Continuous Sensory Stimulation During Fluoroscopically-Guided Lumbar Medial Branch Radiofrequency Ablation: A Case Report

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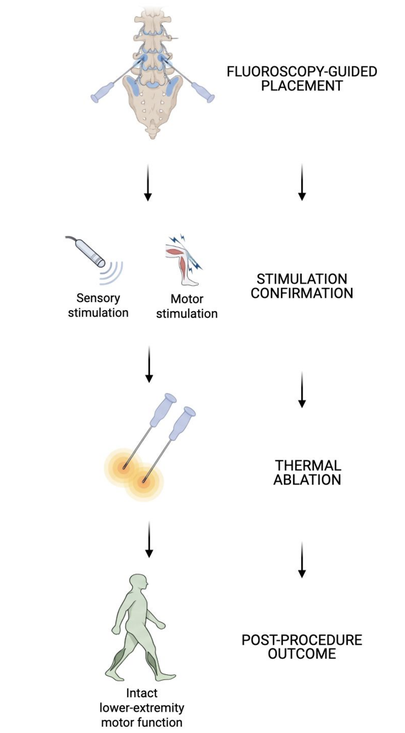
INTRODUCTION

- Radiofrequency ablation (RFA) is a procedure used to treat back pain by producing thermal lesions in the targeted medial branches of the dorsal rami, disrupting the transmission of corresponding nociceptive signals.
- In this case, we use an alternative approach to confirm needle placement by applying continuous sensory stimulation during needle adjustments, rather than conventional sensory testing, in which stimulation is stopped during each needle repositioning and subsequently reactivated to assess the sensory response.

CASE REPORT

- 60-year-old female with chronic axial low back pain and multiple prior RFAs presented for bilateral L3, L4, and L5 medial branch RFA.
- Under fluoroscopic guidance, 15-cm NeuroTherm RFA needles with 10-mm active tips were advanced bilaterally to the sacral ala and appropriate superior articular process–pedicle junctions.
- Impedance measurements ranged from 150–300 Ω.
- Sensory stimulation (50 Hz, 0–1 V) and motor stimulation (2 Hz, 0–10 V) were used to confirm appropriate needle positioning.
- Continuous sensory stimulation was maintained during needle repositioning, allowing real-time patient feedback and confirmation of no radiating extremity paresthesias.
- Following injection of 1% lidocaine, thermal RFA was performed at 80°C for 90 seconds at each target.
- Needle tips were cooled to <50°C prior to removal.
- The procedure was completed without complications; post-procedure examination demonstrated full lower-extremity motor strength and steady ambulation.

FIGURE



CONCLUSION

- Continuous sensory stimulation, rather than the conventional approach of intermittent stimulation with each needle adjustment, allowed for dynamic adjustment of the needle based on the patient's verbal feedback to ongoing sensory responses.
- This technique may facilitate more efficient confirmation of needle positioning during lumbar medial branch RFA.
- Additional studies are needed to determine whether continuous sensory stimulation reduces needle localization and overall procedural time compared with conventional intermittent sensory stimulation.

REFERENCES

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DISCLAIMER

As this case report contains no patient-identifiable information, it is exempt from Institutional Review Board (IRB) review in accordance with New York University policy.

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