



A Novel Technique for Radiofrequency Ablation in Challenging Lumbar Anatomy Cases Using Continuous Stimulation: A Case Report



Dylan Banks, MD ¹, Gerardo Rivera-Colón, BS ², Charles Kim, MD ¹
¹New York University, Department of PM&R, ²Rowan-Virtua School of Osteopathic Medicine

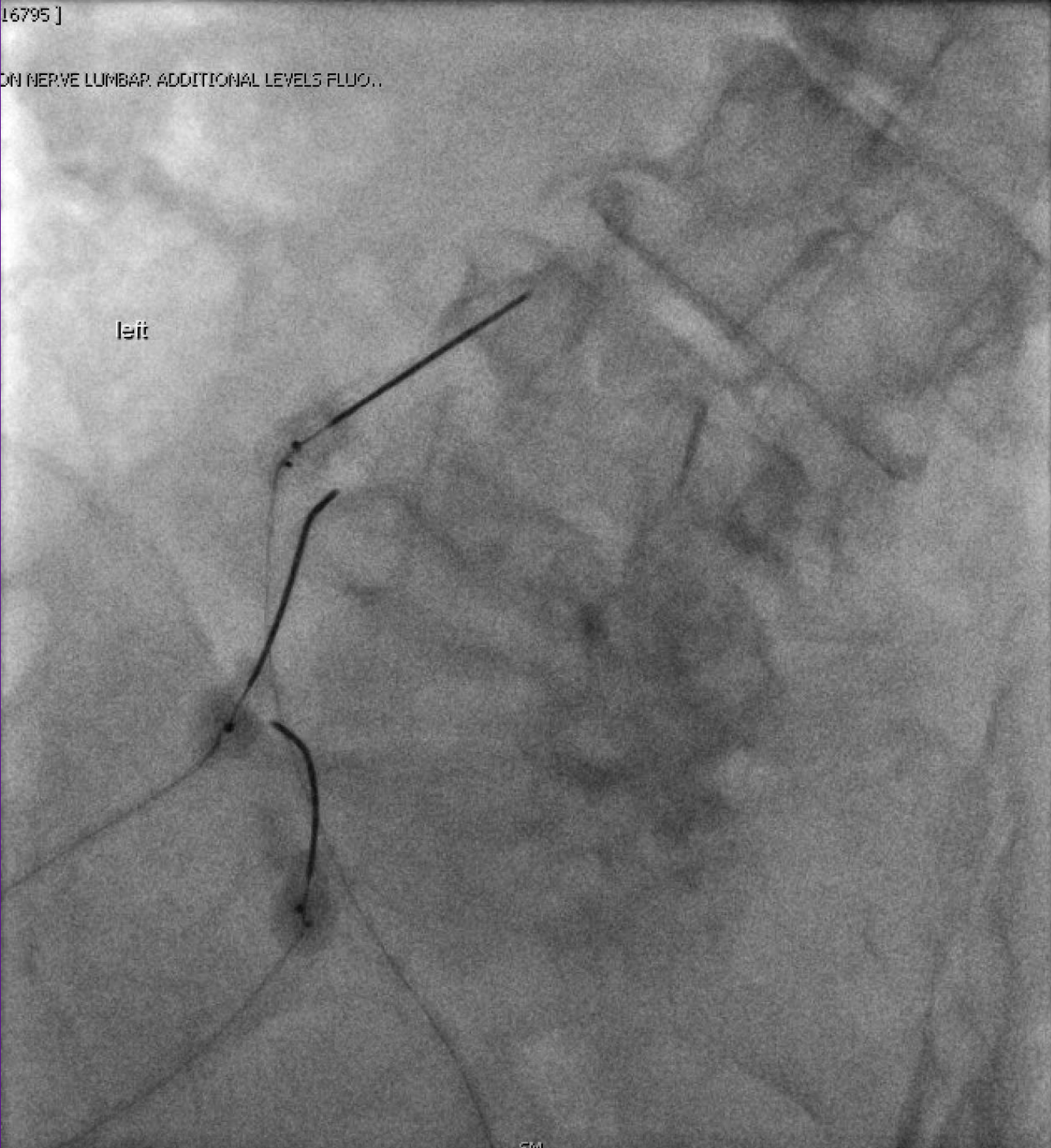
Case Description

- **HPI:**
 - 68 y/o F with a PMHx of scoliosis and osteoporosis presented with chronic lower back pain and right leg radicular pain in an L5/S1 pattern
 - She reported significant limitations to daily activities including getting into and out of her car due to severe pain.
 - Conservative modalities such as medications (Ibuprofen 800mg TID and Gabapentin 200mg nightly) and an epidural steroid injection failed to provide relief.
- **Imaging**
 - Whole-spine XR demonstrated severe rotatory dextrocurvature centered at the upper lumbar spine with a 65° curve to the right from T10-L3 (**Image 1**).
 - Lumbar spine MRI demonstrated multilevel moderate-to-severe neural foraminal stenosis
- **Intervention:**
 - Two bilateral L3,4,5 medial branch blocks were diagnostically positive
 - Due to challenging fluoroscopic anatomy, a novel technique of constant low-level stimulation was utilized for subsequent radiofrequency ablation (RFA) (**Images 2 & 3**)



Image 1. X-ray of the whole spine demonstrating severe rotatory dextrocurvature centered at the upper lumbar spine

We present a novel technique incorporating continuous low-level stimulation during RFA probe placement for challenging fluoroscopic anatomy.



Images 2 & 3. Fluoroscopic lumbar spine demonstrating bilateral RFA probe placement

Discussion

- In cases of challenging fluoroscopic anatomy, we utilize continuous low-level sensory stimulation (50mV adjusted to .5-.6V) while positioning the RFA probes to the junction of the superior articular process and pedicle in a 45-degree oblique view.
- As the stimulation is constant, adjustments are made until the patient reports sensations consistent with sufficient contact of the medial branch nerve.
- According to our literature review, the method employed has not been previously described in the current literature.
- This patient's severe dextroscoliosis and spondylosis complicated her fluoroscopic anatomy, resulting in the utilization of this technique to improve diagnostic accuracy in targeting the medial branch nerves.

Conclusion

- Continuous low-level stimulation during RFA probe placement can enhance the accuracy of medial branch nerve targeting in patients with severe scoliosis and spondylosis, when traditional fluoroscopic techniques are often challenging.

References

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