

Concurrent Basivertebral Nerve Ablation and Sacroiliac Joint Fusion Using a Single Compressive Transfixing Lateral Implant: Case Report

Project Chair & Principal Investigator: Mazhar Rasul, MD



24th Annual
Pain Medicine Meeting
November 13-15, 2025 | Austin, TX



Introduction

Chronic low back pain (CLBP) remains one of the most burdensome conditions globally, with rising recognition of multiple axial pain generators contributing to symptoms. Two increasingly well-characterized sources are Vertebrogenic pain and sacroiliac joint (SIJ) dysfunction. Vertebrogenic pain is associated with inflammatory and structural changes at the vertebral endplates, frequently identified as Modic type I or II changes, and mediated through the Basivertebral nerve. In contrast, SIJ dysfunction is often mechanical in origin, resulting from instability, degeneration or post-lumbar fusion biomechanics. These entities may coexist in the same patient, complicating diagnosis and prolonging ineffective treatment. While both Basivertebral nerve ablation (BVNA) and minimally invasive SIJ fusion are effective as stand-alone treatments, the feasibility and outcomes of concurrent intervention have not been well established. This report describes a case of simultaneous BVNA and SIJ fusion using a single compressive lateral transfixing implant, performed in a single outpatient session.

Materials & Methods

Patient informed consent was obtained for submission of case report. All patient Protected Health Information has been de-identified.

A 67-year-old male veteran with refractory low back and right-sided pelvic pain reported failed response to physical therapy, oral medications, lumbar epidurals, medial branch blocks, SIJ intra-articular CSI injection, Lateral branch blocks and SIJ denervation. MRI revealed Modic type II changes at L4–L5 and sclerotic changes in the right SIJ. SIJ dysfunction was confirmed through ≥3 positive provocative maneuvers and >80% temporary relief following image-guided intra-articular injection. Facetogenic pain was excluded via negative medial branch blocks. Vertebrogenic pain was diagnosed based on location, quality, and imaging. Under General Anesthesia patient underwent BVNA at L4 and L5 transpedicular access. Immediately thereafter, Right-sided SIJ fusion was performed using a single compressive lateral transfixing titanium implant (with cortical engagement) augmented with demineralized bone matrix.

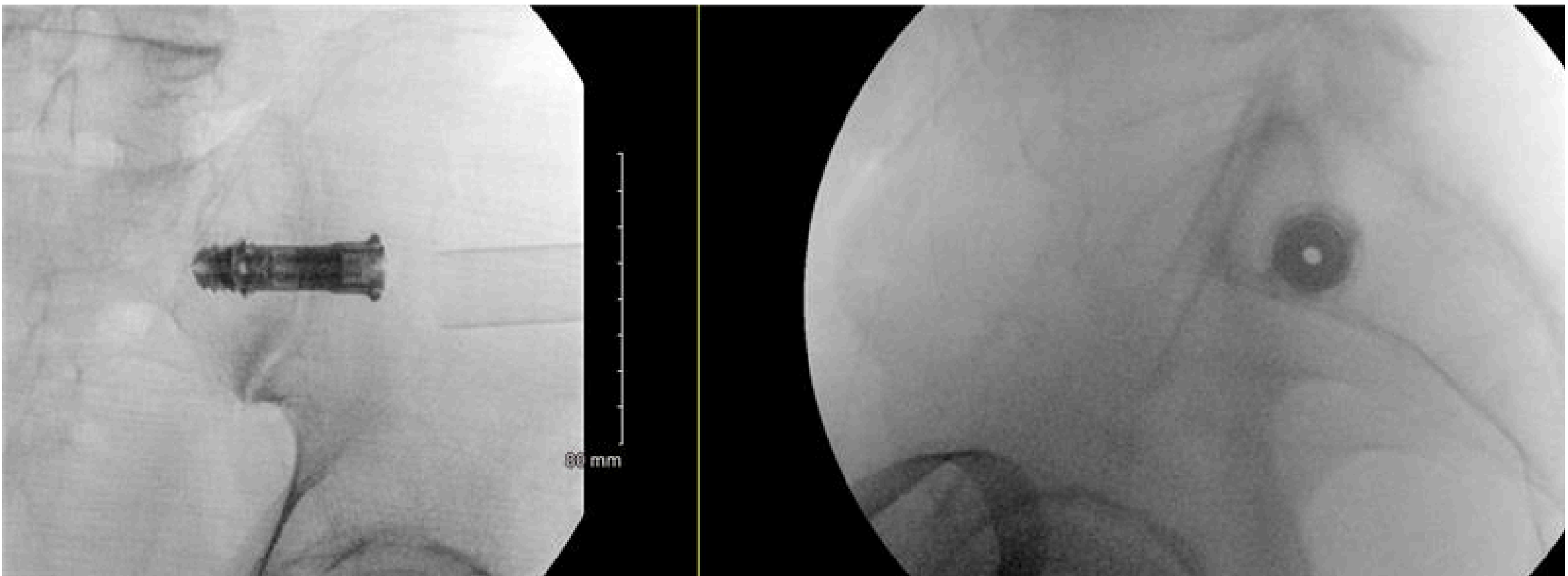


Figure 1: Single Compressive Lateral transfixing (LIBERTY) Implant

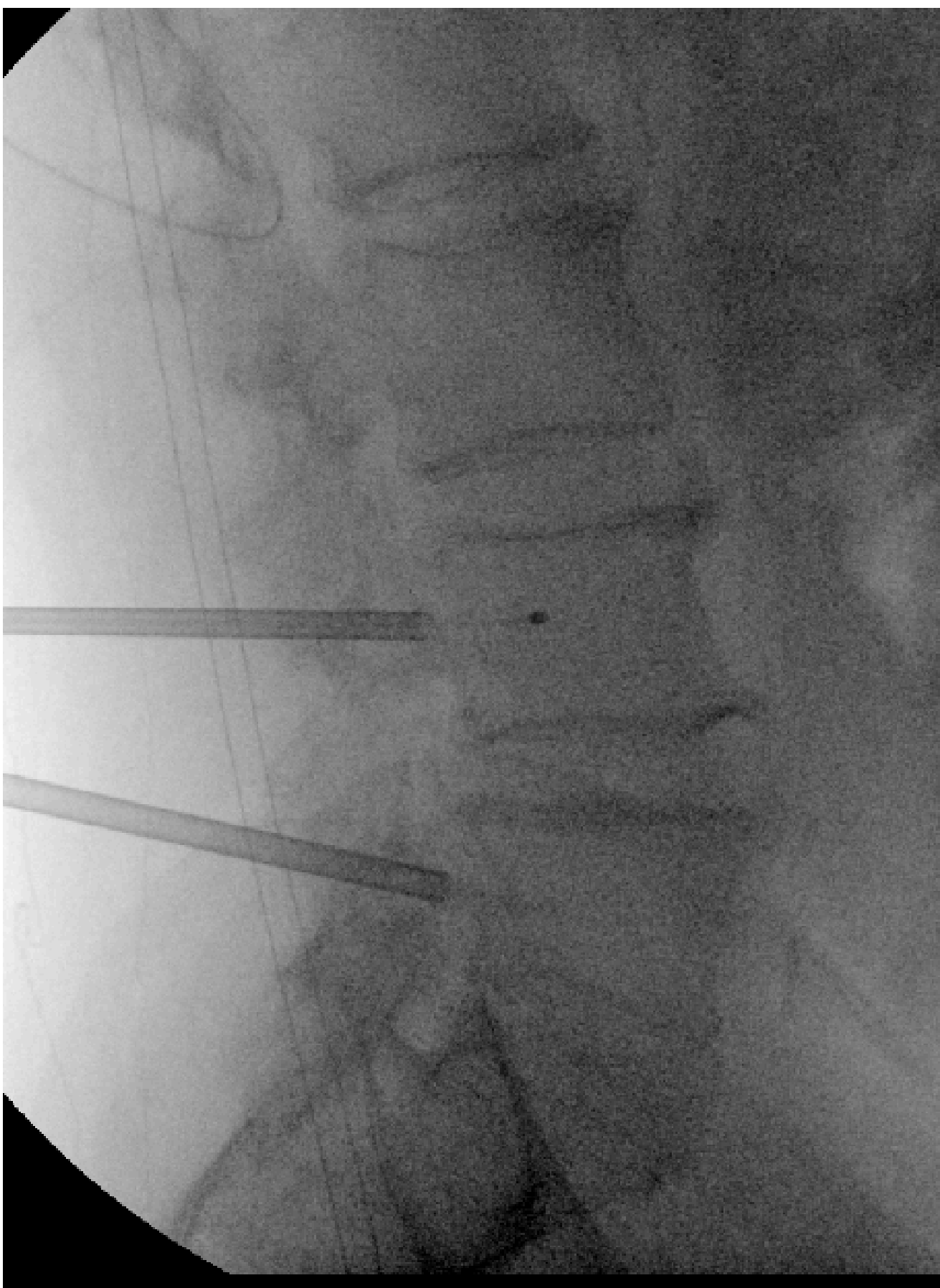


Figure 2: L4 and L5 Basivertebral Nerve Ablation (INTRACEPT PROCEDURE)

Results

The patient tolerated the combined procedures well with no intraoperative or postoperative complications. At 90 days post-procedure, he reported a 90% reduction in pain (NPRS 1/10, down from 8/10). Functional gains included independent driving, recreational fishing, and daily guitar playing, activities previously limited by pain. He discontinued opioid medications within 4 weeks. Imaging confirmed ideal implant placement without migration. Early radiographic signs of osseous integration were noted at 3 months.

Discussion

This case demonstrates that concurrent treatment of Vertebrogenic and SIJ-mediated pain is not only technically feasible but may yield significant clinical benefit. BVNA offers targeted relief of endplate-driven nociception, while lateral SIJ fusion, especially using a single compressive transfixing implant achieves immediate stabilization by engaging dense cortical bone. Addressing both pain generators in one session may reduce the need for prolonged sequential interventions, lower cost, and accelerate recovery. Though limited to a single patient, this report supports further investigation into concurrent procedural strategies for mixed-etiology CLBP.

IRB and Disclosure

IRB statement: Lexington VA Healthcare IRB Number IRB 00008490 attached; Informed consent obtained, documentation maintained by research dept at Lexington VA. No external funding or industry sponsorship. Device name used once parenthetically in Methods for clarity; no promotional intent.



U.S. Department of Veterans Affairs
Veterans Health Administration
Lexington VA Health Care System

References

1. Khalil JG, Smuck M, Koreckij T, et al. A prospective, randomized, multicenter study of intraosseous basivertebral nerve ablation for the treatment of chronic low back pain. *Spine J.* 2019;19(10):1620-1632. doi:10.1016/j.spinee.2019.05.598. PMID:31229663.
2. Fischgrund JS, Rhyne A, Franke J, et al. Long-term outcomes following intraosseous basivertebral nerve ablation for the treatment of chronic low back pain: 5-year treatment arm results from a prospective randomized double-blind sham-controlled multi-center study. *Eur Spine J.* 2020;29(8):1925-1934. doi:10.1007/s00586-020-06448-X. PMID: 32451777.
3. Whang PG, Patel V, Duhon B, Sturesson B, Cher D, et al. Minimally invasive SI joint fusion procedures for chronic SI joint pain: systematic review and meta-analysis of safety and efficacy. *Int J Spine Surg.* 2023;17(6):794-808. doi:10.14444/8543. PMID:37798076.
4. Sturesson B, Kools D, Pflugmacher R, et al. Six-month outcomes from a randomized controlled trial of minimally invasive sacroiliac joint fusion with triangular titanium implants versus non-surgical management. *Eur Spine J.* 2017;26(3):708-719. doi:10.1007/s00586-016-4599-9. PMID:27179664.
5. DePalma MJ, Ketchum JM, Saullo T. Etiology of chronic low back pain in patients having undergone lumbar fusion. *Pain Med.* 2011;12(5):732-739. doi:10.1111/j.1526-4637.2011.01098.x. PMID:21466664.