Post traumatic unilateral facial nerve palsy: A rare case report

Dr. Manisha Solanki, Dr. Shweta Nehe, Dr. Kishan Kumar, Dr. Harish Vaishnav, Dr. Vinod Mehra and Dr. Astha Bhatt

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Abstract

Early detection, evaluation and intervention are important for optimal functional recovery after facial nerve injury. Thorough clinical history and physical exam, and high-resolution CT can help to make the diagnosis of unilateral or bilateral facial nerve palsy and early detection, evaluation and intervention may be important for optimal functional recovery. We present a case of 36-year-old male slipped from his bike, fell on the right side of face. The initial head CT scan showed fracture of petrous part of temporal bone. Patient was reported to our Institute in Department of Oral and Maxillofacial Surgery. We managed the case with Tab. Prednisolone 20 mg and then tapered it down at the interval of 5 days for a period of 15 days, artificial tear eye drops were prescribed and was advised follow up after a month.

Keywords: Trauma, facial palsy, bell’s palsy, temporal bone fracture

Introduction

Facial nerve palsy is a disorder that affects the movement of the facial muscles on one or both sides of the face. It can be caused by various factors, such as infections, trauma, tumors, autoimmune diseases, or idiopathic (unknown) reasons [1]. The most common cause of facial nerve palsy is Bell’s palsy, which is an idiopathic inflammation of the facial nerve that usually resolves spontaneously within weeks to months [2-3]. Other causes include herpes zoster (shingles), Lyme disease, sarcoidosis, stroke, acoustic neuroma (vestibular schwannoma), or surgery.

The severity of facial nerve palsy can be graded using different scales, such as the House-Brackmann scale or the Sunnybrook scale[5]. These scales assess the degree of paralysis and symmetry of the facial muscles in different regions, such as the forehead, eye, nose, mouth, and cheek. The grades range from I (normal) to VI (total paralysis). We used the guideline given by the team of Baugh et al. for defining facial nerve palsy [1].

Temporal bone fracture resulting from motor vehicle collision is a relatively common cause of unilateral facial nerve injury [3]. The early diagnosis of bilateral/unilateral facial palsy in the traumatic brain injury (TBI) patients can be particularly challenging due to the severe nature of the injury, associated cognitive and affective deficits and other secondary complications. Proper diagnostic testing including high resolution CT scans to visualize facial nerve impingement and electrodiagnostic tests to assess the severity of the nerve damage are of great value in determining the need for surgical intervention.

The management of facial nerve palsy depends on the underlying cause, the severity of the symptoms, and the patient’s preferences. The prognosis of facial nerve palsy varies depending on the cause and the extent of nerve damage. Most cases of Bell’s palsy recover fully or partially within six months, while other causes may have a poorer outcome.

Case report

A 32-year-old male with no relevant past medical history slipped from his bike and fell (trauma) [2] on the right side of the face. He had lacerations present on the parietal region of scalp on right side history of bleeding from the mouth and vomiting. No history of Loss of consciousness. He was taken to nearby hospital by his relatives.
There he was provided with primary treatment and a CT scan for brain was ordered. The initial head CT scan showed unilateral fracture of petrous part of temporal bone and a subdural hemorrhage. He further reported to our institute in department of Oral and Maxillofacial surgery. On thorough clinical examination he mentioned that while eating pool of saliva comes outside through the corner of the mouth and excessive salivation from the corner of the mouth from right side. He was unable to open right eye completely. Also noted was difficulty in smiling and absence of wrinkling of forehead. Facial sensation was normal. The diagnosis of unilateral facial palsy or Lower Motor Neuron Palsy was made based on the history and physical exam. He was prescribed with Prednisolone 20 mg bid for 5 days followed by a 2-week taper and carboxymethylcellulose eye drops TDS, eye protection and exercises for facial muscles were demonstrated.

He was seen for an outpatient follow-up clinic visit 1 month later. At that point, he was noted to have no clinically detectable facial muscle weakness and facial movements were normal and symmetric.

Pretreatment photo

![Fig 1: This image shows deviation of the corner of the mouth on right side](image1)

Post treatment photo

![Fig 2: This image shows correction of deviation of the corner of the mouth on right side](image2)

Discussion

Trauma is responsible for 5% of all cases of facial paralysis [3]. Temporal bone fracture is a well-known cause of facial paralysis. Darrouzet et al. [1] reported two cases of facial diplegia among 115 cases of facial nerve injury caused by temporal bone fractures. Traumatic facial nerve palsy causes a functional and esthetic problem for the patient. In our case, the fracture to the petrous part of the temporal bone resulted in the unilateral facial nerve paralysis. The diagnosis of Bell’s palsy depends on the clinical features and radiological investigations of the head. A radio imaging of the head reveals the fracture of the petrous part of the temporal bone from where the facial nerve passes. The patients CT Scan reports showed the fracture in the petrous part of temporal bone. We prescribed prednisolone 20 mg twice for 5 days followed by a 2-week taper, along with carboxymethylcellulose eye drops, eye protection and facial muscle exercises.

The clinical presentation of facial nerve paralysis due to trauma depends on the severity and location of nerve injury. The patient may have complete or partial paralysis of the facial muscles on one or both sides of the face, affecting the forehead, eye, nose, mouth, and cheek regions. The patient may also have associated symptoms such as hearing loss, tinnitus, vertigo, pain, or numbness [3].

The diagnostic workup of facial nerve paralysis due to trauma includes a detailed case history and radiological investigations like CT scans. The physical examination should assess the degree and distribution of facial weakness using a grading scale such as the House-Brackmann scale or the Sunnybrook scale.

The treatment options for facial nerve paralysis due to trauma include medical and surgical interventions. Medical treatment consists of corticosteroids, eye care, and physiotherapy [6]. The outcome of facial nerve paralysis due to trauma varies depending on several factors such as cause of the injury, severity of the nerve damage and patients general health. Some patients may recover fully or partially within weeks to months, while others may have permanent or recurrent paralysis. Some patients may develop complications such as synkinesis contracture, crocodile tears, or hemifacial spasm.

Conflict of Interest

Not available.

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Conclusion

Trauma to the head region, to the temporal region can cause unilateral or bilateral facial palsy. The condition can be diagnosed clinically and more accurately with the help of radio imaging methods like CT scan. Facial nerve paralysis due to trauma can be managed with oral steroids and eye care lubricants (artificial tears) only if complete paralysis is not present. Eyecare is recommended during nighttime and in contact with the sun. Close follow-up is required during conservative management.

References


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