

Beyond the Epidural: A Single-Shot Spinal for Labor in a Patient with a Fused Spine



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Abstract

Background: Epidural analgesia is the standard for labor pain control. However, patients with prior spinal fusion present unique challenges to neuraxial access due to altered anatomy.

Case: A 28-year-old multiparous woman with thoracolumbar spinal fusion from childhood scoliosis presented in labor. During a prior delivery, epidural analgesia was ineffective and produced severe paresthesias. Given the anatomic distortion and prior failure, the care team opted for a single-shot spinal at 8 cm dilation. The patient achieved excellent analgesia and had an uncomplicated vaginal delivery.

Conclusion: Single-shot spinal anesthesia, though uncommon for labor, may be a valuable alternative when epidural placement is contraindicated or technically difficult due to spinal fusion.

Introduction

- Epidural analgesia is the gold standard for labor pain control due to its titratability and duration.
- In patients with spinal fusion or instrumentation, epidural access can be technically difficult or impossible.
- Spinal analgesia is typically reserved for C-section but may serve as an alternative when epidural is not feasible.

Case Presentation

- **PMH:** 28-year-old G2P1 female with prior **thoracolumbar spinal fusion for scoliosis**.
- History of failed attempted epidural in prior pregnancy.
 - Resulted in inadequate analgesia and severe paresthesias.
 - Epidural deemed relatively contraindicated due to obliterated space from fusion hardware.
- After shared decision-making with her care team (including her anesthesiologist husband), she elected for a **single-shot spinal** while at 8 cm dilation.
- Received **1 mL of 0.25% bupivacaine** → excellent pain control through delivery.
- No complications, no motor block, no paresthesias, full recovery postpartum.

Clinical Reasoning & Literature

Rationale for Spinal

1. Epidural failure rate is higher in post-surgical spines (up to 38%).
2. Spinal approach bypasses the distorted epidural space, offers rapid onset.
3. Ideal for late labor stages when delivery is imminent.
4. Avoided intrathecal catheter due to concern for PDPH, difficult to patch due to fused anatomy.

Literature Context

1. **Hebl et al. (2001):** Spinal is technically easier than epidural in post-surgical spines.
2. **Goodman et al. (2008):** Scoliosis + instrumentation associated with epidural failure, patchy blocks.
3. **Gaiser (2013):** Spinal anesthesia viable for patients with prior scoliosis correction.
4. **Reynolds (2006):** Neuraxial flexibility is key in obstetric analgesia strategies.

This case supports emerging evidence that spinal anesthesia may be underutilized for labor analgesia in patients with complex spines.

Discussion

- Spinal analgesia typically not used for labor due to fixed duration¹.
- In advanced labor, it may provide timely relief with minimal risk².
- Avoids catheter placement, minimizes risk of paresthesias or misplacement³.
- Can preserve expulsive efforts with low-dose regimens⁴.

Key Takeaways

- Assess spinal history pre-delivery, especially in patients with hardware.
- Avoid “routine” epidural in fused spines; use pre-anesthesia consultation.
- Consider single-shot spinal as a tool for parturients who are:
 - **Near delivery**
 - **Not epidural candidates**
 - **Concerned about motor block or prolonged recovery**
 - **Shared decision-making is essential.**

References

1. Hebl JR, et al. Anesth Analg. 2001;93(5):1348–1355.
2. Goodman EJ, et al. Int J Obstet Anesth. 2008;17(3):253–260.
3. Gaiser RR. Curr Opin Anaesthesiol. 2013;26(3):292–299.
4. Reynolds F. BMJ. 2006;333(7572):1406–1409.