

Salvage of failed Posterior Sacroiliac Joint Fusion with a Lateral Transfixing Implant: A Case Report

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Introduction

Sacroiliac joint (SIJ) dysfunction is increasingly recognized as a common but frequently underdiagnosed source of chronic axial low back pain. Up to 30% of patients with chronic low back symptoms may have pain attributable to SIJ pathology. Minimally invasive SIJ fusion has emerged as an effective and durable treatment for patients who fail conservative therapy. Posterior allograft-based fusion has been favored for its soft tissue preservation and percutaneous access, though questions remain regarding its biomechanical durability and long-term fusion rates, particularly in active or high-risk patients. In contrast, lateral transiliac fixation using titanium implants provides cortical engagement, compressive fixation, and immediate mechanical stability. While the lateral approach is widely accepted as a primary treatment strategy, its application in salvage scenarios following posterior fusion failure is less well described. There is currently limited clinical guidance on approach selection when prior posterior fusion results in suboptimal integration. This case report presents successful revision of a failed posterior allograft SIJ fusion using a lateral compressive implant in a veteran patient.

Materials & Methods

The patient provided informed consent for case presentation. All protected health information was de-identified.

A 67-year-old male veteran presented with a 4-year history of right-sided SIJ pain, refractory to physical therapy, intra-articular corticosteroid injections, NSAID's and radiofrequency ablation. Diagnosis was confirmed by ≥ 3 positive provocative tests and $\geq 80\%$ relief with fluoroscopy-guided intra-articular injection. Patient underwent posterior SIJ fusion with a allograft implant (LINQ) He showed 80% improvement (NPRS 4/10) at 10 days, sustained for two months. Following a mechanical fall, pain returned (NPRS 10/10), with significant limitation in mobility and function. Six-month CT imaging revealed failure of osseous integration, with no bridging bone and unchanged implant position. Repeat diagnostic injection again confirmed SIJ-mediated pain.

The patient underwent salvage SIJ fusion via a lateral approach using a single titanium transiliac implant (LIBERTY®), augmented with demineralized bone matrix. The prior posterior implant was not removed. The procedure was performed under fluoroscopic guidance in an outpatient setting. Follow-up assessments were conducted at 2 weeks and 3 months postoperatively, including pain scores, functional status, and radiographic evaluation. No intraoperative complications were encountered.



Figure 1: Posterior Allograft and CT Scan depicting no bone formation through the Allograft

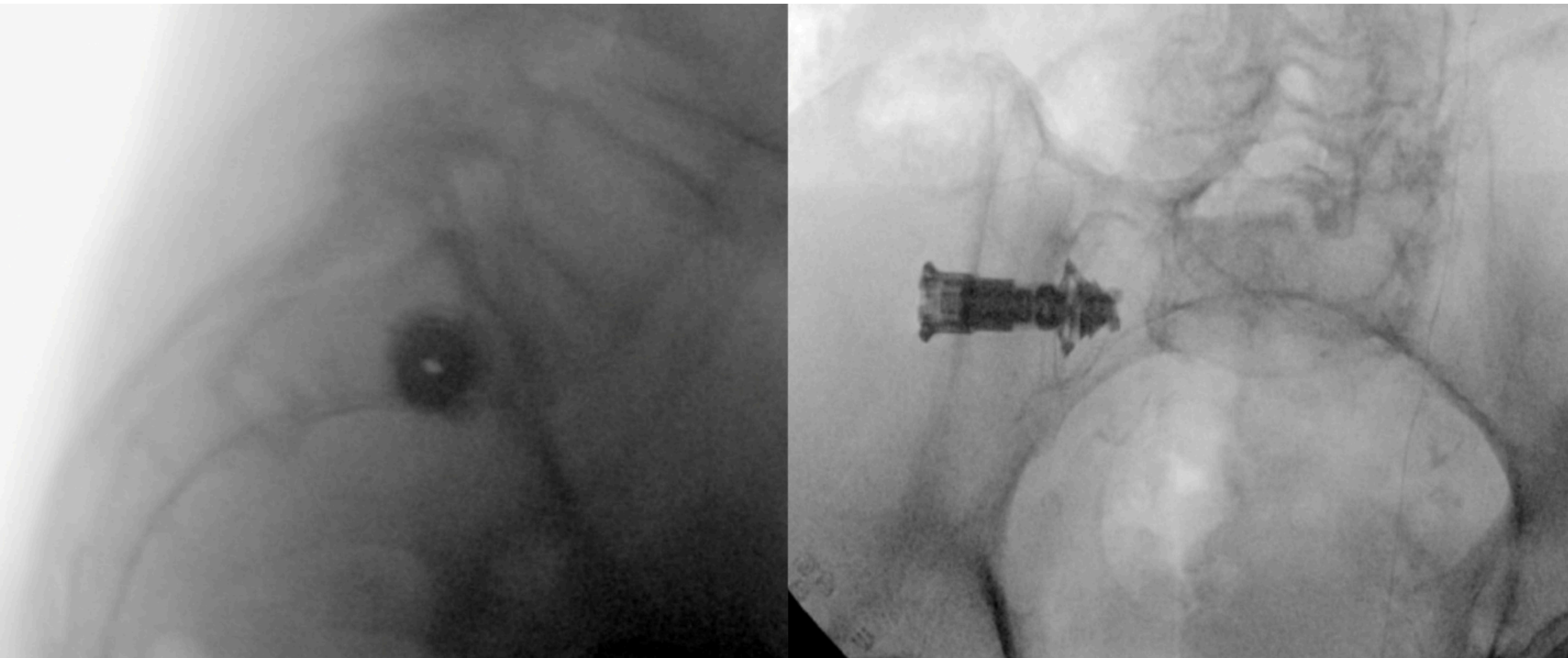


Figure 2: Fluoroscopic Image with both Lateral Compressive screw and Posterior Allograft

Results

The patient reported marked and sustained pain relief (NPRS 1/10) at both follow-ups. He resumed full independent activity, discontinued opioid use, and noted improvements in sleep, ambulation, and overall quality of life. Imaging at 3 months confirmed optimal implant positioning with early signs of osseointegration. No complications, infections, wound issues, or device-related concerns were reported.

Discussion

This case highlights the feasibility and clinical effectiveness of lateral SIJ fusion as a salvage strategy following posterior allograft failure. The lateral approach allows for robust cortical fixation and immediate stabilization, which may be especially advantageous in cases of biomechanical failure, prior trauma, or poor biologic incorporation. In this case, reproducible diagnostic response and clear radiographic failure supported the decision for revision, and the positive post-surgical course demonstrates the potential utility of lateral implants in select revision scenarios. Though limited to a single case, these findings support further investigation into surgical decision-making algorithms, approach-specific indications, and long-term outcomes in the revision SIJF population.

IRB and Disclosure

Lexington VA Healthcare IRB #IRB00008490. Informed consent was obtained and is on file. All patient data are de-identified. No external funding or industry sponsorship. Device name mentioned once for procedural clarity.

Abbreviations:

SIJ: Sacroiliac Joint
SIJF: Sacroiliac Joint Fusion
LVAHCS: Lexington Veterans Affairs Health Care System
CSI: Corticosteroid Injection

Keywords:

Lateral SIJ fusion
posterior SIJ fusion
salvage

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