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Case Report

Headache in pregnancy-a diagnostic dilemma: an unusual case of advanced glioblastoma multiforme in pregnancy: a case report and review of literature

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ABSTRACT

This was a case report of a twenty year old patient with a obstetric score of G2P1L1 with 28 weeks of gestation presented with persistent intractable headache leading to a diagnostic conundrum. Magnetic resonance imaging of the brain revealed an advanced glioma in the right frontal lobe with a mass effect and a midline shift for which emergency surgical resection was sorted followed by chemoradiation which eventually lead to a satisfactory obstetric and perinatal outcome. Glioblastoma multiforme is a rare diagnosis during pregnancy which carries unique challenges to the mother, foetus and the health care providers. A combined effort from a multidisciplinary team is the key for a successful outcome.

Keywords: Pregnancy, Headache, Brain neoplasms, Glioblastoma multiforme

INTRODUCTION

Glioblastoma multiforme which falls in the category of grade IV astrocytoma is one of the malignant forms of brain tumours. The association between astrocytoma and pregnancy is a very rare occurrence and in most cases has an adverse outcome for the mother and the foetus. It was first described by Rand and Andler in 1950 in a report of 3 cases with fatal outcome. Although the exact incidence rates of gliomas in pregnancy is lacking, the incidence of primary malignant brain tumours in pregnant women is about 2.6-15/1,00,000.^{1,3} The etiology of GBM is unknown in most cases, suggested causes include genetic susceptibility with single nucleotide polymorphisms in DNA repair genes, ionising radiation, Nitro compounds exposure.² It has a varied clinical presentation ranging from minor symptoms like nausea, vomiting or it could also lead to catastrophic events like weakness of limbs or permanent vision loss. In our case she presented with persistent headache alone leading to a diagnostic dilemma as it mimics various commonly occurring disorders in pregnancy such as the pre-eclampsia-

eclampsia spectrum, tension headache, sinusitis, migraine. Because of low prevalence, reports in the worldwide literature are scarce and for this reason we decided to highlight and report this case.

CASE REPORT

A twenty year old G2P1L1 with no prior history of the disease who is a booked case presented at 28 weeks of gestation with complaints of persistent intractable headache since 15 days. The headache was dull, constant, aggravated during the night and not relieved on over the counter medications. She was able to perceive foetal movements well and there was no h/o bleeding or leaking per vaginum.

There were no h/o seizures, vision loss, weakness of limbs, speech disturbances. No other significant past medical or surgical history.

On arriving to the hospital, the patient was conscious and confused with a Glasgow coma scale of E4V4V5. Her

vitals were stable, afebrile. Pupils were round and reactive to light. Her cranial nerves, sensory and motor system examination was normal. During the course of stay in the hospital over 24 hours there was a sudden neurological deterioration and her GCS dropped to E3V3M2 as she developed left sided weakness, deviation of the angle of mouth to the right and her left pupil became constricted.

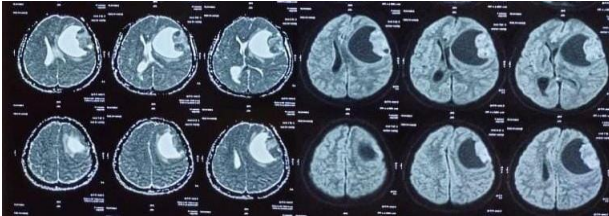


Figure 1: Magnetic resonance imaging of the brain revealing a large lobulated solid cystic mass lesion in the right frontal lobe with a mass effect and a midline shift.

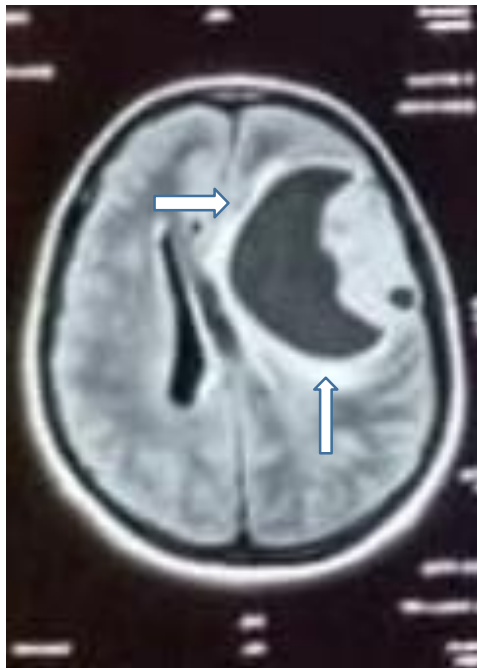


Figure 2: Brain MRI shows large right frontal (ring enhancing) lesion with midline shift.

Diagnostic assessment

On initial examination this catastrophic decline in the neurological status was unanticipated. Blood investigations were overall within normal limits. Magnetic resonance imaging of the brain revealed a large lobulated solid cystic mass lesion in the right frontal lobe. The cystic component of the lesion measured 5.9×3.8×4.4 cm (AP×MI×SI) and the solid component measures 4.3×2.5×3.9 cm (AP×MI×SI) with perilesional and diffuse cerebral edema. Midline shift of 15 mm to the left was noted. Suggestive of neoplastic lesion with mass effect and midline shift. This detrimental neurological

decline warranted an immediate surgical management. Craniotomy was done for tumour excision. This was followed by adjuvant chemotherapy by oral temozolamide (75 mg/m²) for 5 cycles. Radiotherapy was withheld considering the radiation exposure to the foetus.^{4,10} An emergency LSCS was done at 37 weeks due to an obstetric indication with a satisfactory maternal and perinatal outcome. This was followed by concurrent radiotherapy.

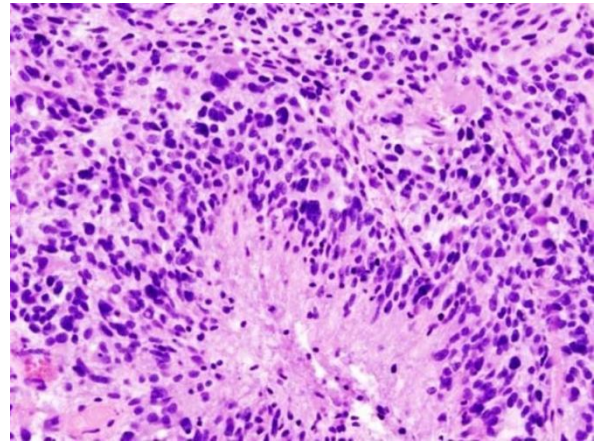


Figure 3: Histopathological image of GBM showing hypercellular infiltrative lesion with variable morphology.

DISCUSSION

Pregnancy itself produces a significant physiological and neurological alterations that make the antenatal mother more vulnerable to stress which causes any pre-existing pathology to aggravate and manifest.⁵ The coexistence of glioblastoma multiforme during gestation creates a dilemma and a great challenge for the multidisciplinary team to diagnose and treat such cases, especially when the clinical presentation is not accurate enough to clinch the diagnosis in the earlier stage.⁶ GBM per se is a highly malignant infiltrating tumour that usually grows to significant size before giving rise to clinical symptoms.⁷ It may extend to the meningeal surface or up to the ventricular wall and produce symptoms accordingly. In our case as the presenting symptom was merely a headache it caused delay of the hospital visit by 15 days hence eventually delaying the initiation of the treatment. Rasheedy et al in a case report of an advanced case of glioblastoma multiforme and pregnancy concluded that advanced GBM in pregnancy is a medical and ethical dilemma and generally carries a variable prognosis. Continuous family counselling and multidisciplinary teamwork approach are the fundamental factors for a successful outcome.^{8,9}

Policicchio et al in a case study opined that when the most malignant primary brain tumor such as GBM, affected a pregnant woman, it became a very challenge situation, as far as no current treatment for GBM was curative and there were neither guidelines nor enough evidence about the management of such a dramatic situation in pregnancy.

CONCLUSION

In antenatal mothers presenting with non-specific complaints like headache which may mimic other commonly occurring spectra of disorders in pregnancy, timely diagnostic interventions needed to be carried out to arrive at a diagnosis. This ensures that there is no delay in the initiation of appropriate treatment for a better obstetric and perinatal outcome.

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Ethical approval: Not required

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