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CASE REPORT
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Glioma Presenting as an Isolated Facial Nerve Palsy: A Case Report

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Abstract

A peripheral palsy of the facial nerve that results in muscle weakness on one side of the face usually manifests as Bell's palsy. Glioma in the left half of the pons and middle cerebellar peduncle is a rare cause of isolated infranuclear facial paralysis. We report a case of 12- year-old female patient who came to our hospital with isolated unilateral facial palsy but turned out to have a low grade glioma.

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Full Text

Facial nerve palsy in children can be congenital or acquired. The underlying etiology often remains unclear despite extensive workup for investigation. An isolated unilateral lower motor neuron facial weakness of no obvious cause is defined as Bell's palsy. It manifests as unilateral impairment of movement in the facial muscles, drooping of the brow and corner of the mouth, inability to close the eye, disappearance of the nasolabial fold, and drawing of the mouth to the unaffected side. Acute lower motor neuron facial paralysis is a common presentation in childhood. Facial nerve paralysis is classified as central type or peripheral type, depending on the level of nerve injury. Sparing of the forehead muscles is suggestive of a central (upper motor neuron) lesion because of bilateral innervations to this area.[1],[2] The peripheral paralysis is characterized by motor, sensorial and visceral deficits of the hemi-face involved. The lesion produces total facial paralysis on the same side of the lesion. Peripheral lesion produces a more severe type of facial paralysis compared with the central lesion. The clinical course for facial palsy can be divided into sudden, delayed, or gradual. Sudden onset of an acute deterioration of facial nerve function is usually diagnosed within a few days and can result from an infection or trauma.[2],[3],[4] The delayed type is defined by an apparent event occurred days before the onset of facial weakness, though facial function is normal immediately following the event. A facial palsy with a gradual onset, more than three weeks, may suggest a neoplastic etiology.[1],[2] Facial nerve neoplasm is a relatively rare cause of facial nerve palsy, and according to

a previous study, 95% of it was presented with a gradual character of disease course.[3],[4],[5] A comprehensive history evaluation is always important for the correct diagnosis. This case reports highlights the rare presentation of gradual progression of isolated left sided facial nerve palsy without any other neurological deficit in 12-year-old female patient secondary to glioma.

Case Report

A 12 year old female child presented with deviation of angle of mouth towards right side, difficulty in closing of left eye and decrease lacrimation from the left eye since last two years. The complaints were sudden in onset and gradually progressing, when one of the relatives noticed deviation of angle of mouth while talking. There were no weakness, no speech, or vision abnormalities. There was no history of vomiting, headache, seizures, or dizziness. There was no hyperaccusis. Child was conscious and oriented. Her vitals were stable and no signs of raised intracranial pressure. Higher mental functions were intact. Her neurologic examination showed that she had loss of left-sided forehead creases, inability to close her left eye, left facial muscle weakness, rightward deviation of the angle of the mouth on smiling, and loss of the left nasolabial fold suggestive of the left sided lower motor neuron type of facial palsy [Figure 1]. Her corneal reflexes were absent on left side. Other physical and neurological findings were normal. All laboratory tests, including complete blood count, urinalysis, blood urea nitrogen, serum creatinine, electrolytes, and liver function test were in normal range. Magnetic resonance imaging of brain was suggestive of well defined, altered signal intensity area approximate size 3.8x 3.3 × 3.2 cm noted in left half of the pons and middle cerebellar peduncle [Figure 2] appearing hyperintense on T2WI and FLAIR and isointense on T1WI, showing no restricted diffusion and poor enhancement on contrast study suggestive of low grade glioma. The final diagnosis was isolated left facial nerve palsy due to low grade glioma was made and referred to neurosurgery for the excision of the glioma.{Figure 1}{Figure 2}

Discussion

Childhood brain stem glioma is a disease in which benign or malignant cells form in the brain stem tissues. It is either a diffuse intrinsic pontine glioma (DIPG) or a focal glioma. DIPG is fast-growing tumor and spreads all through the brain stem. It is high-grade tumor difficult to treat and has a very poor prognosis. The prognosis of DIPG is good in children diagnosed before three years of age whereas focal glioma is slow growing and is localized to one area of the brain stem. It is easier to treat DIPG and has a better prognosis. The signs and symptoms of brain stem glioma vary in every case. It depends on the size of the tumor, spread in the brain stem, tumor growth and age of the child. Children with DIPG present with ataxia, weakness of a limbs, double vision, and rarely with headaches, vomiting, or facial weakness. Patients with focal gliomas may present with above symptoms. [5],[6],[7]

Peripheral facial nerve palsy with neoplastic origin is uncommon, and is estimated to be the cause in approximately 5% of all cases. In our case, the neurological deficit was that of peripheral facial nerve palsy. Facial palsy progressing slowly over a period of weeks or months, unremitting in its course and not attributable to another etiology, suggests involvement of a neoplasm.[3],[4],[5] Brain stem glioma usually presents with one or more cranial nerve palsies, cerebellar and pyramidal signs, and without any evidence of raised intracranial pressure.[8],[9] The most common initial cranial nerve involvement is the abducens nerve rather than the facial nerve. Gabel BCet al.[10] reported a case of high- grade glioma in 10-year-old boy who presented with a one month history of headache, vomiting, and progressive weakness. On neurological examination, the patient had left hemiparesis, dysconjugate gaze with nystagmus and right-sided sixth nerve palsy. In our case, the main presentation of the child was isolated peripheral type of facial nerve palsy. Treatment is a combined approach, using surgery, radiation therapy, and chemotherapy.

Declaration of patient

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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Figure 1: Shows child with left sided peripheral type of facial palsy

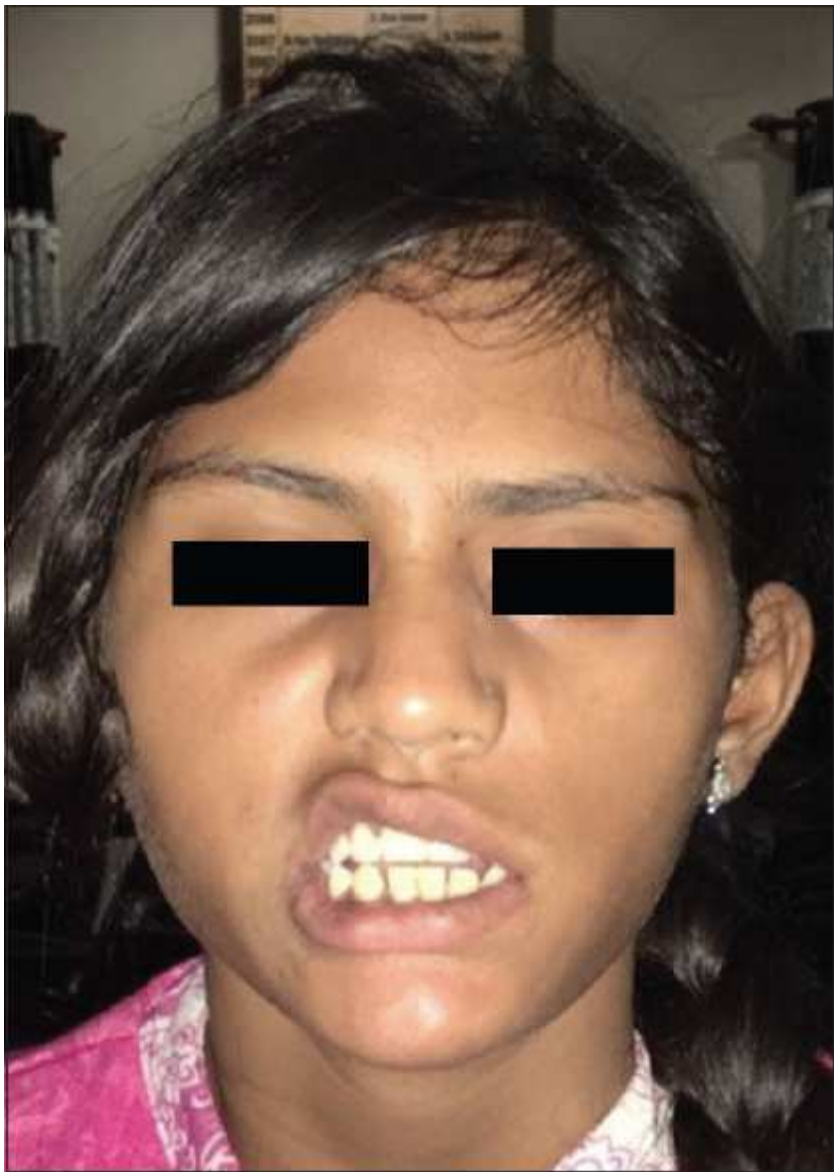

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Figure 2: MRI of brain shows well defined, altered signal intensity area in left half of the pons and middle cerebellar peduncle suggestive glioma