

ANESTHETIC CONSIDERATIONS FOR CESAREAN DELIVERY IN A PATIENT WITH HISTORY OF ANTEPARTUM HEMICRANIECTOMY

DR. JEREMY ALTMAN MD, DR. MARGARET O'DONOGHUE M.D
ALBANY MEDICAL CENTER
ALBANY NY



INTRODUCTION:

- Neurosurgical emergencies during pregnancy are rare but challenging, sometimes requiring urgent craniectomy to prevent maternal deterioration
- Simultaneous management of maternal survival, neurological function, and fetal well-being
- Further obstetric care requiring a balance between intracranial pressure (ICP) and hemodynamic stability
- Case: Parturient who underwent a craniotomy and subsequent craniectomy followed by successful cesarean delivery under neuraxial anesthesia
 - Key Points: Anesthetic considerations for active labor, neuraxial vs general anesthesia, role of craniectomy

CASE: A 39-YEAR-OLD FEMALE (G6P1131) WITH A HISTORY OF ASTHMA, HYPOTHYROIDISM, AND GESTATIONAL DIABETES PRESENTED FOR ELECTIVE CESAREAN DELIVERY AT 37 WEEKS.



16 weeks gestation

- Underwent endoscopic resection of a meningioma and bilateral optic nerve decompression

37 weeks gestation

- Neuraxial anesthesia deemed safe per neurosurgery; craniectomy serving as a pressure release valve to reduce risk of herniation

Outcome

- Healthy male neonate delivered, mother neurologically intact, eventually discharged on PPD#2
- Successful cranioplasty 8 weeks post-delivery.

18 weeks gestation

- Patient required an emergent right hemicraniectomy for subdural empyema

Anesthetic Plan

- Spinal: 0.75% Bupivacaine + Fentanyl 15 mcg + Morphine 100 mcg
- GA avoided to prevent hypertension with laryngoscopy & ICP increases from volatile anesthetic

TEACHING POINTS

Avoiding Active Labor

Active labor raises intracranial pressure via Valsalva. Cesarean delivery mitigates this risk factor, providing a controlled hemodynamic environment for parturient with underlying neuropathology.¹

Neuraxial vs. General Anesthesia

General anesthesia carries risk of significant hypertension during laryngoscopy and volatile agents can increase ICP. Neuraxial anesthesia avoids these risks when herniation risk is low.²

Role of Craniectomy

The right hemicraniectomy served as a pressure release valve, substantially lowering herniation risk. Reports of safe epidural use in prior craniectomy without neurologic symptoms support this approach.³

TAKEAWAY: Multidisciplinary collaboration between anesthesiology, neurosurgery, and obstetrics is essential to safely guide patients with prior craniectomy through delivery.

1. *Handb Clin Neurol* 2020;171:193
2. *BJA Educ* 2025;25:38
3. *Int J Gynaecol Obstet* 2025;168:487



ALBANY MED Health System

ALBANY MEDICAL CENTER