



Management of Peripheral Facial Paralysis in the Neurology Department of Ignace Deen National Hospital

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Abstract

Introduction: Peripheral facial paralysis (PFP) is a deficit in facial nerve function. The objective of this study was to evaluate the management of PFP in the neurology department of Ignace Deen National Hospital. **Patients and Methods:** This was a descriptive and analytical prospective study, lasting six (06) months from April 1st to September 30th, 2021, carried out in the neurology department of Ignace Deen National Hospital. Patients with paralysis of one or both hemifaces were included. Sociodemographic, clinical, paraclinical and therapeutic data were collected and analyzed. **Results:** We collected 65 cases of PFP, including 35 men (54%) with a sex ratio (M/F) of 1.1. The average age of our patients was 34.3 ± 14.7 years. The acute installation was the majority (94%). Fifty-six point nine percent of the patients consulted after the first 3 days following the appearance of the signs. House & Brackmann stage IV accounted for 61.5% of cases. The idiopathic origin was the most incriminated with 67.6%. Physiotherapy, corticosteroids and antivirals were the most represented therapeutic means, respectively 93.9% 86.2% and 80%. The evolution was favorable in 95.4% of the patients. **Conclusion:** Peripheral facial paralysis is a relatively common pathology. The idiopathic origin was the most frequent. The evolution was mostly favorable in young patients.

Subject Areas

Clinical Medicine

Keywords

Peripheral Facial Paralysis, Neurology Department, Ignace Deen National

Hospital

1. Introduction

Peripheral facial paralysis is the expression of damage to the facial nerve, at any level whatsoever, from its protuberant origin to its neuromuscular endings. The face is the part of the human body that conveys most of an individual's emotions and personality. The change, even minimal, in the aesthetics and expression of the face causes significant concern for the patient who does not hesitate to consult [1].

The overall incidence of PFP is estimated at 32 cases per 100,000 population per year [2]. Diagnosis is essentially clinical and the treatment remains etiological and symptomatic based on physiotherapy and psychological support [3].

In Africa, in Cameroon, Donkeng *et al.* report a frequency of 37.8%. In Guinea, few data are available [4].

Thus, the objective of our study was to evaluate the management and evolutionary profile of patients with PFP in the neurology department.

2. Patients and Methods

This was a prospective descriptive and analytical study lasting six months.

We included all patients with facial asymmetry reaching both levels of one or both sides. Patients with central facial paralysis, facial asymmetry secondary to trauma and congenital malformation of the face were excluded.

We conducted an analysis of socio-demographic variables (age, sex, marital status and origin), clinical (reasons for consultation, mode of onset and time to consultation), paraclinical (blood test including blood count and blood formula; glycaemia; infection test, namely HBs Ag, HIV serology, TPHA/VDRL; electroneuromyogram, computed tomography and cerebral magnetic resonance imaging), etiological (idiopathic, secondary to a pathology: stroke, HIV, syphilis, hepatitis B, diabetes), therapeutic (corticosteroids, antivirals, antibiotics, ophthalmic eye drops, physiotherapy, psychological support and any other molecule used in the treatment) and evolutionary (favorable, stationary, unfavorable according to House & Brackmann grading).

For the analysis of these data, the R software in its version 4.1 was used. A binary analysis of the evolutionary data and the sociodemographic, clinical and therapeutic data was carried out. Then we crossed the type of diagnosis, whether right or left or bilateral peripheral facial paralysis, to gender and any value of $P < 0.05$ was considered statistically significant. All patients signed a consent form and patient anonymity was maintained.

3. Results

During the study period, we recorded 1283 observations, including 65 cases of peripheral facial paralysis, a frequency of 5%. The mean age was 34.3 years \pm 14.7

years (**Table 1**). The sex ratio (M/F) was 1.1 with a male predominance of 54%. Married status was the most represented with 44 cases (67.7%). The majority of our patients (68%) came from urban areas (**Table 1**).

Table 1. Sociodemographic, clinical and paraclinical characteristics.

Features	Effective	Percentage
Middle age	34.3 (\pm 14.7)	
Sex		
Male	35	54
Feminine	30	46
Marital status		
Bride	44	67.7
Single	19	29.2
Widower	2	3.1
Origin		
Urban area	44	68
Semi-urban area	15	23
Rural area	6	9
Reasons for consultation		
Facial asymmetry	64	98.4
Eyelid inoclusion	48	73.8
Onset mode		
Acute	61	94
Progressive	4	6
Consultation period		
Before 72 h	28	43
After 72 h	37	56.9
House & Brackmann Stadium		
Stage IV	40	61.5
Stage III	18	27.3
Stage V	6	9.2
Stage VI	1	1.5
Paraclinical examinations		
Blood test	63	96.9
Brain scan	20	30.7
ENMG	4	6.1
Brain MRI	1	1.5

The reasons for consultation were dominated by facial asymmetry and eyelid in occlusion, with 98.4% and 73.8% respectively (**Table 1**).

The acute onset mode was the most iterative, 94% (n = 61) presented with it. Thirty-seven patients (56.9%) had consulted after 72 hours following the onset of signs. The mean consultation time was 108 ± 105.8 hours (**Table 1**).

House&Brackmann stage IV was the most frequent with 61.5% (n = 40). The patients, in 96.9% of the cases, carried out a blood test, and only 6.1% carried out the electroneuromyogram (**Table 1**).

The idiopathic origin was the predominant one (n = 44) with a frequency of 67.7% (**Table 2**).

Physiotherapy was performed in 61 people (93.8%) and 56 patients (86.1%) had corticosteroid treatment (**Table 2**).

A favorable evolution was observed in almost all patients. Stage I and II dominated, with 53.8% (n = 35) and 38.46% (n = 25), respectively (**Figure 1**).

The male sex showed more right-sided PFP involvement (24 cases) while the female sex (n = 17) was more exposed to left-sided paralysis (p-value = 0.01) (**Table 3**).

Table 2. Etiological and therapeutic characteristics.

Features	Number (N = 65)	Percentage
Etiologies		
Idiopathic	44	67.7
otogenic	6	9.2
stroke	3	4.6
Diabetes	3	4.6
PRNA	3	4.6
Tumor process	2	3.1
HIV	1	1.5
Others	3	4.6
Treatment		
Facial physiotherapy	61	93.9
Corticosteroid	56	86.2
Antiviral	52	80.0
Psychological support	50	76.9
Antibiotic	40	61.5
Eye care	33	50.7
Analgesic	26	40.0
vitamin therapy	25	38.4
Others	18	27.6

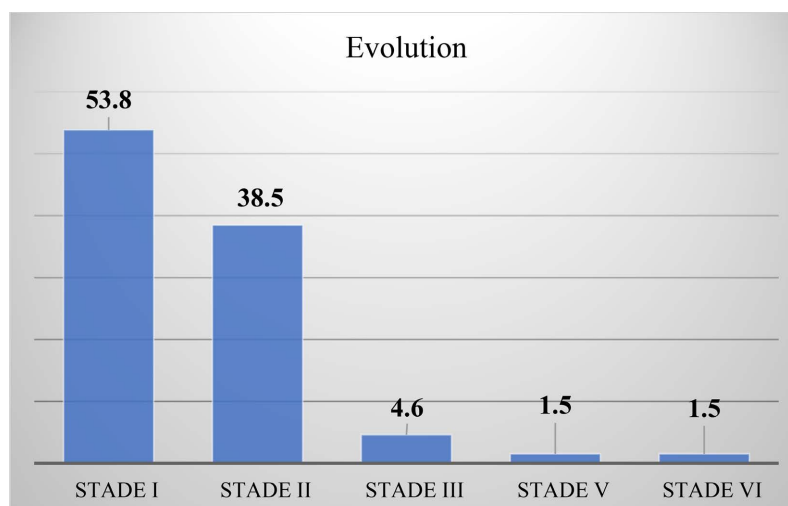


Figure 1. Evolution of patients according to House & Brackmann grading.

Table 3. Distribution of type of diagnosis according to gender.

	Gender		Total	p value
	Feminine	Male		
Diagnostic				0.01
Bilateral PFP	3 (4.62)	1 (1.54)	4	
Right PFP	10 (15.38)	24 (36.92)	34	
Left PFP	17 (26.15)	10 (15.38)	27	

Crossing evolutionary stages with age groups (<35 and >35), then with physiotherapy proved to be statistically significant, respectively (p-value = 0.001) (p-value = 0.006) (**Table 4**).

Table 4. Intersection evolutionary stage with socio-demographic and therapeutic characteristics.

Sociodemographic and therapeutic characteristics	Evolutionary stage (House & Brackmann)					p value
	Stage I	Stage II	Stage III	Stage V	Stage VI	
Age groups						0.001
≤35	28 (43.08)	10 (15.38)	1 (1.54)	0 (0.00)	0 (0.00)	
>35	8 (12.31)	15 (23.07)	1 (1.54)	1 (1.54)	1 (1.54)	
Physiotherapy						0.006
Yes	33 (50.77)	25 (38.46)	2 (3.08)	0 (0.00)	1 (1.54)	
Nope	3 (4.62)	0 (0.00)	0 (0.00)	1 (1.54)	0 (0.00)	

4. Discussion

The lack of realization of certain paraclinical examinations, among others, the

ENMG, the cerebral MRI and the cerebral scanner, in particular, because of their costs, the dates of controls often not respected by the patients constituted our limits and difficulties.

During the study period, we collected 1283 patients, including 65 cases of peripheral facial paralysis, a frequency of 5%. Traore M *et al.* reported 32 cases of PFP for a frequency of 2.72% in the ENT department at the Ambroise Pare clinic in the Republic of Guinea [4].

The mean age found in our study (34.3 ± 14.7) is lower than that of Hohman MH *et al.* [5] who reported a mean age of 44.5 ± 18.6 years in a study population of 2000 patients over a 10-year period; and that of Unn L *et al.* [6] who reported an average age of 46 with extremes of 41 and 51 years.

This difference could be explained by the fact that we recorded all the age groups that we encountered during the survey, but also by the young age of the population.

During the study, we found a male predominance (54%) with a sex ratio (M/F) of 1.1. This result is different from that of Nellis JC *et al.* [7], who found a female predominance (67%).

The acute onset mode was the most reported during our study. This result could be explained by the fact that idiopathic PFP is the most represented, with its onset being sudden, peaking in 72 hours.

When receiving patients, the House & Brackmann scale was used to assess the degree of facial involvement. Stage IV was the most represented. Our result is identical to that found by Barbara M *et al.* [8], who reported 75% PFP at House & Brackmann stage IV.

Unlike the blood test, the electroneuromyogram and cerebral imaging were poorly represented in our study. This would be explained by the high cost of these examinations, often considered exorbitant.

During the etiological research, the diagnosis of peripheral facial paralysis of idiopathic origin was made the most with 67.7% of cases. This result is identical to that found by Traore M *et al.* [4] who reported a 68.7% prevalence of idiopathic PFPs. It is reported in the literature that 75% of PFPs are of idiopathic origin [9].

86.1% of patients received prednisolone, 80% received acyclovir, and 93.8% of patients underwent facial rehabilitation sessions during the study period. In a study conducted by Sullivan F *et al.* [10], also reported by the Cochrane Review, the authors found that adding antiviral therapy to oral corticosteroid therapy in the management of Bell's palsy was associated with a lower rate of incomplete recovery compared to placebo. This study also revealed the benefit of treatment with corticosteroids alone, which was more significant than treatment with antivirals alone.

A second study by Engstrom M *et al.* [11] compared the effects of combination therapy with valacyclovir and prednisolone. She found that the combination therapy was only slightly more effective than using prednisolone alone.

Lima MA *et al.* [12], in their study of the occurrence of peripheral facial paralysis

in people with COVID-19, reported 87.5% corticosteroid use and 25% acyclovir use. The idiopathic etiology being the most incriminated, its management [13]-[15], could also explain these figures.

The use of acyclovir instead of valacyclovir is explained by its availability and cost.

Electroacupuncture and electrostimulation, subject to debate on their use, were components of facial rehabilitation. An improvement in the condition of the patients was noted during the period of the sessions. Oriental studies affirm that electroacupuncture would be effective in the treatment of peripheral facial paralysis, as well as its sequelae [16]-[19].

We have seen a favorable evolution in most patients. 35 patients (53.8%) showed no asymmetry on inspection, and reported no complications (stage I). 25 patients (38.46%) had mild facial asymmetry (stage II).

Our results are not far from those announced in the literature and studies conducted [20]-[23].

This could be explained by the fact that 70% of idiopathic PFP recover completely within the first 6 months and more than 80% subtotal recovery. The recovery rate is also correlated to the degree of initial damage and the etiology [21] [24] [25]. In this study, since most of the treatment times were longer than 72 hours (n = 37) after the onset of the signs, this could also explain this result, since a short treatment period would be in favor of better recovery [26].

In our study, we found a statistically significant link between the evolution of PFP and the age of the patients. Indeed, it is reported that younger patients have a greater likelihood of recovering from their PFP [20] [27].

Physiotherapy proved to be statistically significant in the evolution of PFP.

5. Conclusions

Peripheral facial paralysis is becoming increasingly frequent in neurological consultation in Guinea. It is responsible for an alteration in the quality of life of patients, both physically and mentally. Diagnosis must be early for adequate treatment.

As this study represents only a fairly minimal overview of the situation that could be expected, a more extensive and consistent study at the national level is necessary in order to determine a more exact proportion of the cases of PFP.

Conflicts of Interest

The authors declare no conflicts of interest.

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