UNUSUAL CASE OF HEAD INJURY PRESENTED WITH BRAIN GLIOMAS

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Abstract

7 years female child came with parents who gave us history that 1month back, child during playing had fall on face and lost consciousness which remained for 30 min followed by convulsion. On examination patient was conscious, responds to command, vitals were stable, aphasia was present , pupils were equal and reactive to light bilaterally and horizontal gaze was restricted. There was no facial weakness , Tone increase more in left upper and lower limb .Deep tendon reflexes (DTR)increase in left side. plantar reflex were extensors . MRI was done which shows intra axial space occupying lesion in brainstem with expansion of brainstem with hydrocephalus. Pt was inoperable and ventriculoperitoneal shunt was done for hydrocephalus . Post operatively patient was kept on assisted ventilation .

Conclusion . Unusual presentation of brainstem gliomas as head injury .

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Keywords- hydrocephalus, space occupying lesion, ventriculoperitoneal shunt

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Introduction

Glioma arising from brain stem are of glial pathology and these are primary tumor's of brain[1].

In paediatric age group gliomas are of two categories. One is diffuse intrinsic pontine gliomas (DIPG) DIPG is a having worst prognosis as it is a rapidly progressive growth and it arises from part of midbrain commonly in pons . DIPG is difficult to manage and has a less possibility of cure as It is a diffuse type of neoplasm and have tendency to infiltrate surrounding brain parenchyma affecting Vital centers controlling respiration and heart. Other is a focal brain stem glioma**.** It is having

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relatively better prognosis as it grows with slow speed and not affect pons .also it not spreading in diffusely[2].

Brain stem gliomas that are present in the region of the brain stem, which is the area of aqueduct of sylvius and the fourth ventricle. Gliomas of the ventral pons are diffuse infiltrative, high grade extremely aggressive cancers can lead to death in less than a year. This also involve the adjacent brain structures beyond the pons. In tectal lesions, hydrocephalus occurs due to the ventricular compression.[3]

The usual clinical manifestation of these brain tumours (gliomas) is in the form of gradual progression of focal neurologic deficit , this neurologic deficit predominantly observed as muscle paresis. Followed by clinical manifestation suggestive increased intracranial pressure consisting of headaches, nausea and vomiting, and cognitive impairment. Convulsions is also not uncommon presentation mode[4].

Treatment of brain stem gliomas depend upon different options like radiotherapy and chemo therapy and surgery. Also, treatment recommendation depend upon the signs and symptoms of the disease that the tumor is worsening.[5] After extensive search in literature it was revealed that only 3 cases of glioma located in the brainstem has been reported [6] . We therefore present unique case of it in childhood diagnosed with glioma of the brainstem.

Case presentation 10 years female child came with parents who gave us history that 1month back, child during playing had fall on face and lost consciousness which remained for 30 min followed by convulsion which was generalized tonic-clonic type remained for 5min, one episode , subsided on its own .They took the patient to private practitioner where symptomatic treatment for pain was given. She was advised to refer to higher center but due to financial problem parents kept patient at home. Parents noticed that after 48 hours of fall patient could not lift her left leg and she could

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not speak properly. Since last 15 days patient also developed dysphagia and so they decided to shift the patient to higher center.

On examination patient was conscious, responds to command, vitals were stable, aphasia was present , pupils were equal and reactive to light bilaterally and horizontal gaze was restricted. There was no facial weakness , Tone increase more in left upper and lower limb .Deep tendon reflexes (DTR)increase in left side. plantar reflex were extensors . MRI was done which shows intra axial space occupying lesion in brainstem with expansion of brainstem and causing mild mass effects over inferior cerebellar tonsils and fourth ventricles causing mild hydrocephalus. It shows hyperintense signal on T2W1 and Hypointense signal on T1W1.It shows mild patchy enhancement on post contrast study. Feature suggestive of brainstem glioma. According to neurosurgeon it was diffuse inoperable tumor type so resection of tumor was not possible and they option for VP shunting as CT scan shows dilated ventricles due to hydrocephalus.

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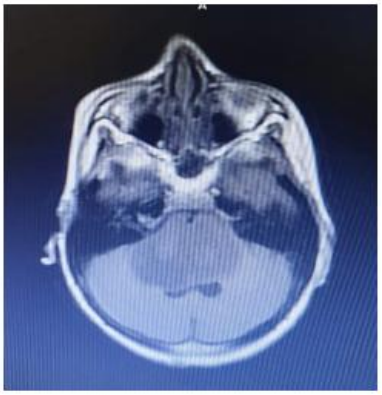

Figure 1 coronal and sagittal section of MRI brain shows intra axial space occupying lesion in brainstem with expansion of brainstem and causing mild mass effects over inferior cerebellar tonsils and fourth ventricles causing mild hydrocephalus. It shows hyperintense signal on T2W1 and

Hypointense signal on T1W1. It shows mild patchy enhancement on post contrast study. Feature suggestive of brainstem glioma.

Figure 2. CT scan shows dilated ventricles due to hydrocephalus.

Postoperative patient was kept on ventilator and Arterial blood gas (ABG) analysis shows respiratory acidosis with no compensation.Patient is on ventilator with bad prognosis explained to parents.

Discussion-

Gliomas are rare in children. There are many studies [6,7] showing common location of gliomas in supratentorial sites within central nervous system . In our patient site was on intra axial space occupying lesion in brainstem . recent evidences observed by researchers of Washington University School of Medicine located at St. Louis describes hypothesis behind certain behavior of brain neoplasm . it is a retinoblastoma protein (RB) that decreases the risk of neoplasm in brain. This RB is found less in amount in a male brain parenchyma hence it can explain incidence of brain tumour is more common in males [8] . contrary to this theory present case belongs to female

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gender.Kristin J. Weaver, MD et al [9] reported two children suffering from angiocentric gliomas of brainstem which is similar to present case.

Covington et al [10] in 2009 reported five years old female child with disturbed gait having history of repeated fall while walking.on inveatigations and carefull clinical examination found to have hydrocephalous secondary to mid brain neoplasm. which needed ventriculoperitoneal shunt which was similar to our case . Sophia F. Shakur, B.S.et al[11] in there case series of patient of angiocentric glioma found that convulsive disorder was as the most common presentation which is similar to present case study. Subhasis Mishra et al[12] studied in there case report on gliomas shows clinical feature as headache which was followed by an episode of seizure and hemiparesis which was similar to present case . as per evidence of many randomized controlled trials(RCT) adjuvant chemotherapy is having promising role in a management of high grade gliomas (HGGs) in children. These studies also suggest very minimal efficacy of surgery and radiotherapy in reducing early deaths[13,14,15,16]. Our patient was not advised for surgery, chemotherapy or radiations . Unfortunately treatment was palliative and symptomatic essentially. Hence a extensive research on this neoplasm is required so that effective tools or chemotherapy may be invented to cure this grave cancer[17,18,19].

Conclusion . Unusual presentation of brainstem gliomas which needs better understanding and treatment to improve quality of life and good prognosis.

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