

## Surviving Brain Tumor in Pregnancy

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### Abstract

A young woman of 22 years attended Obstetrics OPD with the complaints with sudden onset of severe headache and forward protrusion of the right eye ball for four months, it was painless and progressive in nature. On Ophthalmoscopy examination, she was found to have vision 6/6 on left and 6/9 with Relative Afferent Pupillary Defect (RAPD) in on right side. Bilateral extra ocular muscles were normal. MRI showed a well defined, heterogeneous extra axial mass lesion seen in right temporal region with both intracranial and intra orbital components suggestive of sphenoid wing meningioma. The patient underwent surgery and the histopathology proved the diagnosis as meningioma. The case of epidermoid brain tumor in a young female with pregnancy is reported for its unusual presentation.

### Key Words

Pregnancy, Sphenoid Wing Meningioma, Epidermoid Brain Tumor

### Introduction

Although maternal mortality due to obstetric causes has declined, there has been a relative increase in non-obstetric causes of maternal mortality and morbidity. Central nervous system diseases, including intracranial tumors, particularly malignant brain tumors and trauma, remain a leading cause of indirect maternal mortality. Primary central nervous system tumors occur in <6 in 100,000 females but are rare during pregnancy. (1) The distribution of histological types of brain tumors are similar in both pregnant and non-pregnant women. (2) Pregnancy may aggravate the natural history of an intracranial tumour, and may even unmask a previously unknown diagnosis (3, 4) improve spontaneously postpartum.(4) This has been attributed to water retention, engorgement of vessels, and the presence of sex hormone receptors on tumor cells leading to explosive growth of the tumor. We report a case of pregnant women in the third trimester with sphenoid wing meningioma. The patients underwent caesarean section and pregnancy was managed successfully.

### Case Report

A 22-year-old lady, G2P1L1 with previous LSCS 2 year back presented at 28 weeks of gestation with sudden

onset of severe headache and forward protrusion of the right eye ball for four months, it was painless and progressive in nature. Her pregnancy had been uneventful prior to the episode. There is no other significant past, personal or family history.

Physical examination confirmed a Glasgow Coma Scale (GCS) score of 15 and on Ophthalmoscopy examination, she was found to have vision 6/6 on left and 6/9 with Relative Afferent Pupillary Defect (RAPD) in on right side. (*Fig 1*) Bilateral extra ocular muscles were normal. The clinical and sonographic test revealed regular foetal growth and morphology

MRI showed a well defined, heterogeneous extra axial mass lesion seen in right temporal region with both intracranial and intra orbital components suggestive of sphenoid wing meningioma. (*Fig 2*) Neurosurgery consultation was done and they advised surgery after the delivery.

The diagnosis, treatment options and prognosis of tumor were discussed with multi-disciplinary inputs from the neurologist, neurosurgeon, obstetrician and medical oncologist. The patient and her family insisted to prolonging the pregnancy. She underwent regular

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**Fig 1. Showing Relative Afferent Pupillary Defect**



antenatal checkups and was admitted at term gestation. Her routine investigations and obstetrical ultrasound and were unremarkable. Again neurological and ophthalmological consultation was done, fitness for surgery taken. Decision for elective lower segment caesarean section (LSCS) with bilateral tubal ligation was taken and a healthy female baby with a birth weight of 2.5 kg and Apgar scores of 10\10 was delivered. Her intraoperative and postoperative period were uneventful and was attached to neurosurgery for further management. She undergone a craniotomy after three months of her LSCS and on frozen section the diagnosis of psammomatous meningioma was made but the definitive HPE diagnosis was the epidermoid tumor of the brain. She was seen in her usual state of health after one month of her follow up.

**Discussion**

In 1898 Bernard described the first case of a brain tumor during pregnancy. (4) Cushing and Eisenhardt were the first to describe the relationship between pregnancy and the rapid increase of neurologic symptoms in women with meningiomas.(5) The expression and potential role of estrogen, progesterone, and androgen receptors in meningioma have been investigated thoroughly. (4,5) The management of intracranial tumors in pregnancy must be individualized depending on the patient's physical condition, tumor location, gestational age, and other concomitant factors in relation to pregnancy. Surgical intervention during pregnancy should be avoided if possible, due to increased risk to both mother and fetus. In contemporary practice, it is feasible in most cases of meningioma and other benign, slowly progressive tumors to continue to full-term delivery without endangering the mother or fetus.(4)

Postpartum surgical intervention poses less risk due to decreased tumor size and vascularity. Some authors

**Fig 2. Showing Heterogeneous Extra Axial Mass lesion seen in Right Temporal Region with Both Intracranial and Intra orbital Components -Sphenoid Wing Meningioma**



recommend immediate abortion once signs of increased intracranial pressure have manifested, whereas others advise non-operative management to decrease the intracranial pressure until fetal lung maturity is ensured. Surgical excision is a primary management of meningioma. Complete resection is determined to some extent by the tumor site.(5) Mefipristone, a potent antagonist of progesterone and glucocorticoid, and Tamoxifen is used in the treatment of unresectable, or recurrent meningiomas.(5)

**Conclusion**

Neurosurgical diseases in pregnancy simultaneously jeopardize two lives and represent both medical and ethical problem. Upon confirming the presence of intracranial malignancy in pregnancy, further procedure is very individual and it implies cooperation of gynaecologists, neurologists, neurosurgeons, oncologists, anaesthesiologists and neonatologists.

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