ORIGINAL RESEARCH PAPER

Internal Medicine

ATYPICAL PRESENTATION IN A CASE OF BRAIN STEM GLIOMA

KEY WORDS: MRI, DSC-MRI, PET, SPECT

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ABSTRACT

Brain stem gliomas typically manifest with specific clinical symptoms related to cranial nerve dysfunction, motor impairment and coordination deficits. However, atypical presentations of brain stem gliomas can occur, challenging the timely diagnosis and management of these tumors1. We present a case study of a 17-year-old patient with an atypical presentation of a brain stem glioma2. The patient initially presented with altered behaviour, visual disturbances, and impaired memory, which deviated from the classical symptoms associated with brain stem glioma. Diagnostic imaging revealed a tumour located in the mid brain region further investigation confirmed the diagnosis of a glioma with histopathological analysis. This case highlights the importance of considering atypical presentation of brain stem glioma and underscores the need for a comprehensive diagnostic approach to ensure early detection and appropriate treatment strategy.

INTRODUCTION:

Brainstem glioma are aggressive tumor[3] (1.6% of primary brain tumor) present in the area of aqueduct of Sylvius and Fourth ventricle having mortality of <1year. 60% glioma[4] are found in pons and may extend beyond the brainstem. Histologically it has 4 grades, depending upon nuclear atypia, vascular proliferation, miosis and necrosis. With gradual enlargement it will involve cerebellum, cortex and spinal cord. Most common symptoms triad are –

1) Cerebellar deficit
2) Long tract involvement
3) 6 and 7 nerve involvement and other cranial nerve involvement, along with headache and altered consciousness due to obstruction of cerebrospinal fluid flow.

Case Presentation:

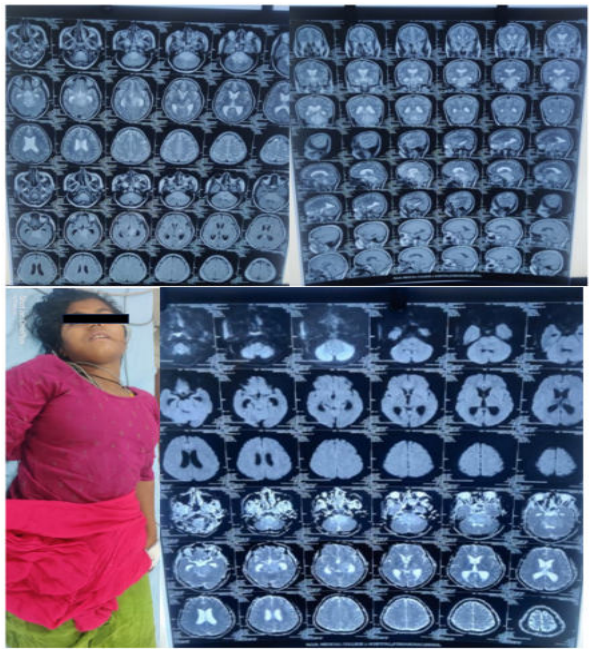
A 17year old female admitted with altered behavior, having history of visual disturbance and impaired memory since last one month and bilateral weakness of all limbs along with bilateral ptosis. On physical examination vital signs were normal. On Neurological examination both pupils were mid dilated, with bilateral ptosis and had papilledema in fundoscopy.Tone was increased in all 4 limbs with lower limbs >upper limbs and bilateral plantar extensor. Power 4/5 in Right lower limbs and 5/5 in left lower limb and 4/5 in right upper limb and 5/5 in left upper limb. There was no history of dysarthria, dysmetria, dysdiadochokinesia, tremor.

Complete Blood Count, Liver function test, Kidney function test, Serum Electrolytes were normal. MRI brain demonstrated - Heterogenous ring enhancing lesson in brain stem extending to bilaterally cerebellar hemisphere and thalamus left >right and dilated ventricles. So, it is a case of brain stem glioma with hydrocephalus. Patient had been treated conservatively and was referred to higher center.

DISCUSSION:

Brainstem gliomas are slow growing tumors affecting children and young adults are very difficult to treat and their survival rates are very poor. They usually present with 6th.7th, cranial nerve palsy followed by long tract sign. Here in this case of 17yr old female, 6th and 7th cranial nerves are not involved rather 3rd cranial nerve was involved with atypical symptom like memory impairment, behavior changes, visual disturbance were seen, which were entirely different from typical symptoms of brain stem glioma.

MRI, DSC, PET techniques are used to determine and treat the tumor. Malignant brain stem gliomas are grade 3 and 4 and have extremely extensive aggressive lesion.



Limitations:

1) Non-availability of Neuro-oncosurgeon; PET and SPECT in our hospital.
2) Lack of biomarkers- Currently there are no specific biomarkers for genetic mutation that consistently predict the response of treatment after giving chemo and radio therapy

CONCLUSION:

Atypical brain stem gliomas are subset of gliomas that exhibits certain characters that differ from typical or more common gliomas. The rarity and complexity of brain stem gliomas poses challenges in conducting clinical trial to evaluate new treatment strategy[5]. Limited patient populations and the need for specialized expertise, make it difficult to gather sufficient data to perform advancement in treatment option. In recent years, an increased availability of biopsy and rapid autopsy tissue samples for preclinical has combined with the advent of new genomic and epigenomic profiling tools to yield remarkable advancements in understanding the disease mechanisms.

REFERENCES

1. Zhou, Z., Singh, R., & Souweidane, M. (2016). Convection-Enhanced Delivery for Diffuse Intrinsic Pontine Glioma Treatment.
2. Di Luca, M. (2012). Faculty of 1000 evaluation for Activity- dependent proteolytic cleavage of neuroligin-1. F1000 - Post-publication peer review of the biomedical literature.
3. Huse, J. (2014). Faculty of 1000 evaluation for the genomic landscape of diffuse intrinsic pontine glioma and pediatric non-brainstem high-grade glioma. F1000 - Post-publication peer review of the biomedical literature.
4. Huse, J. (2017). Faculty of 1000 evaluation for Targeting neuronal activity-regulated neuroligin 3 dependency in high-grade glioma. F1000 - Post-publication peer review of the biomedical literature
5. Khandwala K, Mubarak F, Minhas K. The many faces of glioblastoma: Pictorial review of atypical imaging features. Neuroradiol J. 2021 Feb;34(1):33-41. doi: 10.1177/1971400920965970. Epub 2020 Oct 20. PMID: 33081585; PMCID: PMC7868590