

Introduction

Meningiomas are common intracranial neoplasms of yet undetermined etiology. However, accelerated growth of such tumors during episodes of elevated serum estrogen and progesterone has been noted to occur in pregnant patients. Upon thorough immunohistochemical analysis, these particularly fast growing tumors have been confirmed to demonstrate an overexpression of estrogen and/or progesterone. We hereby present a unique case of a 23-year-old female patient in the third trimester of pregnancy who presented with symptoms of significant headache, memory loss and visual changes that gradually developed over a span of 5 months.

Methods

Magnetic resonance imaging (MRI) of the brain revealed a dural-based, heterogeneously enhancing mass centered along the left tentorium, just posterior to the transverse sinus, with supratentorial extension and significant surrounding edema. Differential diagnoses included meningioma vs hemangiopericytoma. Given the patient's age, symptoms and amount of edema, the latter of which posed a significant risk for seizures, as well as a sign of tumor aggression, a postpartum surgical

Results

Postpartum pre-operative MRI imaging of the brain revealed near complete resolution of previously seen left tentorial extra-axial lesion, with mild regional calcification and/or hemorrhagic products, and resolved adjacent occipital lobe edema.

Conclusions

As previously reported, certain meningiomas appear to be markedly influenced by hormonal levels of estrogen and/or progesterone. Since meningioma shrinkage or even spontaneous regression may occur after pregnancy, postpartum repeat imaging is strongly advised to be an important component of pre-operative evaluation to circumvent unnecessary risks associated with neurosurgical interventions.

Learning Objectives

By the conclusion of this session, participants should be able to:

1) Review the typical presentation, diagnosis, treatment and prognosis of pregnancy-associated meningiomas.

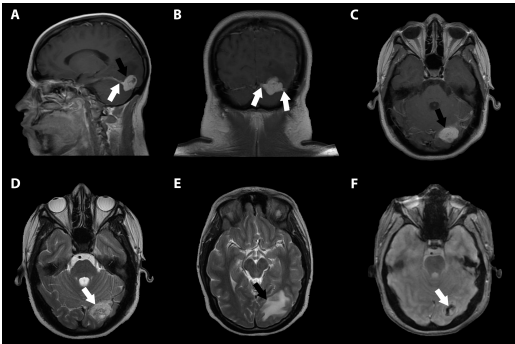
2) Comprehend results of latest research exploring possible etiologies of pregnancy-associated meningiomas.

3) Understand the importance of imaging as an essential component of pre-operative evaluation to circumvent unnecessary risks associated with neurosurgical interventions when confronted with this category of central nervous system tumors.

References

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Figure 1. Third Trimester of Pregnancy



A. Post-contrast T1 sagittal, mass (black arrow) extending along the tentorium via dural tail (white arrow)

B. Post-contrast T1 coronal, mass
extending along the tentorium with dural
tails (white arrows)

C. Post-contrast T1 axial, avidly enhancing occipital lobe mass (black arrow)

D. T2 axial, hyperintense heterogeneous mass (white arrow)

E. T2 axial, mass associated occipital lobe edema (black arrow)

F. GRE T2 axial, low signal within the mass, suggestive of calcification versus hemorrhagic products (white arrow)

Figure 2. Postpartum “Pre-Operative” MRI