SOAP 2025 ANNUAL MEETING



- Incidence of 1.4%
- intracranial pressure.

 - another may be compromised.

Neuraxial Anesthesia in a Parturient with a History of Intracranial Arachnoid Cyst

Michelle Yanik MD, Lawrence Weinstein MD, Elsie Bigelow, MD

Arachnoid cysts are CNS lesions thought to develop from traction that splits the leptomeninges, forming a diverticulum withing the arachnoid membrane

Often asymptomatic but may cause an intracranial mass effect Parturients with intracranial masses present a clinical dilemma for the obstetric anesthesiologist, as they are often assumed to potentially have an elevated

In the absence of pathology, a dural puncture with CSF leak results in movement of CSF from the cranial to spinal spaces to equilibrate pressures. If there is a significant pressure gradient between intracranial and spinal CSF, or an obstruction of CSF flow, dural puncture can instead potentially cause brain tissue herniation, since the normal path of CSF flow from one space to

In assessing the safety of neuraxial anesthesia, it is essential to know the mass effect on ICP, intracranial compliance, and freedom of CSF flow.







SOAP 2025

- resection in childhood.

- minimizing risk of a dural puncture.

- The postpartum course was unremarkable.

Case Presentation and Past Medical History

• 23-year-old G1P0 female with history of arachnoid cyst status post craniotomy for

On exam: no symptoms consistent with elevated intracranial pressure (ICP) and a normal fundoscopic exam per a neurology consultation No radiological evidence of elevated ICP. Despite resection, evident of reaccumulation of cyst with evidence of chronic process. • After multidisciplinary discussions (including neurosurgical consultation), found no contraindication to vaginal birth or epidural anesthesia but did suggest

Perinatal consult with patient- early epidural with most experienced provider The patient presented at term in labor and received a lumbar epidural She delivered vaginally 9 hours later with nor intrapartum neurological issues.



Large lesion following along the left frontotemporal convexity with mass effect on the underlying cerebral hemisphere, likely <u>represent arachnoid cyst given the provided history. Mild 3 mm</u> rightward midline shift with no hydrocephalus. There is medialization of the posterior left occipital lobe and thinning of the left frontoparietal-temporal calvarium, indicating chronic process.

MRI Brain Read:

SOAP 2025

Patient evaluation in the setting of Intracranial Pathology:

- Each patient with intracranial pathology is unique and needs individual assessment by expert anesthesia, neurosurgical, and OB providers Anesthetic options may depend on the delivery plan and presence of other comorbidities To safely perform neuraxial anesthesia:
- - there should be preservation of free CSF flow between brain and spinal space no symptoms or findings suggestive of elevated ICP no pressure differential between the spaces.

- Radiological findings tense dura, flat gyri, compressed or dilated ventricles, midline shift, & caudad displacement of brain tissue • If neuraxial anesthesia is contraindicated, then peripartum analgesia and anesthesia plans should be made accordingly If general anesthesia is needed, providers should be familiar with the effects of increased CO2, anesthetic drugs, laryngoscopy and emergence on ICP

for the safe care plan to be established well before the delivery. **References:**

Anesthetic Considerations and Labor Analgesia Management

- 2. Cooper, T. et al. Intracranial Arachnoid Cyst in pregnancy: case report, lit review & evaluation of neuraxial anesthesia risk. Int J of OB Anesthesia. Oct. 2023,

Features of 1 ICP: headache, pupil changes, eye movement disorders, papilledema, neurological deficits, seizures, altered consciousness Safety of neuraxial anesthesia should be established as early as possible, and communicated OB colleagues & patient to set expectations

Conclusion: In this case of a parturient with an intracranial cyst, the patient had minimal midline shift, no CSF obstruction near the brainstem, and no symptoms suggestive of increased ICP. With appropriate clinical and radiological workup, she received safe epidural analgesia and had a comfortable vaginal delivery. Advanced planning and excellent communication between specialty consultants allowed

1. Leffert L, Schwamm L. Neuraxial Anesthesia in Parturients with Intracranial Pathology: A Comprehensive Review & Reassessment of Risk. Anesthesiology 2013;119(3): 703-718