

Section

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Original

Article

Management of Post Traumatic Facial Nerve Palsy: A Hospital Based Study

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ABSTRACT

Background: Facial nerve loss of motion by injury is normal cause after idiopathic. Facial paralysis accordingly of intra cranial, intra fleeting and additional transient limit harm or break and both. Sudden and prompt facial nerve paralysis require early surgical intervention for better result. Facial nerve decompression and termino- terminal anastomosis surgical intervention had done in present study.

Methods: A prospective study of the 15 cases of traumatic facial nerve palsy attending Department of Otorhinolaryngology, Government Medical College, Shivpuri, MP. The complete clinic examination, otoscopic, audio logical, topo diagnostic, and radiological evaluation were done in all the patients. The outcome of these patients were done on the House-Brackmann nerve grading system.

Results: All patients have infra nuclear type of facial nerve palsy. The maximum incidence of facial nerve paralysis found in the age group between 26 to 35 years. Out of 15 patients, 12 patients were normal hearing. Suprachordal (54%) involvement is the most common site of lesion in traumatic facial nerve paralysis.

Conclusions: Sudden and immediate onset facial nerve paralysis need early surgical intervention for better outcome. Facial nerve decompression were better outcome comparing to termino terminal anastomosis. The facial nerve paralysis prognosis depends upon degree of paralysis, duration of paralysis, site of injury and patients' factors.

Keywords: Trauma, Facial nerve paralysis, Temporal bone fracture, Surgery.

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INTRODUCTION

The facial nerve is a nerve that conveys tactile, engine and also parasympathetic nerve strands. The different reasons for facial nerve paralysis likes idiopathic, injury, irritation, Disease, tumor, Intrinsic irregularities/dysplasia and others are specified. Engine vehicle mishaps are the most well-known system of traumatic facial nerve harm. Fleeting bone crack, Limit, Infiltrating damage, Shot, Rocket harm and latrogenic surgical damage different reasons for facial nerve harm.^[1,2,3] Approximately 5% patient have temporal bone fracture of all trauma.^[1] These fractures are classified as longitudinal, transverse and Oblique (mixed) with respect to the long axis of the petrous pyramid (ridge). Longitudinal fracture is most commonly type of temporal bone fracture. Facial nerve palsy developed common in transverse fracture.

It is important to diagnose early facial nerve palsy and early intervention for better recovery. In most of the cases spontaneous recovery happened. However, some need surgical exploration and nerve repair with or without cables grafting.

METHODS

A prospective study of the 15 cases of traumatic facial nerve palsy attending Department of Otorhinolaryngology, at Government Medical College, Shivpuri, MP. We had enrolled infranuclear type of facial nerve palsy but we did not enroll any patient of central / supranuclear facial nerve palsy.

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RESULTS

All patients have infranuclear type of facial nerve palsy. Patients were treated conservatively as well as surgically. The surgical techniques were applied in the form of facial nerve decompression and termino-terminal anastomosis. Out of 21 patients, 16 were male and 5 were female. 14 (66%) patients had left sided facial nerve palsy and 6 (34%) right sided facial nerve paralysis. The maximum incidence of facial nerve paralysis found in the age group of 25-35 years (mean age 29 years).

Table-1: Clinical and Radiological characteristics.

Parameter	No.
Complete	12
Incomplete	3
Hearing loss	2
Hemotympanum	2
Lacerated wound pinna	1
Temporal Bone Fracture	2
Head Injury(SDH&EDH)	1

Some patients have more than one symptom.

Lacerated wounds generally results in lesions of the facial nerve distal to the stylomastoid foramen (Extra temporal). Birth trauma represent rare but important cause of traumatic facial nerve paralysis in new born.

Table-2: Hearing assessment.

Pure Tone Audiometry	No.
Normal Hearing	12
Conductive hearing loss	2
Mixed hearing loss	1

Facial nerve palsy show normal hearing in 16 patients out of 21 patients. Conductive hearing loss duo to Hemotympanum and a patient did not do pure tone audiometry because his age was less than one month.

Table-3: Topographical site of lesions.

Site	No
Suprachordal	7
Infrachordal	4
Transgeniculate	1

Suprachordal (52%) involvement is the most common site of lesions in traumatic facial nerve paralysis. Topographical test was not done in one patient(neonate).

DISCUSSION

The facial nerve contains motor, sensory and parasympathetic fibers. The facial expression convey us the twinkle of fun, smile of love, composure of confidence, hence the name of the "Nerve of facial expression". All this is lost in facial nerve paralysis. More than 40 causes of facial nerve

paralysis such as Idiopathic, Traumatic, Inflammatory, Tumors and others as mentioned.

The traumatic facial nerve paralysis due to its variety of forms and outcomes, it's difficult to diagnose and represents a challenge especially from the therapy point of view. In present study motor vehicle accidents (60%) is the most common causes followed by blunt trauma and fall from height (18%) each.^[4,5] One case had birth trauma. Temporal bone fractures have divided into three types as longitudinal, transverse and oblique (mixed) in relation to the long axis of the petrous pyramid. Longitudinal fractures are clinically more common and produce delayed and less common facial nerve palsy. Transverse fracture are clinically less common but produce severe, immediate facial nerve palsy.^[3,6] As per literature many surgical option for facial nerve palsy like facial nerve decompression, end to end anastomosis, interposition grafting, facial reanimation and facial reconstruction procedure. There are limitations for primary repair and grafting. It can be repair and decompression by intracranial, intratemporal, extra temporal and in combination. Facial nerve repaired can be immediate or delayed. It can be accomplished without tension by greater auricular or sural nerve. it is best to freshen both end of nerve and make 45° or oblique cut with sharp knife and used minimal number of neurosuture.^[7,8] We have done end to end repair of extra temporal facial nerve transaction and facial nerve decompression of vertical segment.

Electrophysiological test is an important diagnostic tool to estimate the amount of severe facial nerve degeneration which was not available at our center, so we used clinical topographic diagnostic test. Electroneuronography (ENoG) is a mandatory because it is an important prognosis factor which is positive only after 4 days of facial nerve injury. It can estimate the amount of severe facial nerve fiber degeneration, if degeneration of greater than 90% of the individuals within 14 days of complete facial nerve paralysis indicates poor prognostic factors are likely to recover normal facial function. Electromyography (EMG) performed by using intramuscular recording electrodes probably most useful more than 2 weeks of facial nerve paralysis. This test measures motor activity of facial muscles that indicate wallerian degeneration or polyphasic potentials is a sign of regenerating nerve fibers.^[9]

Surgical intervention for post traumatic facial nerve paralysis remains controversial and most of the patients recover fully without surgical intervention. Out of 17 patients, a patient underwent facial nerve decompression and one patient for end to end anastomosis. Both patients have sudden immediate onset facial nerve paralysis. The complete facial nerve recovery was seen of facial nerve decompression and incomplete was in end to end anastomosis. Remaining fifteen patients managed conservatively on steroids, symptomatic treatment and eye care. Out of 21 patients ,16 patients (76%) was done complete recovery and rest 4 patients (19%) had incomplete recovery. These patients are managed by adjunctive measures like tarsoraphy and gold weight.

The facial nerve paralysis prognosis depends upon degree of paralysis, duration of paralysis, site of injury, and patients' factors. The final goal of the facial nerve paralysis managed as defect reconstruction, facial re animation by hypoglossal to facial, nerve grafting, muscles trans position and adjunctive measures.

CONCLUSION

Our study revealed that Sudden and immediate onset facial nerve paralysis need early surgical intervention and Facial nerve decompression gives better outcome comparing to termino–terminal anastomosis.

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