

Anesthetic Management of Symptomatic Chiari I Malformation in A Parturient

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Background

- **Chiari I Malformation:** a hindbrain maldevelopment characterized by downward displacement of cerebellar tissue
- Numerous case reports of neuraxial anesthesia, including known and unknown diagnoses. However, anesthetic management remains unclear and controversial
- **Neuraxial:** Dural puncture may produce a CSF pressure gradient between the brain and spinal cord, resulting in catastrophic cerebral herniation
- **GETA:** Direct laryngoscopy and endotracheal intubation, without optimal medication, can result in a hypertensive response and increased ICP, resulting in herniation

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Case Presentation

- 25 year old parturient (G3P2) with a known Chiari I Malformation presented to L&D at 36 weeks gestation due to worsening headaches, diplopia, unsteady gait, and proprioceptive defects
- 1st pregnancy: uncomplicated **Epidural** (unknown Chiari, headaches)
- 2nd pregnancy: uncomplicated **Spinal** (known Chiari, headaches)
- 3rd pregnancy: **GETA**
 - Induction: Propofol 200mg, Fentanyl 250mcg, Rocuronium 100mg. Labetalol 20mg. Nicardipine 5mg/hr
 - Intubation: direct laryngoscopy, BP peaked 130/53
 - Extubation: deep, paralyzed
- The patient was hemodynamically stable throughout, case uncomplicated

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Teaching Points

- Anesthetic management possesses inherent risk overall; whether neuraxial or general anesthesia is chosen
- **Neuraxial:** Dural puncture may produce a CSF pressure gradient between the brain and spinal cord, resulting in catastrophic cerebral herniation
- **GETA:** Direct laryngoscopy and endotracheal intubation, without optimal medication, can result in a hypertensive response and increased ICP, resulting in herniation
- Smooth RSI with pharmacologic blunting of sympathetic response to intubation & extubation limits the potential for catastrophe
- In each case of a parturient with intracranial pathology posing risks, a multidisciplinary discussion involving Obstetrics, Anesthesiology, Neurology, and Neurosurgery should be implemented