Thoracic Epidural Steroid Injection for Refractory Axial Pain After T8 Compression Fracture

A CASE REPORT

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WHY THIS CASE MATTERS

- Vertebral compression fractures (VCF) can cause severe pain, and some patients are unable or unwilling to undergo vertebroplasty or kyphoplasty procedures.
- VCF may create overlapping pain generators including discogenic pain and adjacent neural irritation even without overt dermatomal findings. [1]
- Evidence supporting ESI (epidural steroid injections) for axial thoracic pain without radiculopathy is limited.[1,2]
- A recent meta-analysis concluded that there is not sufficient evidence to establish a causal relationship between ESI and fracture risk. [3]

PATIENT

- A 94-year-old Caucasian woman with a history of osteoporosis presented to the UCSD Center for Pain Management 50 days after sustaining a fall that resulted in a T8 compression fracture with 10% height loss of the superior endplate.
- She was seen by neurosurgery previously and provided with TLSO brace and expectant management.
- Osteoporosis was treated with multiple infusions IV bisphosphonates with plans for further treatment
- Initial bilateral T7 dermatomal pain that was resolved by our clinic visit.
- She had persistent severe axial pain that was thought to be partially discogenic in nature and had not responded to 6 weeks of conservative treatment.
- She declined vertebral augmentation procedure due to concerns about the invasiveness of the procedure but agreed to an ESI.

INTERVENTION

T7–T8

Fluoroscopically guided interlaminar thoracic epidural steroid injection (ESI)



MAIN FINDING

After failed conservative care, one T7–T8 interlaminar epidural steroid injection produced substantial relief in disabling axial pain without clinical radiculopathy.

CLINICAL COURSE

1 — AUG 2025 — **Pain clinic** — Severe disability; no radiculopathy

2 — SEP 2 — **TESI** — T7–T8, 5 mg dexamethasone

3 — OCT 22 — **Follow-up** — 80% patient-reported relief

POTENTIAL RATIONALE

- The primary pain generator in vertebral compression fractures is the fracture itself and associated bone marrow edema. Damage to the sinuvertebral nerve (SVN) is also considered a principle mechanism of pain. Additionally, VCFs can alter endplate–disc mechanics and coexist with adjacent disc degeneration and nerve root irritation.[1]
- The small T7–T8 disc herniation and calcified discs suggested a possible discogenic inflammatory component.
- Epidural dexamethasone may have reduced inflammation related to SVN injury and disc pathology despite the absence of dermatomal symptoms.
- As of June 2026, she had developed no further fractures.



Sagittal and axial thoracic CT at T7-T8

80%

pain relief

reported 7 weeks after T7–T8 interlaminar TESI

INTERPRETATION

- TESI may be considered when conservative care fails and a patient declines or is not a candidate for vertebral augmentation, particularly when discogenic pain is suspected.
- Severe osteoporosis and prior fractures require individualized counseling about uncertain skeletal risk and cumulative steroid exposure.[3]
- One low-dose, nonparticulate injection offered a less invasive option aligned with this patient's goals.
- Risk of subsequent fracture is an important consideration in patients already with pathologic fractures from osteoporosis, and individualized, patient-centered approach is necessary.

LIMITATIONS

- Single patient and no control condition.
- Outcome based on patient-reported relief.
- Analgesic mechanism cannot be fully determined.

TAKE-HOME POINT

TESI may be an option for carefully selected patients with refractory axial pain after VCF who decline vertebral augmentation and already receiving bisphosphonate therapy. Suspected discogenic contribution and pathologic fracture risk should be considered.

1. Takegami et al. BMC Musculoskelet Disord. 2020;21:781
2. Benyamin et al. Pain Physician. 2012;15:E497–514. PMID 22828696.
3. Huang et al. Eur J Med Res. 2026;31:1214. doi:10.1186/s40001-026-04804-z.
4. Manchikanti et al. Pain Physician. 2014;17:E327–338. PMID 24850114.

Single case report. Findings are hypothesis-generating and do not establish efficacy.

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