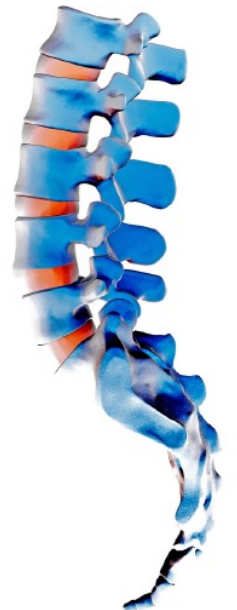


The L5-S1 interspace in Difficult Spinal Anatomy – *Lessons Learned from Inadvertent Dural Puncture Management in a Patient with Cerebral Palsy and Severe Scoliosis*

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- **Cerebral Palsy** - non-progressive, neurologic disorder resulting from antenatal, perinatal or postnatal injury to developing brain
 - Characterized by motor, sensory & intellectual impairment
- **Prevalence:** 1-4/1000 live births¹
 - **1:9 have children**¹
 - 70 – 80% develop muscle spasticity, limb deformities²
- **Fixed deformities** of limbs & trunk associated with challenging neuraxial anesthesia



<https://www.google.com/url?sa=i&ud=https%3A%2F%2Fwww.deviantart.com%2Froland26%2Fart%2FPC-Beauty-836723842&psig=ACQvaw1INCi5OGKSi3rOG2I5AWp&ust=1681838551258000&source=images&cd=vfe&ved=0CBMQ3Yk8ahcKewjql39trH-AhUAAAAAHQAAAAQFg>

Case Report

39 y.o. G2P1 @ 36+6w, BMI 26kg/m²

Spastic CP, R lateral scoliosis w/ axial rotation, hip obliquity and rheumatoid arthritis for elective repeat CD

PMH: chronic HTN, autonomic dysfunction w/ sinus tachycardia GDM, anxiety

Meds: Heparin 10K BID SC (limited mobility), metoprolol

PSH: C-section x 1; with CSE @L3/4- difficult placement

- Preprocedural US scan - I.D. vertebral levels & midline, poor resolution
- Multiple passes L3/4 – IADP at 8cm with 17G needle 19G multi-orifice epidural catheter placed 4cm IT
- Hyperbaric bupivacaine 0.75% 1.6ml, fentanyl 15 mcg & PF morphine 0.15mg administered in divided doses, with additional 0.5ml bupivacaine 0.75% for T4 level
- Catheter inadvertently dislodged postoperatively
- PDPH on POD1. Conservative measures failed
- Chronic pain service performed fluoroscopic guided EBP w/ 30ml blood @ **L5/S1** on POD3 in prone position. Headache resolved

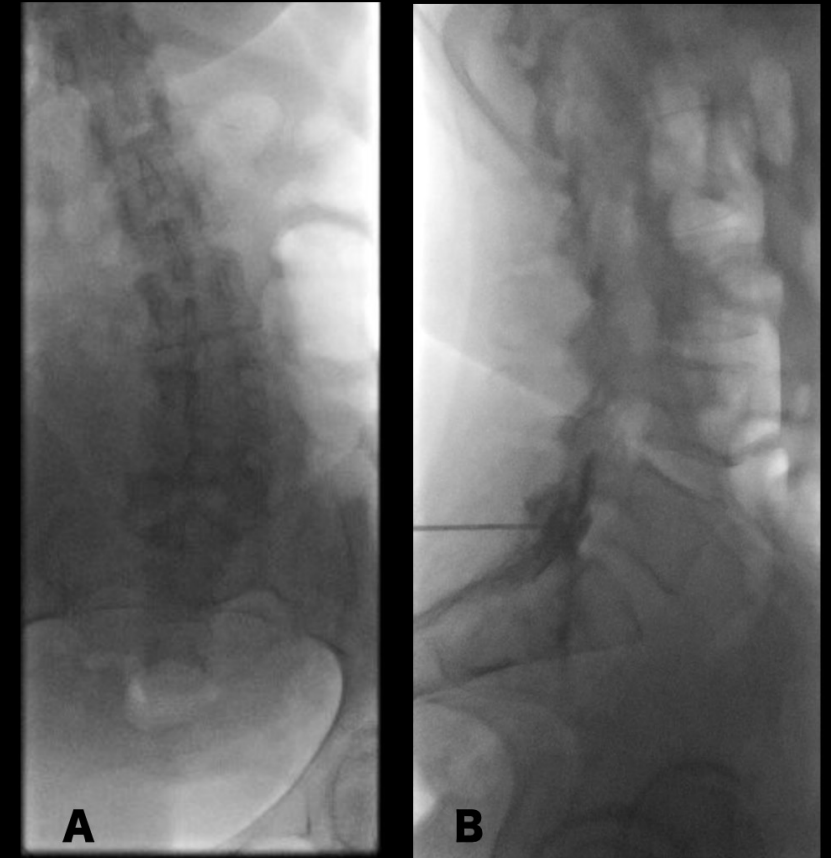


Figure: A-Postero-anterior & B-Lateral X-Rays
lumbar spine during fluoroscopy-guided epidural blood patch

Discussion:

- Fluoroscopically guided EBP performed due to severe deformity & difficult neuraxial procedure
- **L5/S1, widest interlaminar space & least affected by inability to flex ,arthritic & degenerative changes**
- X-Ray revealed difficulty interpreting vertebral levels; original insertion appeared *higher* than L3/4
- Neuraxial needle insertion at L5/S1 (Taylor approach) advocated in difficult anatomy
- Dural sac extends to at least S2, making spinal anesthesia feasible³
- Drawbacks - single shot spinal risks inadequate spread above lumbar curve; CSE may be prudent, given uncertain IT dosing w/ short stature and severe spinal deformity⁴

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