

Introduction

- SCS is approved to treat chronic neuropathic pain, and has also been shown to aid in management of neurogenic bladder after spinal cord injury
- SCS impact on bladder function in cases of benign prostatic hyperplasia (BPH) remains unknown

Case Presentation

Demographic: 73-year-old male

History: BPH (nocturia 8-9x/night), GERD, HTN, osteoporosis, DDD and **idiopathic small fiber neuropathy in BLE** (15 years)

Prior management: activity modification, physical therapy, gabapentin, pregabalin and adalimumab with little benefit.

Intervention: The patient **underwent spinal cord stimulation (SCS) trial** for refractory neuropathic symptoms.

Methods

- SCS trial lead placement under fluoroscopic guidance
- Trial leads were placed along the midline of the T7 and T9 vertebral bodies

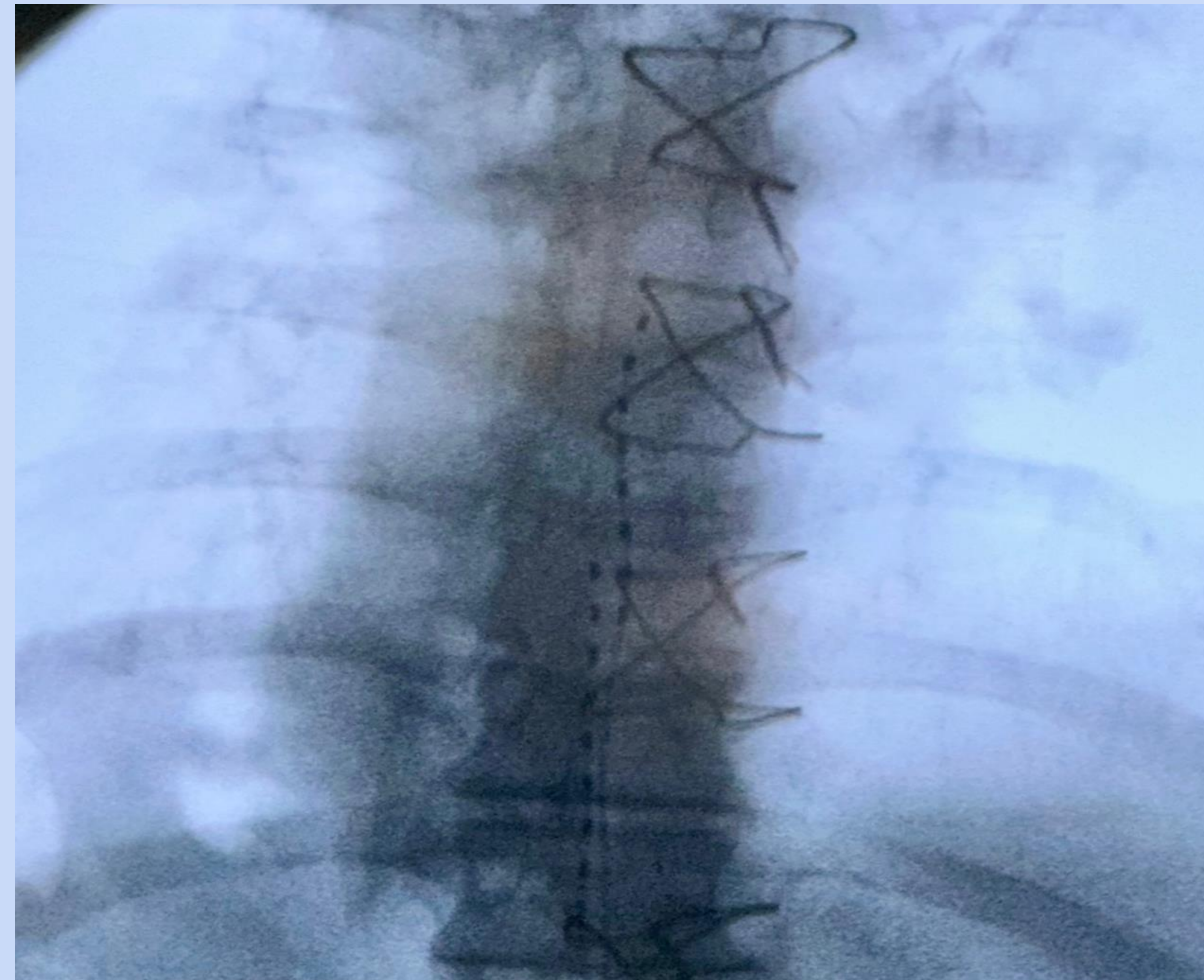


Figure 1: SCS Trial Leads along T7-T9 Vertebral Body Space

Results

- Greater than 70% improvement of his neuropathic pain with improved function
- The SCS trial not only relieved the patients' chronic pain, but also eradicated urinary symptoms due to BPH
- Urinary frequency decreased from 8-9 times per night to average of 2 times per night in addition to discontinuation of BPH medications (tamsulosin and vibegron)

Discussion

- The autonomic effects of SCS are not fully understood but are believed to work by modulating the autonomic nervous system, which regulates heart rate, blood pressure, digestion and bladder control
- In a study done on cats assessing whether sacral SCS could be used to target lower urinary tract, it was found that selectively recruiting branches of the pudendal nerves could modulate bladder and urethral function. This could be used to restore bladder/urethral function after injury or disease¹.
- In a retrospective case series, patients who had HF-SCS at 10 Hz implanted with neurogenic bladder incontinence from neurological disease or spinal cord injury had significantly alleviated symptoms².

Conclusion

- We present a case of a successful use of SCS for chronic neuropathic pain with a secondary benefit of symptomatic relief from chronic refractory BPH
- SCS has remained a successful tool for treatment of chronic pain for decades
- The autonomic effects of SCS beyond pain relief require further investigation

References

1. Jantz MK, Gopinath C, Kumar R, Chin C, Wong L, Ogren JI, Fisher LE, McLaughlin BL, Gaunt RA. High-density spinal cord stimulation selectively activates lower urinary tract nerves. J Neural Eng. 2022 Nov 22;19(6):066014. doi: 10.1088/1741-2552/aca0c2. PMID: 36343359; PMCID: PMC9855651.
1. Schieferdecker S, Neudorfer C, El Majdoub F, Maarouf M. A Retrospective Case Series of High-Frequency Spinal Cord Stimulation (HF10-SCS) in Neurogenic Bladder Incontinence. Oper Neurosurg (Hagerstown). 2019 Jul 1;17(1):14-20. doi: 10.1093/ons/opy236. PMID: 30169840.