

## FACIAL NERVE PALSY: THE NEED FOR AN OPHTHALMOLOGIST IN ITS MANAGEMENT

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### ABSTRACT

**Aim:** to review our experience with facial nerve palsy and to highlight the need for an ophthalmologist in its management.

**Methods:** This was a hospital-based retrospective study carried out in the Ophthalmology Department of the University of Benin Teaching Hospital. The case files of patients with facial nerve palsy, seen from August 2015 to October 2019, were retrieved. Sociodemographic data and clinical information were obtained from their case files.

**Results:** A total of 14 patients were included in this study. There were 9 males with a male:female ratio of 1.8: 1. The mean age was 41.1years (SD 20.6); age range 3years to 68years. Eight (57.1%) cases were referred from other medical specialist. The most frequent ocular complaints were inability to close the eyes in 6 (42.8%) patients, blurry vision 5(35.7%) and tearing 4 (28.6%). All (100.0%) of the patients had lagophthalmos on clinical examination. Signs of corneal structural changes were seen in 5 (35.7%) patients. Trauma 4 (28.57%), stroke 2 (14.3%) and Bells palsy 2 (14.3%) were the most frequent of the known etiologies.

**Conclusion:** There is a low referral rate of cases of facial nerve palsy from medical specialist to the ophthalmologist in our study, and patients are mostly referred when they have ocular symptoms. There is a need for the ophthalmologist, in a multidisciplinary team approach, to prevent visual impairment and improve the patient's quality of life. Physicians should be sensitized on the need to refer patients with facial nerve palsy for ophthalmic evaluation and management.

Keywords: facial nerve, palsy, ophthalmologist, Nigeria

### INTRODUCTION

The causes of facial nerve palsy are variable and include idiopathic Bell's palsy, trauma (non-surgical and surgical), infection (such as herpes zoster, otitis media, leprosy, HIV,

tuberculosis, meningitis), stroke and neoplasm.<sup>1-3</sup> Thus the patient may present to a variety of medical specialist. The facial nerve (seventh cranial nerve) innervates the muscles of facial expression, including the orbicularis oculi muscle which is responsible for eyelid closure; it also gives parasympathetic supply to the lacrimal gland for secretion and is involved in the blink reflex.<sup>1</sup> As such, ophthalmic manifestations of

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facial nerve palsy will include lagophthalmos (inability to close the eyelids), paralytic ectropion of the lower lid, tearing, dry eyes, blurry vision, foreign body sensation and eye pain.<sup>4</sup>Lagophthalmos leads to exposure of the cornea which may be complicated with corneal epithelial erosion, ulceration, perforation or opacification and consequent visual impairment if not adequately managed. Early recognition and appropriate management of the ophthalmic complications of facial nerve palsy is imperative in order to prevent visual impairment and improve the patient's quality of life. The aim of this study was to review our experience with facial nerve palsy and to highlight the need for the ophthalmologist in its management.

#### MATERIALS AND METHODS

This was a hospital-based retrospective study carried out in the Ophthalmology Department of University of Benin Teaching Hospital, Benin City. The University of Benin Teaching Hospital is a tertiary institution which provides ophthalmic and other specialist medical services to Edo and its neighboring states. Approval for this study was obtained from the Ethics and Research Committee of the University of Benin Teaching Hospital. The clinic register was searched for patients with facial nerve palsy seen from August 2015 to October 2019. Their case files were retrieved from the Medical Record Unit. All patients with facial nerve palsy were included in the study. Information regarding their age, gender, source of referral, ophthalmic features and other clinical presentations, cause of facial nerve palsy and management was obtained from their case files.

Data collected was analyzed with Microsoft Office Excel (Microsoft Corporation, 2010,

Louisville KY) software. Descriptive analyses such as frequencies, means, and standard deviations were utilized.

#### RESULTS

A total of 14 patients were included in this study. There were 9 males and 5 females (male: female 1.8: 1) the mean age was 41.1 years (SD 20.6); age range 3 years to 68 years. Eight (57.1%) cases were referred from other medical specialist (Figure 1). The most frequent ocular complaints were inability to close the eyes in 6 (42.8%) patients, blurry vision 5 (35.7%) and tearing 4 (28.6%) (Table 1). All (100.0%) of the patients had lagophthalmos on clinical examination. Signs of corneal structural changes were seen in five (35.7%) patients (Table 1). Of the known etiologies of facial nerve palsy, trauma 4 (28.6%), stroke 2 (14.3%) and Bell's palsy 2 (14.3%) were the most frequent (Figure 2). Table 2 shows the visual acuity in the affected eyes.

#### DISCUSSION

In this study, there was a predominance of male gender and right-sided facial nerve palsy. There are variable reports in the literature on the prevalent gender and side of facial palsy.<sup>5-11</sup>The most prevalent cause of facial nerve palsy in our study was trauma. However, Bell's palsy is reported as the most common cause of facial nerve palsy in many studies.<sup>3,5,7-9</sup>

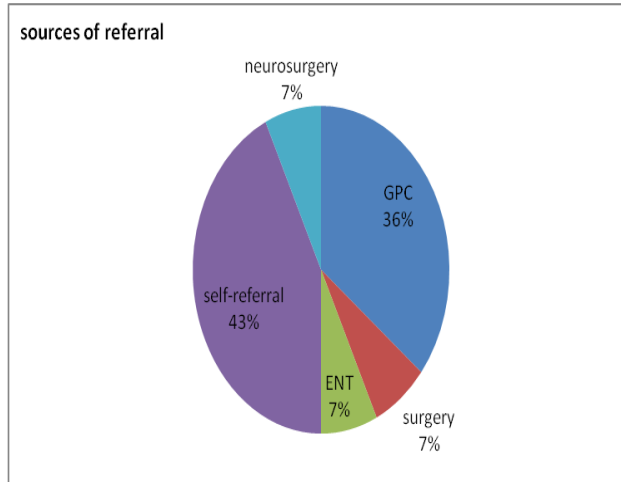


Figure 1: Sources of referral of facial nerve palsy to the eye clinic

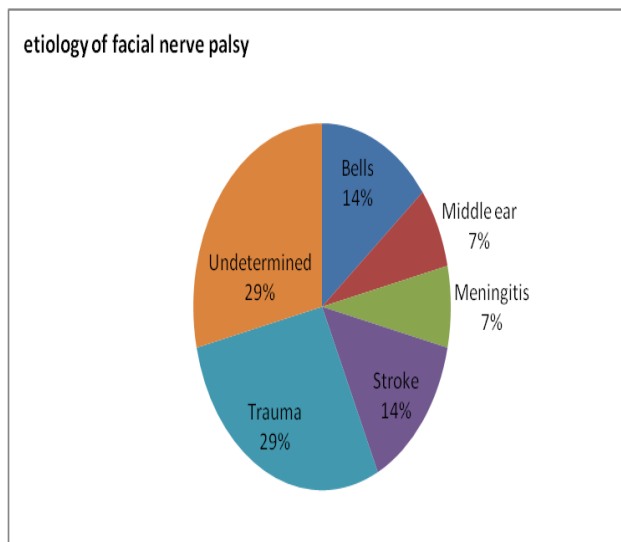


Figure 2: Etiology of facial nerve palsy

Table 1: Clinical findings in the patients

Variable	Frequency (n=14)	Percentage
<b>Complaint*</b>		
Inability to close the eyelid	6	42.8
Blurry vision	5	35.7
Tearing	4	28.6
Foreign body sensation	1	7.1
Pain	1	7.1
Red eye	1	7.1
Eye discharge	2	14.3
<b>Duration of symptoms (months)</b>		
<1	2	14.3
1-6	6	42.8
7-12	4	28.6
>12	2	14.3
<b>Examination findings*</b>		
Lagophthalmos	14	100.0
Conj injection	2	14.3
Punctate epithelial erosion	2	14.3
Inferior corneal opacity	3	21.4
Clear cornea	7	50.0
Reduced corneal sensation	1	7.1
Poor Bell's phenomenon	1	7.1
Cranial nerve VI and VIII palsy	1	7.1

\*Multiple responses

Table 2: Visual acuity in affected eyes

VA	Frequency (n=14)	Percentage
6\18 or better	9	64.3
<6\18-6\60	3	21.4
<6/60-3/60	0	0.0
<3/60-LP	2	14.3
NLP	0	0.0

The small number of total cases seen in this study and the significant number of self-referrals reflects a low referral rate of facial nerve palsy from other physicians to the ophthalmologist. Similarly, in a three-year review of cranial nerve palsies in the Eye Clinic of the University of Port-Harcourt Teaching Hospital, Nigeria, only 7 cases of facial nerve palsy were seen; it was observed that all the cases were walk-in patients (none was referred).<sup>12</sup> Just one patient was referred to us for ophthalmic evaluation upon diagnosis of facial nerve palsy while the other patients were already symptomatic before referral. All our patients had lagophthalmos, with signs of exposure keratopathy seen in two patients who had punctate epithelial erosion and in three patients with inferior corneal opacity. Lagophthalmos leads to exposure of the cornea which may be complicated with corneal epithelial erosion, ulceration, perforation or opacification and consequent visual impairment if not adequately managed.

Facial nerve palsy has significant functional, psychological and social consequences<sup>13</sup> such that becoming visually impaired will further worsen the patient’s quality of life. Visual impairment is known to reduce the function,

wellbeing and independence of the individual and there is also the cost associated with productivity losses and informal care givers as well as premature deaths.<sup>14,15</sup> Therefore, patients with facial nerve palsy should be referred to the ophthalmologist for evaluation as soon as the diagnosis is made in order to prevent the complications of exposure of the globe and to manage other ophthalmic complications thus avoiding visual impairment and blindness, and improving the patient’s quality of life.

At the ophthalmologist office, a thorough history and examination will help determine the etiology.<sup>1-3</sup> Ophthalmic evaluation will include the assessment for lagophthalmos, ectropion, eyelid blink rate and the strength of the orbicularis oculi, bell’s phenomenon, and tear break-up time. The cornea will be examined for punctate epithelial erosions and corneal ulcers. Corneal sensitivity and ocular motility as well as other cranial nerve function are tested. Ophthalmic management is tailored to the needs of the patient: artificial tears to supplement the patients tear film; taping of the lids, tarsorrhaphy or gold weight implantation in patients with lagophthalmos in order to protect the cornea, treatment of corneal erosion or ulcer; management of epiphora and surgical correction of ectropion if present.<sup>1,2,4</sup>

This study has some limitations in that it is a single hospital based study centred on the population seen at the eye clinic, which may not be a true representation of the facial nerve palsy seen in the whole hospital or in the community.

In conclusion, this study shows a low referral rate of facial nerve palsy to the ophthalmologist in our hospital, and the

patients are mostly referred when they have ocular symptoms. The role of the ophthalmologist is crucial in preventing visual loss and improving the patient's quality of life. A multidisciplinary team approach is needed in the management of facial nerve palsy. Physicians should be sensitized on the need to refer patients with facial nerve palsy for ophthalmic evaluation.

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