

Pregnancy Outcome in Medulloblastoma Treated Survivor – A Rare Case Report

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Abstract

Medulloblastoma is a primary central nervous tumour with malignant potential which begins in brain or spinal cord. It is the second most common brain tumour in Children accounting for 20% of cases. It can occur in any age, but most often occur in young children. It is found rare in adult group. It is primarily a cerebellar tumour and as cerebellum is mainly involved in muscle co-ordination, balance and movement hence this tumour symptoms include–headache, nausea, vomiting, dizziness, tiredness, Double Vision, Poor Co-Ordination and unsteady Walk. Treatment Includes Surgery, Chemotherapy And Radiotherapy.

Keywords: Medulloblastoma, craniotomy, Pregnancy and Caesarean section.

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INTRODUCTION

It is a primitive neuroectodermal tumour (PNET) as it is formed by the foetal cells that remain after birth. It occurs exclusively in the posterior fossa and spreads via the cerebrospinal fluid to the other areas around the brain and spinal Cord. This tumour rarely spreads to the other organs of the body. It has a rapid growth rate, symptoms evolving over a period of weeks to months. Signs and symptoms of cerebellar dysfunction and Increased Intracranial Pressure like irritability, lethargy, loss of appetite, morning headaches, nausea, vomiting, anorexia and behavioural changes are frequently observed. The symptoms are often so non-specific that the tumour first goes unnoticed. In Infants, increased size of head and irritability may mark to be the initial symptoms. Based on different types of genetic mutation, four subtypes of medulloblastoma have been identified:

- WNT-activated.
- SHH-activated.
- Group 3(non-wnt/non-shh).
- Group 4(non-wnt/non-shh).

Medulloblastoma and Pregnancy

Medulloblastomas are treated by surgical removal of tumour followed by radiotherapy. As craniospinal irradiation can damage the hypothalamic-pituitary axis, ovaries and uterus that can consequently result in amenorrhea followed by infertility in treated patients. Patients with primary brain tumours are at risk for infertility because of the damaging effects on HPO axis by tumour infiltration, cranial surgery & radiotherapy.

It can disrupt the function of HPO axis by depleting the pool of ovarian oocytes, can even Cause Growth Retardation, Primary Hypothyroidism or can bring about damage to uterus making pregnancy unlikely to reach term. However, here we successfully managed a patient with spontaneous conception who delivered a live term baby with history of resection of posterior fossa for medulloblastoma tumour along with h/o receiving multiple craniospinal irradiations.



Figure 1: Large ICSOL in the posterior fossa with mass effect and ventriculomegaly and calcification noted the lesion suggestive of Medulloblastoma

CASE REPORT

A 25 year old, married for one year, primigravida, gestational age of 37+3 weeks with BMI of 22.2kg/m² known case of medulloblastoma -treated with emergency ventriculo peritoneal shunt + excision of tumor + left paramedian suboccipital craniotomy done 9years back, known case of hypothyroidism on treatment presented at Sree Balaji Medical College And Hospital, Chromepet Chennai with complaint of decreased perception of fetal movements.

Menstrual History

She attained menarche at thirteen years of age, regular cycles, 3/30 days pattern.

Past History

Past history of Medulloblastoma tumour–diagnosed in 2012 and was treated with emergency ventriculo peritoneal shunt along with excision of tumour with left paramedian suboccipital craniotomy done, followed by radiotherapy for 35 Days and 8 cycles of chemotherapy in 2013. She has a history of amenorrhea for eight months following surgery, for which she was treated with oral medications and resumed her cycles thereafter. Further her menstrual history was uneventful.

Marital History

She had a non-consanguineous marriage at 24 years of age and conceived spontaneously within a year of marriage.

Trimester History

In the first trimester of pregnancy, was diagnosed with hypothyroidism (Tsh-9.94) and was started on Tab. Thyronorm. At 29 weeks of gestation, she became covid positive and was home quarantined. At 32 weeks of gestation, antenatal steroids were covered; all antenatal & foetal growth scans were within normal range. At 37 weeks, patient got admitted at our hospital with chief complaints of decreased perception of foetal Movements.

Patient was assessed under Asa-III by anaesthetists and was taken up for elective lower segment caesarean section under general anaesthesia. Lscs proceeded in normal way to deliver a single live, term, female baby weighing 3.189 Kg. Intra-operatively patient had atonic PPH ,was managed conservatively with uterotonic drugs, intravenous fluids, PRBC transfusion, fresh frozen plasma & foley’s tamponade. Postnatal period was uneventful. Lactation was initiated was normal. Baby and mother both were healthy postnatally.

DISCUSSION

Radiation therapy can affect fertility and pregnancy outcomes by dysregulation of the following:

1. Hormonal Dysfunction - Radiation induced damage can cause disruption of the HPO axis which can lead amenorrhea followed by infertility and also lactational problems.
2. Ovarian Dysfunction - Radiation can cause direct damage to ovarian follicles, leading to follicular atrophy and decreased ovarian follicular reserve. In addition, chemotherapeutic agents add on to the ovarian failure.
3. Uterine Dysfunction- Pelvic irradiation causes increased risk of pregnancy related complications including spontaneous miscarriages, preterm Labour, low birth weight in babies and placental abnormalities.

CONCLUSION

We have discussed a case report of a 25 year old, primigravida, Known Case Of medulloblastoma - Treated with emergency ventriculo peritoneal shunt + excision of tumour + left paramedian suboccipital craniotomy, known case of hypothyroidism on treatment came to Sree Balaji Medical College And Hospital, Chromepet Chennai with Complaint of decreased perception of fetal movements and was taken up for elective lscs and delivered a live, term, female baby with normal Weight, normal apgar score and no gross anomalies.

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