

# SPINAL CORD INJURY FOLLOWING COMBINED SPINAL EPIDURAL FOR HIP ARTHROSCOPY



## A CASE STUDY

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### INTRODUCTION:

Spinal Cord Injury following neuraxial analgesia is rare yet presents patients and anesthesiologists with devastating consequences.

### CASE INFORMATION:

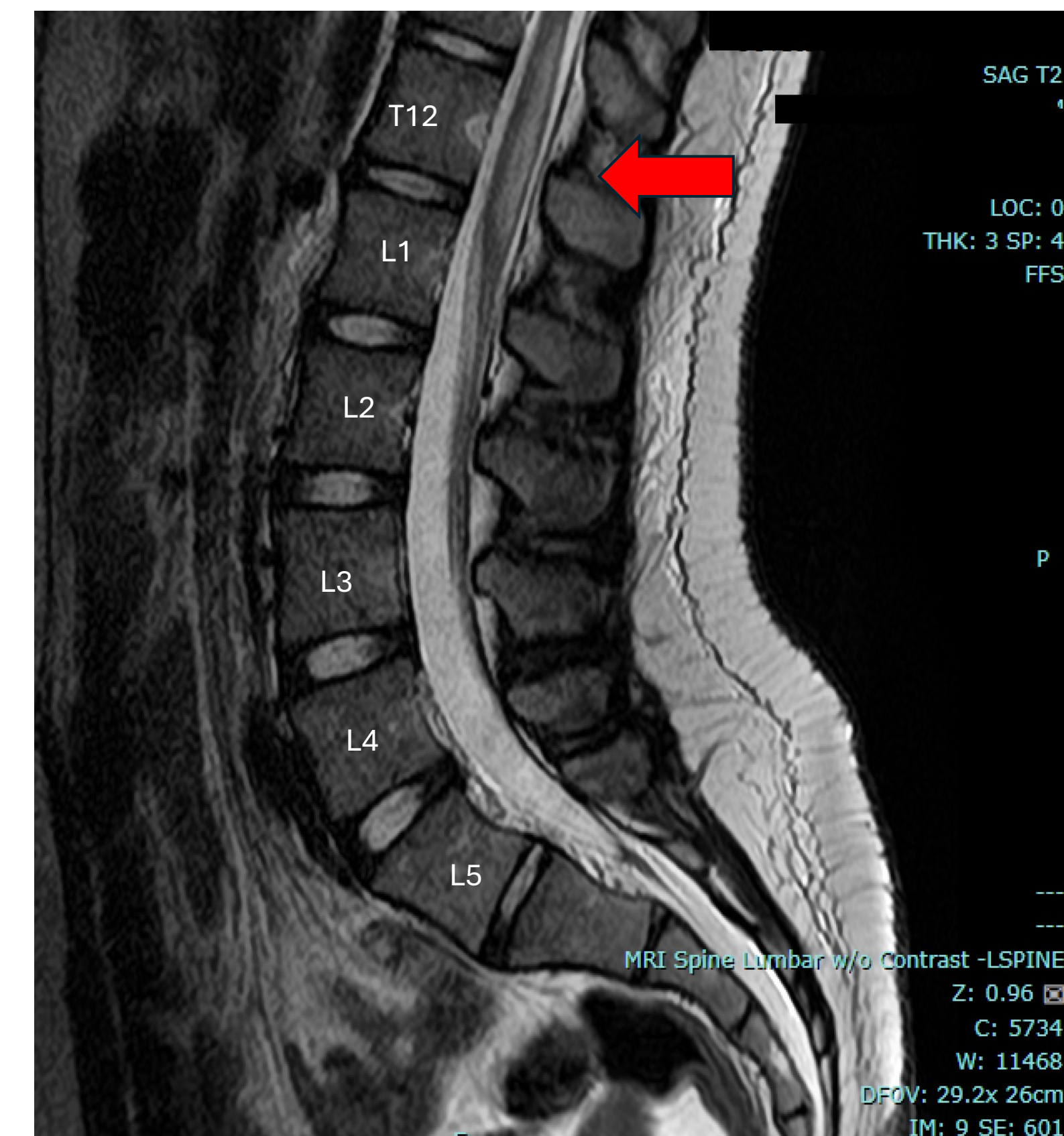
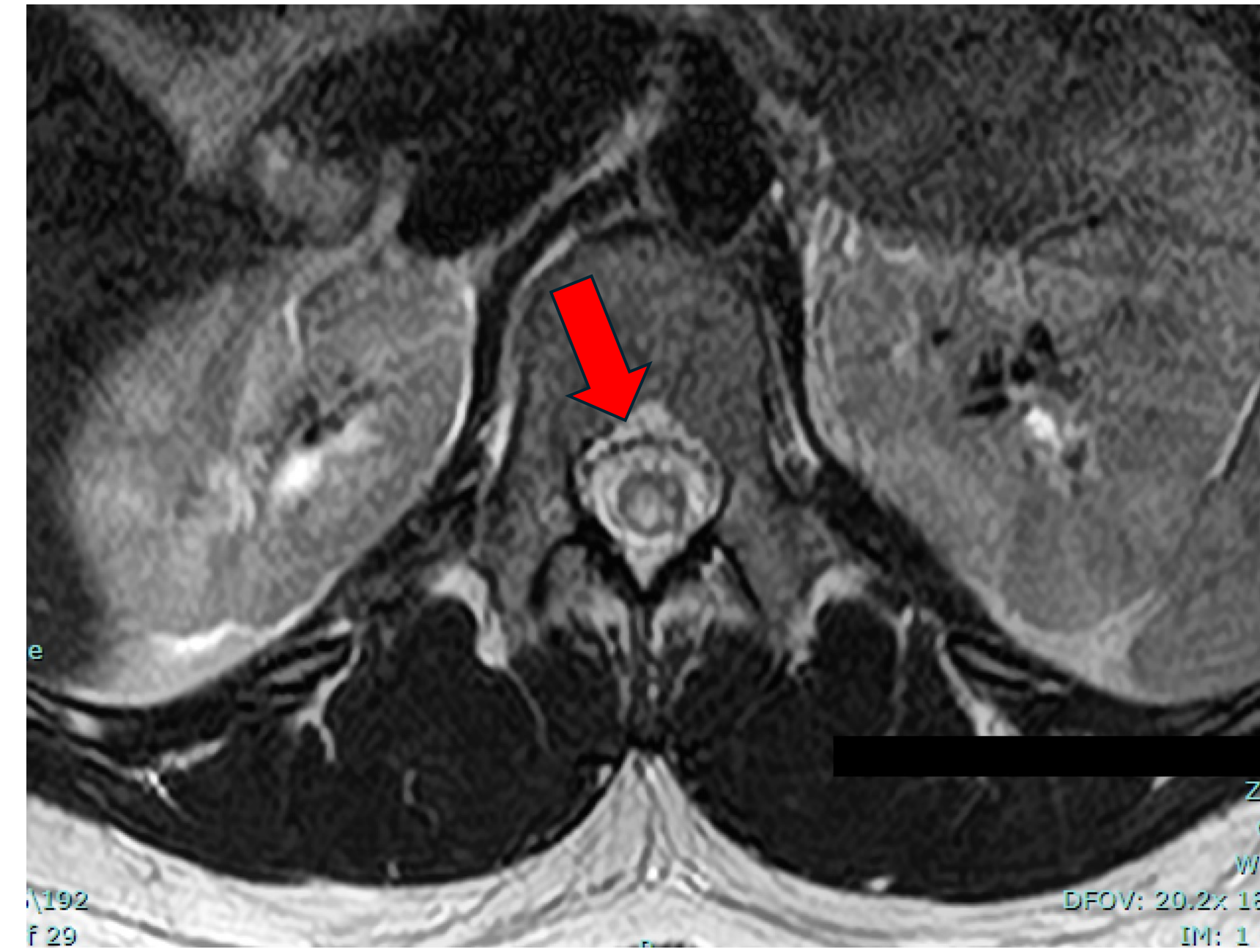
- A 16-year-old female presents for left hip arthroscopy/labral repair
- Combined Spinal Epidural (CSE) technique chosen
- Anesthesiologist assesses L3-L4 level and performs CSE
- No cerebrospinal fluid (CSF) or frank blood with Touhy placement
- Positive CSF on spinal needle placement
- No pain or paresthesia on injection of spinal dose

### CASE PROGRESSION:

- Uneventful intra-operative course
- 6 hours post-spinal patient c/o severe pain
- Bilateral, non-dermatomal, lower extremity radicular pain
- Allodynia from knees to toes and saddle anesthesia
- Transferred to a tertiary children's hospital post-op day #3
- Diagnosis of spinal cord injury secondary to injection trauma

### TREATMENT AND RESULTS:

- Ketamine infusion, tramadol, pregabalin, and meloxicam
- Adjunctive pain psychology and physical therapy
- Pain and mobility improved
- Discharged after 5 days to outpatient follow-up
- Continue to follow >2 years
- Weaned off medications
- Continued bilateral dysesthesias and hyperalgesia
- Retained and intact lower extremity motor function



### IMAGING:

Lumbar X-ray:

- Entry point of epidural to be L1 (radiopaque bead at puncture site)

MRI Lumbar Spine:

- Termination of the conus at L1-2
- Expansile lesion from the inferior mid to dorsal T11-L1

### TAKE HOME POINTS:

- **Vigilance** necessary to avoid spinal cord injury in neuraxial anesthesia.
- Injury can result in *permanent* dysesthesias, hyperalgesia, incomplete or permanent paraplegia and death.<sup>1</sup>
- The intercrystal line is not always the L4 vertebral level.
  - In **females** and patients with **higher BMI** the level is often L3.<sup>3</sup>
- The cord terminates above the L1/2 interspace in ~**88%** of patients.
  - The cord terminates lower than L1/2 in ~**12%** of patients.<sup>4</sup>
- Anesthesiologists correctly identify spinal levels only 29% of the time.
  - One space higher (51%), Two spaces higher (15.5%)<sup>4</sup>
- Pain may not always be reliable indicator of needle injury/trauma. Spinal cord has a lack of sensory receptors, meninges inconsistent.<sup>2,5</sup>

References and abstract available by scanning QR Code

