Extraspinal Spinal Cord Stimulator Lead Migration Leading to Shoulder Pain

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INTRODUCTION

Lead migration remains the most common hardware complication for SCS, approx. 10% of patients; 96% of which requiring revision or explantation.

Migration is typically within the epidural space. Extraspinal migration is exceedingly rare, with only one prior case reported.

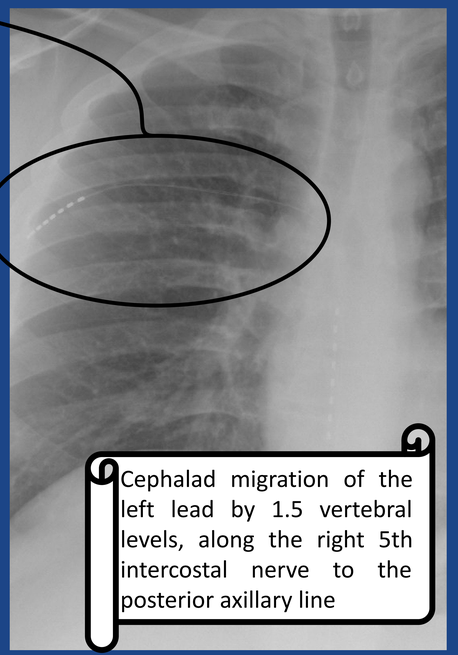
CASE REPORT

Our patient was a 34-year-old with post-laminectomy syndrome. SCS placed with two 8-contact leads at T7 and 80% pain reduction.

→ Two weeks post-op, presented with new chest wall and right shoulder pain attributed to stimulation; reprogramming was initially done, but discomfort returned. At 6 months, right shoulder X-ray showed the image on the right.

→ Intraop, noted that click anchor lines were mismatched and anchor was unclicked. One eye of the anchor was secured to tissue to prevent torsional motion, and the second suture was placed over the anchor. An additional slip-on anchor was placed.

→ At 3-week follow-up, patient reported 80% pain reduction, and imaging confirmed appropriate positioning.



Cephalad migration of the left lead by 1.5 vertebral levels, along the right 5th intercostal nerve to the posterior axillary line

DISCUSSION

Possible mechanisms include incomplete anchor engagement or torsional forces from fixation. We postulate that the following three conditions needed to me met: anchor failure permitting movement; repetitive spinal motion causing cephalad displacement; and proximal resistance preventing recoil.

This case shows that early changes in paresthesia may indicate lead migration, so prompt imaging is recommended.

REFERENCES

1. West T, D'Souza RS, et al. Incidence of Lead Migration With Loss of Efficacy or Paresthesia Coverage After Spinal Cord Stimulator Implantation: A Systematic Review and Proportional Meta-Analysis. Neuromodulation. 2023. DOI: 10.1016/j.neurom.2023.03.016.

2. Ridwan S, et al. Extraspinal Lead Migration Along a Thoracic Nerve Root Following Spinal Cord Stimulation: A Case Report. World Neurosurgery. 2020;141:247–250. DOI: 10.1016/j.wneu.2020.06.062.

