Beyond the Safe Triangle: Utilizing the Infraneural Approach for Extruded Discs with Cephalad Osteophytic Obstruction - A Case Report

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INTRODUCTION

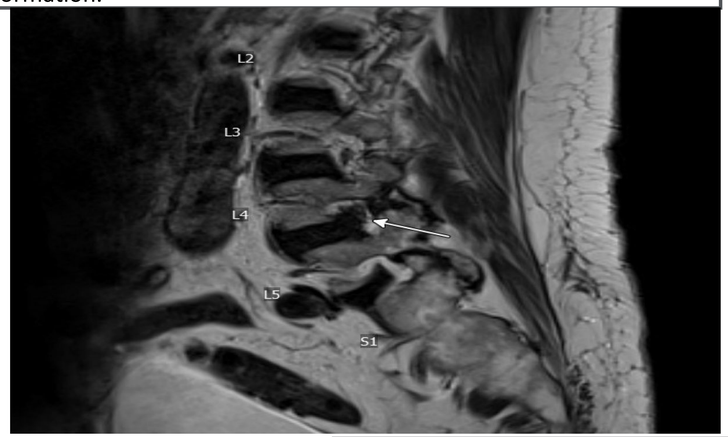
Lumbosacral radicular pain is typically treated using the standard supraneural transforaminal epidural steroid injection (TFESI) via the "safe triangle." However, severe degenerative lumbar anatomy can make this standard route anatomically challenging. This case highlights procedural adaptability, demonstrating how an interventionist can successfully pivot intra-procedurally to the infraneural approach through Kambin's triangle. This alternative triangle offers a safer, effective entry point when standard anatomy is compromised, ensuring successful treatment.

CASE PRESENTATION

A 78-year-old female presented with a one-month history of severe sharp, aching pain radiating from the left hip to the anterior thigh to the knee, rated 9–10/10, worsened by sitting, standing, and bending. She also reported subjective knee instability. Conservative treatment with meloxicam, methocarbamol, and acetaminophen provided no relief. Physical examination revealed pain during spinal extension, left lumbar facet loading, and palpable taut bands in the paravertebral musculature. Magnetic resonance imaging (MRI) of the lumbar spine identified a new superiorly extruded left foraminal/extraforaminal disc herniation at L4-L5, directly impinging the left L4 nerve root. Pain severity limited participating in physical therapy (PT), therefore a left L4-L5 TFESI was performed. Due to the patient's advanced spondylosis and cephalad osteophytosis obstructing the traditional supraneural approach (Safe Triangle), the procedural strategy was pivoted to an infraneural (Kambin's Triangle) approach. By targeting the inferior-posterior aspect of the foramen, the needle bypassed these anatomical barriers to deliver the injectate over the compromised L4 nerve root.Following the procedure, the patient endorsed 100% resolution of her radicular symptoms at her follow-up office visit, confirming the clinical success and safety of pivoting to the infraneural Kambin's triangle approach.

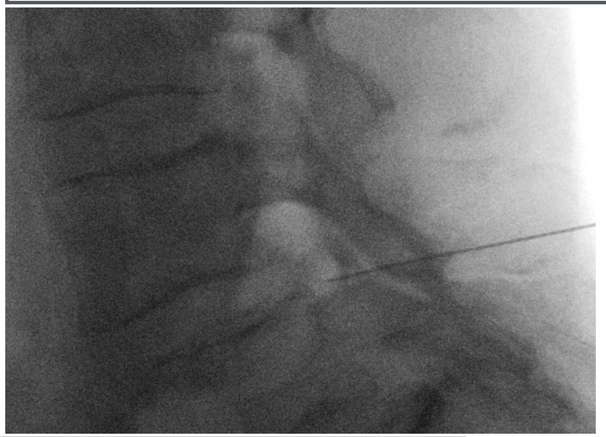
METHOD

- As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per NYU policy.
- Patient informed consent was obtained for submission of a case report.
- All patient protected health information has been de-identified
- This is a scientific abstract with no patient protected health information.



DISCUSSION

This case demonstrates that in geriatric patients with advanced spondylosis, an infraneural TFESI can serve as an effective alternative when degenerative changes limit safe supraneural access. It is essential to have familiarity with both approaches for procedural success in anatomically complex cases.



REFERENCES

1. Galley HF, Adam R, Columb MO, Onyeakazi UM, Kanakarajan S. Supraneural *versus* Infraneural Approach to transforaMinal Epidural StEroid injection for unilateral lumbosacral radicular pain (SIAMESE): a study protocol for a randomised non-inferiority trial. BJA Open. 2023 Feb 16;5:100126. doi: 10.1016/j.bjao.2023.100126. PMID: 37587990; PMCID: PMC10430835.
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