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## Original Research Article

## Ophthalmic manifestations of facial nerve palsy

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## ABSTRACT

**Aim:** The aim of this study was to identify the ophthalmologic clinical features manifestations of facial nerve palsy patients.**Materials and Methods:** In this observational study we have analyzed 50 eyes from 50 facial nerve palsy patients who were referred to our ophthalmic clinic.**Result:** Ophthalmic drops, ointment were prescribed according to symptoms, taping was conducted in all eyes.

60% of the Bell's palsy patients treated with prednisolone alone acyclovir-prednisolone (depending on the pathology) recovered within 5 months. An invasive procedure like temporary tarsorrhaphy was carried out in 5 patients permanent tarsorrhaphy in 3 patients.

**Conclusion:** 2 patients underwent temporal bone decompression surgery. 3 patients developed corneal opacity with severe visual impairment despite surgical intervention, ophthalmic ointment, taping. Signs had improved in 75% of patients (lagophthalmos), 90% (corneal epithelium defect), 60% (epiphora). The ophthalmic clinical features of facial nerve palsy were mainly corneal lesion and eyelid malposition, and their clinical course improved after invasive procedures. The prognosis and ophthalmic signs were worse than in cases of simple facial palsy. Understanding these differences will help the ophthalmologist take care of patients with facial nerve palsy.This is an Open Access (OA) journal, and articles are distributed under the terms of the [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/), which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.For reprints contact: [reprint@ipinnovative.com](mailto:reprint@ipinnovative.com)

## 1. Introduction

Facial nerve palsy (FNP) can have a wide range of causes. The facial nerve (the seventh cranial nerve) controls the muscles of look, its harm causes brokenness of look or the squint response.<sup>1</sup> Facial nerve palsy (FNP) can be partitioned into focal palsy fringe palsy. Focal facial palsy is initiated by a mind problem, while fringe facial palsy is prompted by a turmoil of the facial nerve pathway radiating from the brain.<sup>2</sup> On account of focal facial palsy, primary drivers incorporate stroke, mind cancer and injury. Focal facial palsy can be joined by palsy of another cranial nerve.

FNP are diagnosed by its clinical presentation like facial weakness, loss of taste, decreased tear and salivary secretion,<sup>3</sup> otoscopic examination of the external auditory canal, tympanic membrane, pure tone audiometry, stapedial reflex needed. Topo diagnostic tests are done to find the site of the lesion.

Facial nerve has a tortuous course within temporal bone. It has a long course through a bony canal known as fallopian canal. So it is prone to injury than other nerves in the body. Intra temporal lesions are more common cause of facial paralysis.

Facial nerve paralysis are diagnosed by its clinical presentation like facial weakness, loss of taste, decreased tear and salivary secretion.

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The purpose of the study is to understand the ophthalmic clinical features, outcomes of facial nerve palsy patients who were referred to our outpatient department of ophthalmology for various conditions.

**2. Materials and Methods**

An observational study from August 2021 to January 2022. We have analyzed 50 eyes from 50 facial nerve palsy patients who were referred to our ophthalmic clinic. Diagnosis, determination of treatment methods, operation, follow-up monitoring were conducted by the same oculoplastic surgeon for each patient. A photo was taken during every visit to objectively record and evaluate signs.

Written and informed consent of patients interested in taking part in this study was obtained. Diagnosis, determination of treatment methods, follow-up monitoring were conducted by the same team of surgeons for each patient. Accurate clinical history, followed by a comprehensive examination (general, neurologic, ophthalmologic examinations) were carried out.

**2.1. Inclusion criteria**

Patients of ages (15-65 years) of either sex presented with diagnosed facial nerve palsy.

**2.2. Exclusion criteria**

1. Patients with palsy involving other cranial nerves were excluded.
2. Patients with other ocular diseases, ocular surgeries.
3. Patient refusing consent.



**Fig. 1:** A 17-year-old female presented with Bell's palsy



**Fig. 2:** A 57 years old male with right facial nerve palsy following CVA

**3. Result**

**Table 1:** Causes

Causes	Number %
Bell's palsy	26(52)
Trauma	13(26)
CVA	11(22)
Total	50(100)

The 50 patients studied ranged in age from 15-65 years. The ratio of male to female was 31 : 19. Bell's Palsy (52%), trauma (26%), CVA (22%).(Table 1)

**Table 2:** Clinical signs and symptoms

Symptoms and signs	No. of patients (%)
Lagophthalmos	30(60)
Swelling	6(12)
Corneal epithelial defect	32(64)
Corneal opacity	3(06)
Conjunctival injection	19(38)
Chemosis	03(06)
Epiphora	07(14)
Dry eye	15(30)

Lagophthalmos (60%), Swelling (12%), Corneal epithelial defect (64%), Corneal opacity (06%), Conjunctival injection (38%), Chemosis (06%), Epiphora (14%) & Dry eye(30%). (Table 2)

Ophthalmic drops, and ointment was prescribed according to symptoms, taping was conducted in all eyes. 60% of the Bell's palsy patients treated with prednisolone alone acyclovir-prednisolone (depending on the pathology) recovered within 05 months. An invasive procedure like temporary tarsorrhaphy was carried out in 05 patients permanent tarsorrhaphy in 03 patients.

#### 4. Discussion

Facial nerve palsy is incomplete (paresis) and additionally all out (loss of motion) loss of facial nerve (cranial nerve VII) function.<sup>4,5</sup> The most well-known cause is idiopathic fringe facial nerve palsy, otherwise called Bell palsy. Clinical highlights incorporate diminished or missing development of the facial muscles, hyperacusis, modifications in taste dry eyes mouth.<sup>6</sup>

Facial nerve palsy is a clinical determination made subsequent to getting an exhaustive history actual assessment, which incorporates surveying for engine signs in focal and fringe facial palsy to separate between focal upper engine neuron sores fringe lower engine neuron injuries.<sup>7</sup> Assuming that optional causes are distinguished, the hidden reason is dealt with. Intricacies incorporate inadequate recuperation of facial nerve capability, facial synkinesis, visual difficulties connected with inadequate eye conclusion.<sup>8</sup>

Decompression medical procedure gives improved result whenever done in the span of 14 days of injury. In my review patients with horrible facial paralysis who were taken for decompression even following 14 days additionally had grade 1 recovery.<sup>9,10</sup> In this concentrate out of 30% of patients who went through a medical procedure, just 12.5% of patients were taken for a medical procedure in the span of 14 days of injury.<sup>11</sup>

Contemplated commonest reason for facial paralysis in the wake of barring Bell's paralysis is injury. Articles in Archives of Hellenic medication considered commonest reason for facial paralysis is injury trailed by otitis media.<sup>12</sup> In this concentrate likewise normal reason is trauma. 55% of patients created facial loss of motion following injury.

#### 5. Conclusion

2 patients underwent temporal bone decompression surgery. 3 patients developed corneal opacity with severe visual impairment despite surgical intervention, ophthalmic ointment taping. Signs had improved in 75% of patients (lagophthalmos), 90% (corneal epithelium defect), 60% (epiphora). The ophthalmic clinical features of facial nerve palsy were mainly corneal lesion and eyelid malposition, and their clinical course improved after invasive procedures.

The prognosis and ophthalmic signs were worse than in cases of simple facial palsy. Understanding these differences will help the ophthalmologist take care of patients with facial nerve palsy. The ophthalmologist plays a pivotal role in the evaluation and rehabilitation of patients with facial nerve palsy.

#### 6. Source of Funding

None.


#### 7. Conflict of Interest


None.

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