

ANESTHESIA IN PARTURIENTS WITH DISPROPORTIONATE SKELETAL DYSPLASIA COMPLICATED BY LUMBAR DISC HERNIATION AND SPINAL STENOSIS

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Background

- Disproportionate skeletal dysplasias present unique challenges in obstetric anesthesia particularly regarding the airway and neurologic manifestations.^{1,2}
- Patients face an increased risk of failed or high neuraxial block and neurologic injury due to abnormal vertebral anatomy, shortened spinal canals, and reduced intrathecal volume.³
- Difficult airway is often present due to facial hypoplasia, large tongue, OSA, and cervical spine instability.⁴
- The potential for respiratory depression further complicates anesthetic decision-making at delivery due to the increased incidence of sleep apnea and obesity as well as cardiac and pulmonary abnormalities.^{4,5}



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2. Thavarajah H, Bemdl A. Pregnancy Outcome in Cartilage-Hair Hypoplasia, a Rare Form of Dwarfism. *Case Rep Obstet Gynecol*. 2017;2017:4737818. doi:10.1155/2017/4737818
3. Huang J, Babins N. Anesthesia for cesarean delivery in an achondroplastic dwarf: a case report. *AANA J*. 2008;76(6):435-436.
4. Brimacombe JR, Caunt JA. Citation for: Anaesthesia in a gravid achondroplastic dwarf. *Assoc Anaesth*. Accessed January 22, 2026. <https://associationofanaesthetists-publications.onlinelibrary.wiley.com/action/showCitFormats?doi=10.1111%2Fj.1365-2044.1990.tb14278.x&mobileUi=0>
5. Dumitrascu CI, Eneh PN, Keim AA, Kraus MB, Sharpe EE. Anesthetic management of parturients with achondroplasia: a case series. *Proc (Bayl Univ Med Cent)*. 2023;37(1):63-68. Published 2023 Dec 20. doi:10.1080/08998280.2023.2261084

Patient 1 - Achondroplasia		Patient 2 - Metaphyseal chondrodysplasia	
21 year old	G1P0	42 year old	G4P0030
BMI 66, Wt 96kg, Ht 119cm	33 5/7 weeks gestation	BMI 35, Wt 46kg, Ht 114cm	39 weeks gestation
• Urgent cesarian delivery (CD) for severe pre-eclampsia		• Planned delivery	
• Imaging: lumbar stenosis, low-lying conus, minimal CSF at L2/3		• Imaging: lumbar stenosis, lumbar disk herniation *Note: resolution of prior neurologic symptoms	
• Neuraxial (NXA) anesthesia high risk		• Combined spinal epidural with 1mL 0.75% bupivacaine, fentanyl and morphine	
• General anesthesia with induction complicated by rapid desaturation requiring bougie		• Surgical level obtained after 2ml 2% epidural lidocaine, allis test negative	
• Intraoperative course uncomplicated		• Intraoperative and postoperative courses uncomplicated	
• Postoperative > severe bronchospasm and hypoxemia after extubation			
• APGAR 7/9		• APGAR 7/9	
• EBL 800cc		• EBL 600cc	
• Discharged home POD3		• Discharged home POD3	

- Subsequent delivery plan: NXA versus awake fiberoptic intubation
- Repeat CD @ 37.3 weeks completed
- CSE placed without complication, initial reduced-dose (5mg bupivacaine)
- Additional 15ml epidural 2% lidocaine to achieve surgical level, allis test negative
- Inadequate anesthesia upon opening fascia, surgery paused, intubation without difficulty using glidoscope LoPro3 blade
- Uncomplicated repeat CD, EBL 1L. Uncomplicated extubation. APGAR 6/9, discharged home POD4.

Teaching Points

- Altered spinal anatomy can lead to unpredictable neuraxial spread necessitating thorough preoperative imaging review and consideration of reduced local anesthetic doses.⁵
- General anesthesia carries increased airway and respiratory risk in this patient population requiring thorough preoperative airway evaluation.^{4,5}
- Multidisciplinary planning, preoperative imaging review, and individualized anesthetic strategies are essential in planning for safe delivery in the setting of disproportionate skeletal dysplasia with spinal stenosis.

1. Cao X, Yang W, Mei W. Real-time ultrasound-guided epidural anesthesia for cesarean section in a parturient with achondroplasia. *J Int Med Res*. 2021;49(6):03000605211023701. doi:10.1177/03000605211023701

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