

Immunocompromised Patient Develops Subacute Superficial MRSA Infection After Spinal Cord Stimulator Trial: A Case Report

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Abstract

- A 73 year old female with rheumatoid arthritis treated with immunosuppressive therapy underwent a spinal cord stimulator (SCS) trial with bilateral percutaneous trial leads for chronic lower back pain with neurogenic claudication. Prophylactic measures to prevent an infection were taken and in line with the standard of care. The patient had successful relief of pain and the trial leads were removed on day 5. Eleven days after trial leads removal and prior to implant, the patient endorsed a three day history of purulent discharge from the previous trial leads site. The patient was successfully treated for a superficial infection. Successful implant was completed after resolution of the infection approximately four months after removal of the trial leads.

Case

- 73-year-old female with with rheumatoid arthritis treated with Abatacept with chronic lower back pain with neurogenic claudication and elected to undergo a SCS trial after failing standard therapies.
- Successful placement of bilateral percutaneous trial leads to the T8 and T7 vertebrae.
- Chlorhexidine prep and intra-operative Cefazolin was administered.
- A MRSA swab was not completed prior to the procedure.
- The procedure was uneventful with same day discharge with a 7-day course of Cephalexin.
- 75% pain relief during trial.
- Trial leads were removed after 5 days in place.
- There was isolated erythema at her bandage sites and antihistamine treatment was prescribed for assumed adhesive atopic reaction.
- No tenderness to palpation, purulent discharge, neurologic deficits, fevers, or chills were noted at that time.
- Eleven days after lead removal, the patient endorsed a three-day history of pain and fluid drainage at one of the previous lead sites.
- Imaging and cultures were completed and revealed MRSA growth without epidural involvement.
- Oral Bactrim was prescribed in the outpatient setting.
- The infection resolved without any residual deficits, and the patient decided to undergo SCS implant.
- Multidisciplinary consensus was to:
 - 1) have the patient visit multiple specialists, including Infectious Disease,
 - 2) complete a one-week MRSA decolonization prior to surgery using chlorhexidine wipes,
 - 3) overnight admission before surgery,
 - 4) post-operative inpatient monitoring overnight,
 - 5) direct implantation without trial,
 - 6) the addition of intravenous Vancomycin peri-operatively,
 - 7) post-operative prophylactic Bactrim,
 - 8) to hold Abatacept for one month prior to implant and two months after, and
 - 9) a low threshold to explant.
- The patient had an uneventful post-procedure course and was discharged on post-procedure day two.
- Follow-up in clinic at post-implant days 5, 8, 16, and 22 showed appropriate healing without signs or symptoms of infection.
- The patient endorsed significant pain relief at each visit.
- The patient was restarted on her Abatacept two months after implantation.



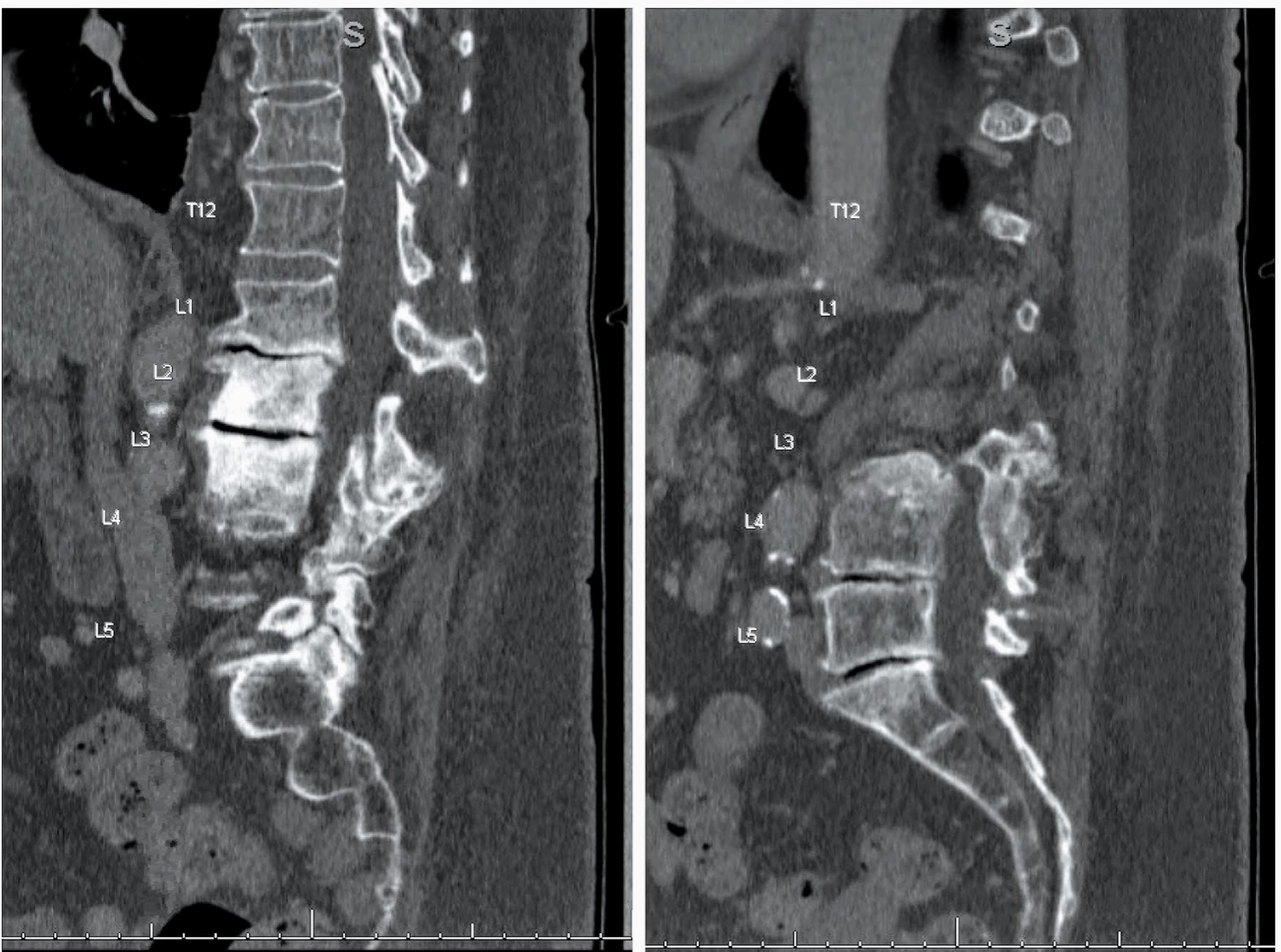
(1) 15 days after trial lead removal, pre-implant

(2) 7 weeks after trial lead removal, pre-implant

(3) SCS implant post-procedure day 8

(4) SCS implant post-procedure day 16

(5) SCS implant post-procedure day 22



Sagittal CT imaging of the spine with contrast shows stranding in paramedian soft tissues without abscess formation or epidural involvement.

Discussion

- This case report highlights how a subacute infection occurred in an immunosuppressed patient after percutaneous trial leads were discontinued after a short trial (5 days).
- It is unclear why clinic protocol recommendations for pre-trial testing for MRSA colonization were not followed.
- Although there is heterogeneity in practice approaches for SCS trial and implantation, international guidelines advise for regular MRSA and MSSA colonization screening pre-trial.
- The role of pre-procedure testing is significant since 80% of healthcare associated staphylococcus aureus infections originate from endogenous sources .
- Surgeries involving other implantable devices showed that decolonization of MRSA and MSSA carriers with mupirocin nasal ointment and chlorhexidine washings significantly reduced SSI.
- Practice habits should include routine testing for MRSA and MSSA colonization prior to a trial phase.
- A multidisciplinary discussion between the medical team prescribing immunosuppressant therapy and other experts (e.g., Infectious Disease specialist) regarding immunosuppressant use should take place prior to a SCS trial.
- While it was presumed that this patient developed an adhesive atopic reaction, aggressive infection rule-out and follow-up could have taken place since an early infection can present similarly.
- Vigilant planning regarding immunosuppressant use, MRSA and MSSA colonization testing, appropriate antibiotic use, and post-procedure monitoring can optimize therapeutic effect of SCS in immunocompromised patients while also decreasing the risk of infections.

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