

Infection Following Spinal Cord Stimulator Trial: A Case Report and Literature Review

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Background

- Spinal Cord Stimulators (SCS) have been implicated in the treatment and management of multiple chronic pain syndromes
- The incidence of complications, namely infections, is reported as 2-14% of SCS implanted¹.
- This poses significant clinical concern for the patient, as infection is associated with hospitalization, surgical intervention, and long-term antibiotics².
- Here, we report the case of a 78-year-old man who underwent an SCS trial and subsequently developed an infection soon after. We will review the literature regarding SCS infection rates in both trials and permanent implants- along with identification, prevention, and management.

Case Presentation

- 78-year-old man with a history of coronary artery disease with stents (on clopidogrel), heart failure with an implantable cardioverter defibrillator, and prior L3-L5 posterior spinal fusion who presented with chronic low back pain
- Pain: severe, sharp, and radiated into his right lower extremity that did not respond to conservative therapy and injections
- Underwent a 7-day percutaneous SCS trial
- Presented after 1 week to the ED with severe low back pain and an episode of bowel incontinence
- CT lumbar spine: possible L1-L2 discitis and interspinous widening at T12-L1 that was suspicious for an infectious etiology
- Blood cultures and disc cultures grew pan- susceptible pseudomonas
- The patient did not need surgical intervention for his infection and was eventually discharged home with a peripherally inserted central catheter and required cefepime for 4 weeks

Figure 1: CT lumbar spine following SCS trial



Discussion

- **Incidence:** reported as 2.45%
 - *Staphylococcus aureus* being the most common pathogen identified (35% of all infections)³.
- **Risk Factors:** the greatest risk factors for infection include:
 - Peripheral vascular disease
 - Infection 12 months prior to implant⁴
- **Identification:** pain is the most common symptom of postoperative infection⁴
- **Preventative strategies:**
 - Obtain a lumbar MRI with contrast, a white blood cell count (WBC) and inflammatory biomarkers (ESR, CRP)
 - Consider reducing the length of time of the trial itself, or to extend antibiotic therapy during the trial
- **Future management:** very limited literature exists for SCS trials
 - In a case report from 2021, a patient who was diagnosed with a postoperative infection following SCS implant was successfully reimplanted after 1 year⁵
 - In another case report, a patient who developed an epidural abscess following SCS trial was treated with 6 weeks of intravenous cefepime⁶
 - The Neurostimulation Appropriateness Consensus Committee (NACC) guidelines recommend that an infectious disease specialist should be consulted prior to consideration of reimplantation⁶
 - It may be reasonable to apply consensus guidelines for SCS implant precautions to trials as well. However further studies are needed for infections following SCS trial

References

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