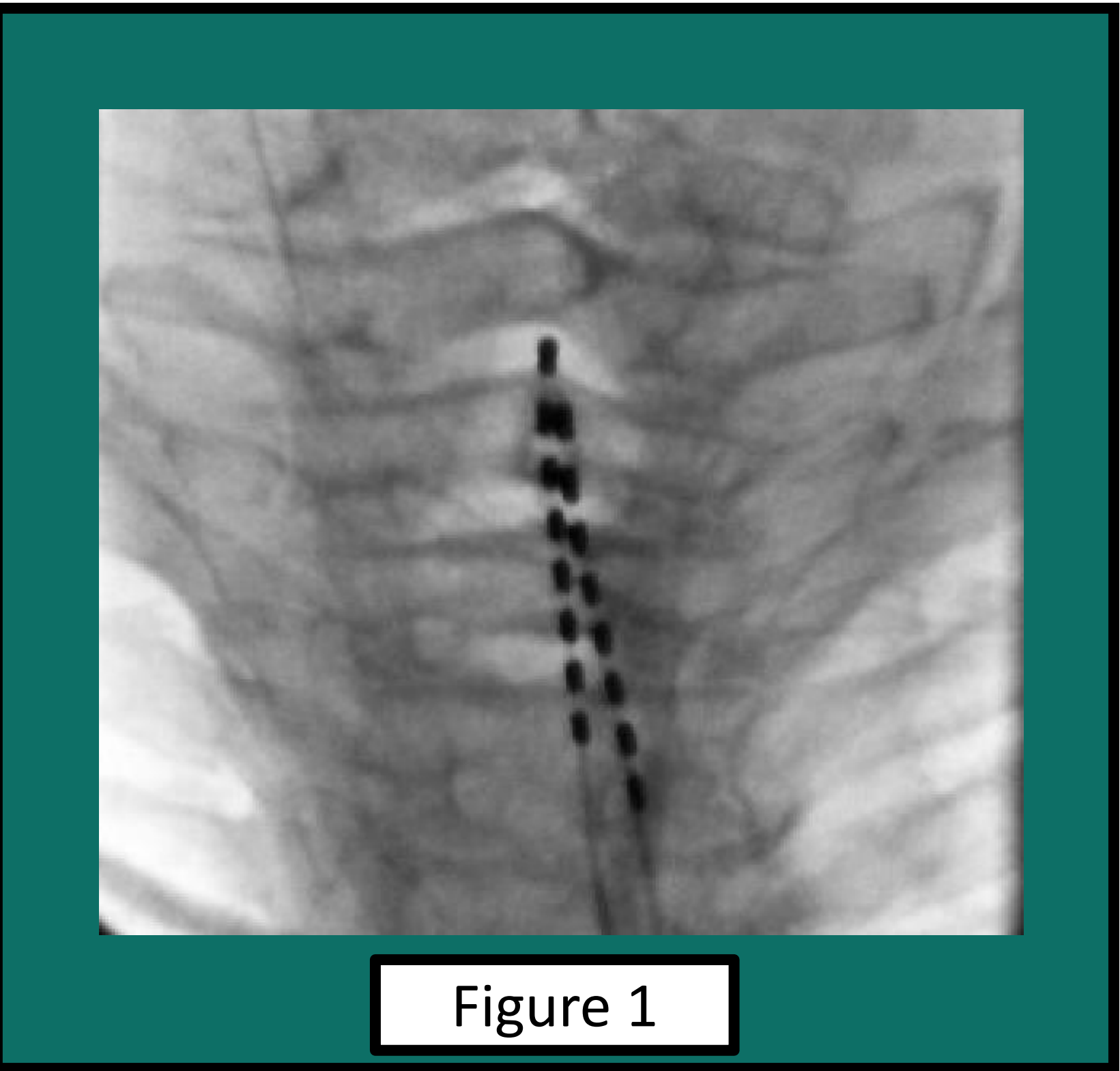


Figure 1

Case Report

- 75-year-old female with post herpetic neuralgia after a shingles infection in 2016 with pain in her right anterior chest wall, consistent with the T4 and T5 dermatomal distribution.
- Oral medications, topical medications, a T4/5 epidural steroid injection and targeted T4/5 intercostal nerve blocks were unsuccessful at providing adequate pain relief.
- She underwent a successful SCS trial with 75% pain relief, improved tolerance to clothing over the affected area and a restored ability to sleep through the night.
- A permanent SCS implant was placed with the right lead tip at the T2 level and the left lead tip at the T1 level (Fig. 1).
- In the following weeks after the device programs were set and the IPG activated, the patient adjusted the amplitude of her stimulator from 3.2 to 4.2 milliamperes (mA) and approximately two minutes later developed sudden dizziness and presyncope.
- She immediately turned the amplitude back to 3.2 mA and within five minutes her symptoms resolved. She underwent a negative workup for her symptoms with her primary care provider.
- To date, she maintains her SCS at an amplitude below 4.0 mA and has not had a recurrence of dizziness or presyncope.

Discussion

- There are several known potential complications and risks associated with SCS such as infection, pain at the generator site, hardware and lead complications, however adverse neurologic effects are not well documented in the literature.
- While dizziness and presyncope can be the presenting symptom of numerous underlying conditions, the temporal relation of her symptoms with the stimulator amplitude increase, and subsequent resolution of symptoms with a decrease in amplitude deserves adequate consideration.
- A literature review was performed, and a case report was found describing new onset tinnitus, vertigo, facial twitching, and perioral numbness after high-frequency spinal cord stimulator implantation, all of which resolved after deactivation of the device.
- Further exploration and documentation of uncommon complaints associated with SCS could help guide the process of determining SCS candidacy, identify risk factors for treatment-limiting complications, and improve patient safety.

References

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