



Aetiological Profile of Facial Nerve Palsy Seen in Nigerian Tertiary Hospital

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Abstract

Background/Aim: Facial nerve palsy may cause facial asymmetry, functional and cosmetic impairment, and therefore imposes great psychological and social problems on the individual with the condition. The aim of this paper was to highlight the aetiological profile of facial nerve palsy (FNP) in two tertiary institutions in Ekiti, southwest, Nigeria. **Methods:** This was a retrospective review of patients with facial nerve palsy seen and treated at Ear, Nose & Throat (ENT) clinic. All folders and registers of patients diagnosed with facial nerve palsy from January 2010 to December 2019 in the central, ENT and Dental medical records departments were retrieved and reviewed. The information extracted included the socio-demographic characteristics of the patients, clinical presentation, type and aetiology of FNP, side affected, diagnosis/impression, nature of impairment, type of lesion, onset of the disease, treatment and outcome. **Results:** Of 76 patients analysed, 48(63.2%) were males and 28(36.8%) were females given a male to female ratio of 1:1.7. Their age ranged between 5 to 72 years with a mean of 39.83 ± 17.58 SD. The age range 21-40 years was most commonly affected, representing 31 (40.8%). The commonest cause of facial nerve paralysis was Bell's palsy in 32(42.1%), followed by trauma 28(36.9%). Of the 28 (36.9%) that was caused by trauma, road traffic injury constituted 15(53.6%). Half (50.0 %) of the lesion affected right side of the face. Seventy (92.1%) was treated medically. Majority (37.0%) presented within one week of their symptoms. All the patients presented with deviation of mouth, followed by inability to close eye in 70 (92.1%). Higher proportion (88.2%) of our patients had lower motor neuron lesion. **Conclusion:** This study found that majority of our patients was young adults. Bell's palsy was a major cause of facial nerve paralysis followed by trauma. Most of our patient presented early and did well on conservative treatment. High index of suspicion is essential especially when patients present with injuries involving head and neck region.

Keywords: Aetiology, Profile, facial nerve palsy, tertiary hospital

Introduction

Facial nerve palsy (FNP) is a neurological condition that results from a lesion of the 7th cranial nerve leading to an acute onset of weakness or total paralysis of one or both sides of the face [1]. It is a common clinical condition that usually presents to the Otolaryngologist and Maxillofacial Surgeon. The facial nerve runs a long course from the intracranial origin to its areas of supply. It can therefore become compromised at any point along its course by various adverse conditions with resultant deficit in its functions [2]. The incidence of facial nerve paralysis is about 20-30 cases per 100,000 people [3]. Facial nerve palsy is common in the age range

of 20 - 50 years. It was said to have equal sex distribution [4]. Facial nerve palsy may induce facial asymmetry, functional and cosmetic impairment, and therefore can severely affect a patient's quality of life and imposes great psychological and social problems on the individual with the condition [5-9]. The causes of facial nerve palsy are variable and includes idiopathic Bell's palsy, trauma (non-surgical and surgical), infections (such as herpes zoster, otitis media, leprosy, HIV, tuberculosis, meningitis), stroke and neoplasm [10-15]. It is often unilateral but can be bilateral, usually in about 40-75% cases it was unilateral palsy [16]. The aim of this paper was to highlight the aetiological profile of FNP in two tertiary institutions in Ekiti, southwest, Nigeria.

Methodology

Study Design:

This study was a retrospective review of patients seen and treated in ENT and Dental Clinics of two tertiary Hospitals in Ekiti state.

Study Setting:

This study was conducted at Federal Teaching Hospital Ido Ekiti and Ekiti state University Teaching Hospital, Ado Ekiti. Both tertiary institutions are located within Ekiti State, south west, Nigeria. Though they both render primary and secondary health care service, they also served as a referral center for people of Ekiti state including their neighbouring states of Ondo, Kogi, Osun and Kwara.

Study Protocol:

All folders and registers of patients diagnosed with facial nerve palsy over 10 years (from January 2010 to December 2019) in the central, ENT and Dental medical records departments were retrieved and reviewed. All cases of facial nerve palsy (FNP) within this period were diagnosed and managed by resident doctors and consultants in ENT and Dental departments. Our patients also had physiotherapy treatment.

Data Collection Procedure:

Ethical Review Committee of our institution gave approval for the study. Official permission was obtained from the head of department of medical record and information unit to enable the researchers have access to registers and folders of patients with FNP that were seen and managed at the hospital over ten years (between January, 2010 and December 2019) period. We used research proforma to extract from the registers and folders information on socio-demographic characteristics of the patients, clinical presentation, type and aetiology of FNP, side affected, diagnosis/impression, type of lesion, duration of onset of the problem, treatment and outcome. Their radiological investigations (plain x- rays of the skull, paranasal sinuses and mastoid including Computerized Tomograph (CT) scan and MRI findings were also documented. Only few of our patients had CT scan and MRI done as the facility are not readily available in our center. House-Brackmann scale (HBS) in assessing the degree of facial nerve injury was also documented. All patients with incomplete data and those with FNP from cerebro vascular diseases were excluded from the study.

Data Analysis:

Descriptive statistics of mean, standard deviation, percentages, frequency tables and charts were used to summarize the data. This data summary was performed utilizing Statistical Package for Social Sciences (SPSS), (Windows Version 19.0, Chicago, IL, U.S.A.).

Results

Of 76 patients analysed, 48(63.2%) were males and 28(36.8%) were females giving a male to female ratio of 1:1.7. Their ages ranged from 5 to 72 years with a mean of 39.83 ± 17.58 SD. The age range 21-40 years was most commonly affected representing 31 (40.8%) More than half (56.6%) were married. Majority (44.7 %) had tertiary education. Large percentages (39.5%) are civil servants. **Table 1.**

Table 1: Showing demographic characteristics of patients

Variable	Frequency	Percentage
Age Range (Years)		
0-20	10	13.2
21-40	31	40.8
41-60	23	30.3
61-80	12	15.8
Gender		
Male	48	63.2
Female	28	36.8
Marital Status		
Single	31	40.8
Married	43	50.6
Widow	2	2.6
Educational Level		
Nil	4	5.3
Primary	10	13.2
Secondary	28	36.8
Tertiary	34	44.7
Occupational status		
Unemployed	19	25.0
Farming	5	6.6
Business	19	9.2
Civil servant	30	39.5
Artisan	3	3.9
Type of Lesion		
Lower Motor Neuron		
Upper Motor Neuron	67	88.2
	9	11.8
Outcome of treatment		
Full recovery	49	64.5
Partial recovery	15	19.7
No recovery	5	9.2
Loss to follow up	5	6.6

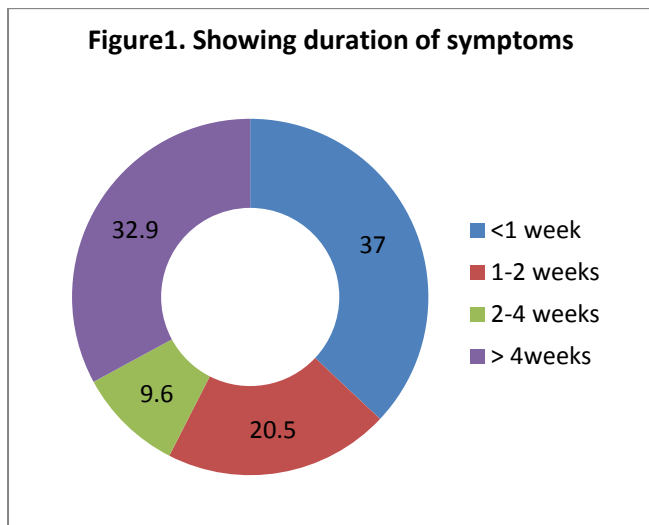
The commonest cause of facial nerve palsy is Bell’s palsy in 32(42.1%), followed by trauma 28(36.9%), Herpes zoster 9(11.8%), Otitis media 4(5.4%), Otitis externa malignant 2(2.6%) and Tumour 1(1.3%). Of the 28 (36.9%) that were caused by trauma, road traffic injury constituted 15(53.6%), assault 6(21.4%), gunshot 4 (14.3%), fall from height 2(7.1%) while iatrogenic due to surgical procedure was recorded in only one (3.6%) patient.

Table 2.

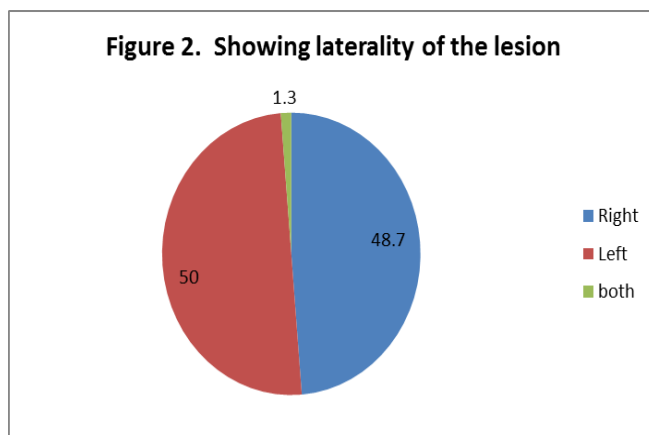
Table 2: Showing aetiology / causes of facial nerve

Causes	Frequency	Percentage
Bell’s palsy	32	42.1
Otitis media	4	5.3
Herpes Zoster	9	11.8
Trauma	28	36.9
Assault 6		
Gunshot 4		
Fall from height 2		
Road Traffic Injury 15		
Iatrogenic 1		
Otitis External	2	2.6
Tumor	1	1.3
Total	76	100.0

Majority (37.0%) presented within one week of their symptoms, followed by 32.9% of patients that came after 4 weeks of their symptoms. **Figure 1.**



Based on House-Brackmann scale of classifying facial nerve injury clinically ¹⁷, 55(72.4%) of our patients had grade II (mild dysfunction), 13(17.1%) had grade III (moderate dysfunction), while 8(10.5%) had grade V (severe dysfunction). Half (50.0 %) of the lesion affected Right side of the face. **Figure 2.**



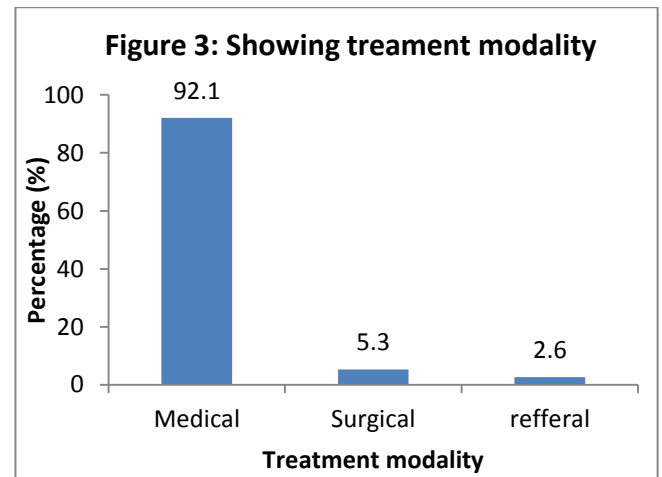
Almost all the patients presented with deviation of mouth, followed by inability of closing their eyes in 70 (92.1%). **Table 3.**

Table 3: Showing clinical presentation /features

Clinical Presentation/ Features	Frequency (N)	Percentage (%)
Deviated mouth	74	97.4
Inability to close eye	70	92.1
Otalgia	66	86.8
Otorrhoea	13	17.1
Tinnitus	20	26.3
Rashes at the ear	9	11.8
Speech problem	14	18.4
Tearing	45	59.2
Foreign body sensation	40	52.6

NB : Some patients have more than on clinical features

Higher proportion (88.2%) of our patients had lower motor neuron lesion. Seventy (92.1%) was treated medically, 4(5.3%) had surgical intervention while 2(2.6%) were referred to other centre. **Figure 3.**



Discussion

Facial paralysis is one of the common problems leading to facial deformity. Our study had shown that facial palsy cut across all age groups; however the age group of 21 - 40 years was mostly affected in this study which constitutes young adults. Other studies also recorded similar trends ^[7,18-22]. Male preponderance was also recorded in our study. This was similar to other studies ^[7,18,20-23]. The young adults and male preponderance in our study might have been due to their higher vulnerability to environmental hazards especially in the course of daily activities which sometimes are more strenuous in males than their female’s counterparts. Major cause of FNP in our study was Bell’s palsy which was a lower motor neuron palsy of acute onset and idiopathic in origin. Bell’s palsy was recorded as being the commonest cause of facial palsy by other researchers ^[7,18-21]. It represents about 42.1% in our report. It was thought to account for approximately 60 -75% cases of acute unilateral facial paralysis generally ^[24]. Trauma was second commonest cause of facial nerve palsy in this study (36.9%), and majority are due to road traffic injuries. Afolabi et al made similar observation in their study where trauma was the predominant cause of FNP in the younger age group ^[18]. Simple radiological investigations were done to exclude other causes of facial palsy. Majority of our patients presents within one week of the onset of their symptoms. This might be attributed to the cause of FNP. Traumatic cases may be picked along with other pathology in the body as they present in the hospital. Also for the infective causes the associated otalgia and occasionally tinnitus made their presentation very early as those symptoms may be unbearable to them. Also, this study showed that our patients were predominantly civil servants and larger percentages were educated hence they tend to seek medical attention early. Early presentation, diagnosis and treatment usually improve prognosis. Unilateral involvement was more common than bilateral in our record, this is in tandem with others studies ^[7,19,20]. Right side was mostly affected in about half of our studied patients. Only 1.3% had bilateral involvement. It is important to note that bilateral facial nerve palsy is a rare condition. However, Ogunmade et al ^[25] and Owolabi et al ^[26] reported bilateral FNP in a homozygous haemoglobin S and in a Nigerian patient with Bell’s palsy respectively. In our study, lower motor neuron lesion was found to be more common than the upper motor neuron lesion. This agrees with report from other studies ^[7,22,27]. Management of FNP is multidisciplinary as aetiology may be diverse. Majority of our patients were managed medically with analgesics, anti-inflammatory, antiviral, and antibiotics apart from being treated for any/ associated underlying problem. Large percentage of our patient had supportive treatment from

physiotherapy department. About 64.5% of our patients had full recovery. Few had poor recovery and some were lost despite long time follow up. Large percentage of our patients presented with mild facial dysfunction (grade II) based on House-Brackmann scale (HBS) and early presentation in the hospital after the onset of their problem along with early intervention might have been responsible for full recovery in majority of them.

Limitation of this study includes inability to conduct electrophysiological test for our patients that may need it as it is not readily available. Few cases were lost for a long time to follow up due to the nature of our socio-cultural belief which makes patient sometimes defaulted once there is slight improvement in their health condition.

Conclusion

This study found that majority of our patients were young adults, Bell's palsy was a major cause of facial nerve paralysis followed by trauma. Most of our patient presented early and did well on conservative treatment. High index of suspicion is essential especially when patients presents with injuries involving head and neck region.

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Competing interests

All the authors declare no competing interests.

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