Basivertebral Nerve Ablation for Vertebrogenic Pain After L5-S1 Fusion: A Case Report

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Introduction

- Vertebrogenic pain is increasingly being recognized as a source for chronic low back pain.
- Modic changes on MRI are a pathognomonic biomarker for vertebrogenic pain.
- **Basivertebral nerve ablation (BVNA)** has demonstrated durable pain relief for vertebrogenic pain in prospective trials.
- Prior spine surgery is listed as a **relative** contraindication for (BVNA) basivertebral nerve ablation.
- We describe a case of BVNA of L5 and S1 in a patient with prior L5-S1 posterior spinal instrumentation and interbody fusion.

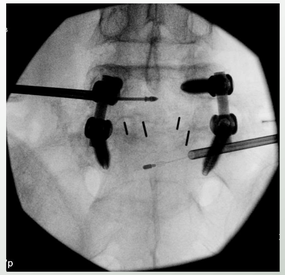
Case Description

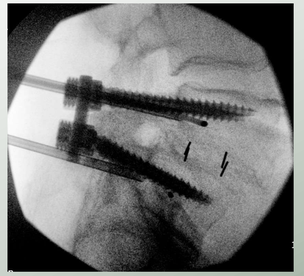
- A 72-year-old male with significant past medical history of **L5-S1 posterior spinal instrumentation and interbody fusion** for lumbar radiculopathy, achieving complete resolution of his preoperative radicular symptoms.
- Years later, sustains **a traumatic fall** and develops worsening axial low back pain with clinical characteristics consistent with **vertebrogenic pain.**
- MRI demonstrated **Modic type 2 changes at the L5-S1 endplates**, X-rays demonstrated no hardware instability or defect.
- Physical Exam: **Pain with lumbar flexion and rotation**. No paraspinal, greater trochanteric bursa, or posterior superior iliac spine tenderness. Negative straight leg raise bilaterally, negative facet loading pain bilaterally, 5/5 strength throughout bilateral lower extremities.
- Intraosseous **BVNA** performed under fluoroscopy at **L5 and S1** vertebral bodies despite the presence of the prior L5-S1 fusion construct.
- The procedure was successfully completed without complication.











Results

- At **8-week follow-up**, the patient experienced **near-complete (>90%) resolution** of his axial low back pain.
- Patient reported **significant increase in ability to perform prior activities** such as gardening, prolonged walking, and lifting objects.
- Patient also reported **improved mood and sleep.**

Discussion

- Although technically more difficult, it is **still possible to perform BVNA at** a level which has already been subjected **to instrumentation and fusion**.
- **Despite** being fused and having theoretically **less mobility** at that joint space, **MRI** imaging demonstrated clear **Modic type II** changes. Paired with the patient exam showing **increased pain with forward flexion**, this patient has significant evidence of Vertebrogenic pain.

Conclusion

- This case demonstrates two significant learning points regarding BVNA:
  - Vertebrogenic pain can still develop in patients with fused lumbar segments.
  - BVNA can be performed despite presence of existing spine fusion constructs.

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