CASE REPORT

Bell's Palsy: A Rare Presentation; Arachnoid Cyst in Posterior Fossa

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ABSTRACT

Facial nerve palsy in children has multiple causes, with idiopathic Bell's palsy being the most frequent and usually self-limiting. Infectious agents such as herpes simplex, EBV, varicella-zoster, CMV, mumps, HIV, and bacterial infections like otitis media, mastoiditis, tuberculosis, and Lyme disease are important considerations. Trauma from birth injury, temporal bone fractures, or surgery can also lead to palsy. Neoplastic causes include acoustic neuroma, leukemia, lymphoma, and parotid tumors. Congenital anomalies and syndromes like Moebius syndrome may present early, while autoimmune or inflammatory conditions such as sarcoidosis and Guillain–Barré syndrome are less common. Though rare, metabolic disorders like diabetes can also contribute. A comprehensive evaluation is essential to rule out secondary causes in children. While most pediatric facial nerve palsies are idiopathic, careful evaluation is crucial to exclude secondary rare causes that may require specific management.

Key Words: *Bells Palsy, Facial Nerve Palsy, Rare, Arachnoid cyst.*

INTRODUCTION

Bell's palsy is a facial paralysis after injury to 7th nerve. It can result from traumatic, compressive, infective, inflammatory or metabolic abnormalities of facial nerve.[1] It is typically unilateral and can be complete or partial. Its incidence is not common in pediatric population as compared to adults. Patients usually present with inability to close their eyes and deviation of mouth with drooling of saliva and loss of frowning, depending upon the site of lesion. Patient may also complain of noise intolerance or loss of taste sensation. The outcome of Bell's palsy is reported to be good, however its depends upon the etiological factors causing it.

CASE REPORT

A 8 years old girl presented with complaint of inability to close the left eye since two years of age and difficulty in hearing and speech for the last 6 months. She was unable to close the left eye since 2 years of age with dryness of the respective eye; there was also deviation of mouth towards right side on opening. She had stammering speech with decreased hearing from left ear. We suspected Bell's palsy and a list of differential diagnosis were narrowed down. Causes of Bell's palsy including infections like HIV, EBV, Hepatitis B, diabetes mellitus, Lyme disease and sarcoidosis were ruled out as there was no history of earache, vesicles on body and ear, jaundice, abdominal distention, blood transfusion, recurrent infection, sore throat, arthritis, recent travel and head trauma.

On examination, she had weight of 28kg and height 120 cm, she was pale with left sided 7th nerve palsy evident as inability to close eye and blow her mouth, flattening of left sided nasolabial fold with deviation of mouth towards right side and loss of

skin folds upon looking upward as shown in figure 1 and 2. She had dysarthric speech with no other cerebellar signs. Rest of systemic examination was normal.

Her lab investigations showed Hb:10.8g/dl, TLC:4.5, Platelets: 191, Urea:90, Creatinine: 0.3, AST:18, ALT:31, CRP: Negative. Her CT brain was planned and it showed diffuse hypodense areas in right frontoparietal region with loss of grey white matter differentiation. Further workup in the form of MRI brain was advised. MRI brain was conducted and showed arachnoid cyst measuring 7.4cm*2.6cm in posterior fossa compressing right cerebellar hemisphere. Fundoscopy was normal with bilateral disc, macula and fundi healthy. Otoscopy was normal. Tympanometry showed severe left sided conductive deafness. She was advised artificial tears and eye patches and referred to neurosurgery department for surgical intervention.

Figure 1: Left sided Facial Nerve Palsy showing loss of wrinkling on forehead

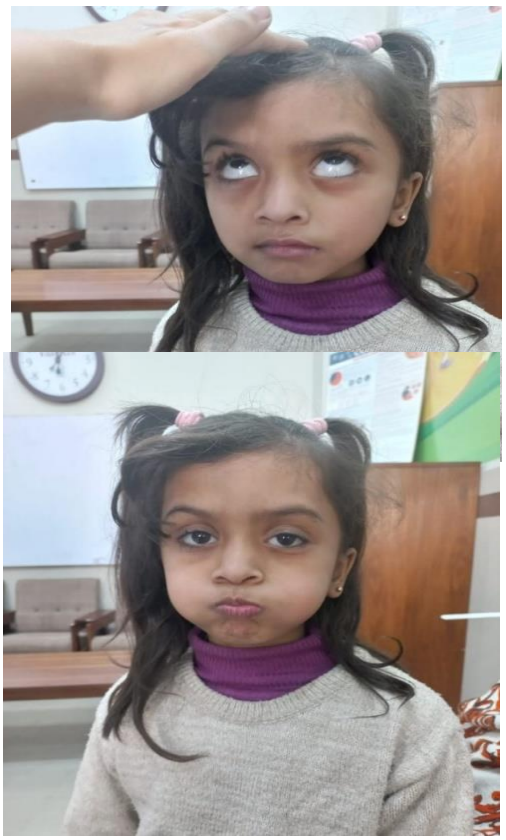


Figure 2: Left sided Facial Nerve Palsy showing inability to close left eye



Figure 3: Left sided Facial Nerve Palsy showing loss of nasolabial fold



DISCUSSION

Bell's palsy is defined as neuropathy of the peripheral 7th cranial nerve (facial nerve). It is usually idiopathic but can result from traumatic, compressive, inflammatory or metabolic abnormalities.

It is generally a unilateral disease with acute onset. However, gradual onset of more than 2 weeks duration is strongly suggestive of mass lesion. Many viruses e.g: HIV, EBV, Hepatitis B are suspected in initiating this illness. Diabetes

mellitus, sarcoidosis and Lyme disease also lead to this condition. In differential diagnosis, congenital anomalies, malignancy, trauma, middle ear infection and surgery should be considered.[2] Acute inflammation and edema of facial nerve result in entrapment of the nerve in bone canal mostly in labyrinthine segment, which leads to compression and symptoms of disease. Atypical signs and symptoms require further evaluation. Cerebellopontine angle (CPA) mass lesions including cystic lesions and tumors, which account for less than 10%, are rare causes of facial nerve palsy among children. The presentation varies from general symptoms of headache, lethargy, and vomiting to localized symptoms of cerebellar dysfunction or cranial nerve paresis.[3,4] Owing to the rarity of its incidence in children, it poses challenges in terms of the diagnosis, treatment strategies, surgical approaches, and prognosis of the patient. Brain imaging is mandatory in diagnosis. Corticosteroids are used to treat the early stages of idiopathic facial paralysis (Bell's palsy) in children, but their effectiveness is uncertain.[5] Moreover the possible reason for the conductive hearing defect in our case reports correlates with the internationally described 2 similar case reports with similar findings of cyst in the arachnoid fossa along with conductive hearing losses.[6] In our case, patient with bell's palsy started to have speech difficulty which on imaging came out to be an arachnoid cyst compressing cerebellum. Therefore, apart from eye care, surgical intervention was also advised.

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Authors' contribution

UK: Purposed Topic, Basic Study design, methodology and manuscript writing. .
SI: Data collection, Statistical analysis and interpretations of results etc.
TR: Literature review & referencing and quality insurer.
RSU: Figures
SZ: Discussion and final review.
All the authors have approved the final manuscript draft and accept the responsibility of research integrity.