



## POSTERIOR FOSSA SURGERY IN THE LATERAL POSITION IN A PREGNANT PATIENT WITH CEREBELLOPONTINE ANGLE TUMOR : ANAESTHETIC MANAGEMENT

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### ABSTRACT

Here we present a case report of a pregnant woman diagnosed with astrocytoma and having 7 months amenorrhoea. She was operated for her brain tumor in the lateral position and her caesarean section was carried out in the same session in the same position. Intricate management of intracranial pressures during the operation in the lateral position while maintaining fetal oxygenation makes this case an interesting one. Surgical resection is usually the first line of management in a newly diagnosed malignant astrocytoma, however with radiation therapy an option, the treatment toxicities to the mother and the foetus should be considered. Anaesthetic precautions during this patient are the ones required for a raised (Intracranial pressure)ICP.Avoiding fetal compromise and maintaining adequate ICP proves to be a unique challenge.(4)(5)

### KEYWORDS :

#### BACKGROUND

Unfortunately headaches are a normal part of pregnancy and simple measures often succeed in relieving most of them. However there are always exceptions as various studies show us.(1) Here we present a case report of a pregnant woman diagnosed with astrocytoma and having 7 months amenorrhoea. She was operated for her brain tumor in the lateral position and her caesarean section was carried out in the same session in the same position. Intricate management of intracranial pressures during the operation in the lateral position while maintaining fetal oxygenation makes this case an interesting one.

#### CASE PRESENTATION

This 22 years old housewife having 7 months amenorrhoea presented with the complaints of headache and giddiness. Her headache was generalised, continuous, throbbing in nature and accompanied by a feeling of heaviness since 3 months. She was experiencing giddiness with object rotation since the same time.

The headache was not relieved by pain medication and her concern for the pain was deemed inappropriate. Once it became unbearable she was forced to seek medical attention. There is no family history of headaches.

#### INVESTIGATIONS

Significant findings in her investigations were a haemoglobin value of 7.8 gm%, serum creatinine 1.47 units and an MRI showing a cerebellar space occupying lesion with extensions into the medulla. (image 1) HPE revealed it was an astrocytoma.

#### TREATMENT

Surgical intervention was planned for the (space occupying lesion)SOL and a caesarean section was planned along with it. After correction of her haemoglobin concentration by infusing 2 units of packed cell volume concentrate, and after proper preanaesthetic evaluation she was taken into the operation theatre and positioned in the lateral position.

#### PREMEDICATION:

She was premedicated with intravenous(iv) injections of ondansetron 4mg, glycopyrrolate 0.2mg, Dexona 8 mg, fetanyl 100 microgram.

#### INDUCTION:

After preoxygenation she was induced with injection thiopentone sodium 300 mg intravenous + injection vecuronium 6 mg iv . She was intubated with an endotracheal tube numbered 7.5, portex and cuffed.

#### MAINTENANCE:

Anesthesia was maintained with oxygen, sevoflurane and injection vecuronium 1 mg iv sos. Injection Mannitol 300ml (20mg/100ml) was administered intra op during tumor resection and during cesaerean section.Other intravenous fluids administered included injection normal saline 2 litres.The SOL excision in lateral position took 2 hours and the caesaerean section via a paramedian approach took an hour

more. The patient remained hemodynamically stable during the procedure. A neonatal resuscitator was on standby for the neonate. The patient's muscle relaxation was reversed after administration of injection glycopyrrolate 0.4 mg iv, with injection Neostigmine 2.5 mg iv slowly. After return of spontaneous respiration and adequate muscle tone and power extubation was done on the operating table.

#### OUTCOME AND FOLLOW-UP

She was stable in her post op period and for the coming week. Her child a 2.5 kg male was completely normal. She was discharged after a week after being in a completely asymptomatic state. (image 2)

#### DISCUSSION

Headaches are common during the first and third trimester. Surge of hormones being the cause in the first and poor posture being the cause in the third trimester. Rare causes do include brain tumors. (1)(2)(3)

Researchers often speculate on a possible link between sex hormones produced during pregnancy, and their interaction with hormonal receptors on glial cells of the central nervous system. Such an interaction could lead to increased tumour growth rates and/or malignant progression. "If a pregnancy is decided, we advise performing a very close neurological follow-up with repeated control MRIs in addition to rigorous obstetrical monitoring."(8)(9)

Surgical resection is usually the first line of management in a newly diagnosed malignant astrocytoma, however with radiation therapy an option, the treatment toxicities to the mother and the foetus should be considered. Anaesthetic precautions during this patient are the ones required for a raised ICP.Avoiding fetal compromise and maintaining adequate ICP proves to be a unique challenge.(4)(5)

In the left lateral position cardiac output has been found to be maximal in a number of studies; the inferior vena cava lying on the right side of the vertebral column should have the least compression in this position from the uterus whose weight bears on the left side of the abdomen. The cardiac output while left lateral is more than when they are supine.(10)

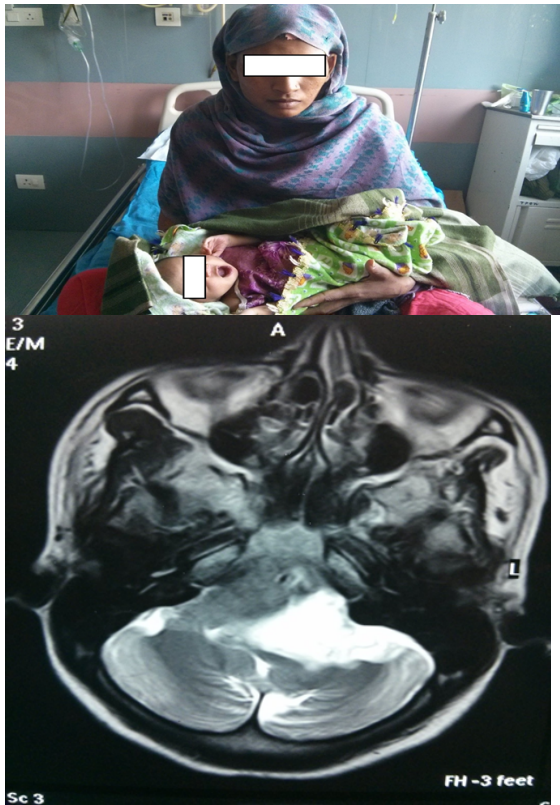
The goal of neuroanesthetic care for patients with brain tumors is to maximize therapeutic modalities that reduce intracranial volume. ICP must be controlled before the cranium is opened, and optimal operating conditions obtained by producing a slack brain that facilitates surgical dissection.Various maneuvers and pharmacologic agents have been used to reduce brain bulk. For example, administration of diuretics or steroids, intravenous mannitol hyperventilation, and systemic blood pressure control may be implemented preoperatively to reduce cerebral edema and brain bulk, thereby reducing ICP. The application of these methods selectively or together, when necessary, is often accompanied by marked clinical improvement.(6)(7)

#### LEARNING POINTS/TAKE HOME MESSAGES

Organic causes even though less common should always be kept

in mind when dealing with a headache during pregnancy.

- A close neurological followup is an essential component along with the routine obstetric care for all women having a history of or a predisposition to astrocytomas.
- This case demonstrated that when absolutely necessary anaesthesia, neurosurgical and obstetric intervention for posterior fossa lesions along with caesarean section can be performed successfully in the third trimester.
- Furthermore with meticulous monitoring the operation can be performed in the lateral position without any major adverse fetal effects.



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