

Facial Nerve Palsy and Management: Our Experience

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Abstract: The Facial nerve is the most common cranial nerve to be paralysed due to the fact that it has a long intracranial route, related to the ear and parotid gland and thus susceptible to injuries and infections. This study aims to describe the epidemiology and management of facial nerve palsy. A retrospective cohort review of patients that presented to ORL-HNS Department of Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Nigeria from November 2008 to March 2015 was done. The age, sex, clinical presentations, duration of symptoms prior to presentation, aetiology/diagnosis, treatment and outcome were obtained. Twenty-six patients with age ranging from 1.7 to 83 years and a male: female ratio of 1.6:1 was analysed. Facial nerve palsy occurred more on the left (61.5%) and all unilateral. Otogenic aetiology accounted for 34.62% (9 Cases) followed by idiopathic (26.92%), 5 (19.23%) were due to Malignant parotid tumour, 3 (11.55%) due to temporal bone fracture, and a case (3.84%) due to iatrogenic trauma. The duration of facial nerve palsy before presentation ranged from 1 day to 1 year with a mean of 6.1 months. All the patients had eye care, other modalities of treatment included one or a combination of antibiotics, steroids, physiotherapy, acyclovir and surgery. None had facial nerve decompression, repair or grafting done. Outcome was good in 4 cases (15.4%), satisfactory in 10 cases (38.5%) and unsatisfactory in 3 cases (11.5%), 9 cases (34.6%) were loss to follow up. Facial nerve from otogenic causes ranked highest in our environment. Late presentation and defaulting during treatment is still a challenge in our environment and affect the outcome of facial nerve palsy.

Keywords: facial nerve palsy, ear infection, iatrogenic, trauma, Parotid tumours.

INTRODUCTION

The disorders of the facial nerve, whether paretic or hyperkinetic, demand thorough evaluation. Although aetiology is identified only in about 20% of facial paralysis cases, it is important to carefully evaluate each patient so that aetiology could be identified and appropriate therapy be instituted. The facial nerve innervates all the muscles of expression. Facial nerve paralysis can cause severe disfigurement in affected individuals. It causes psychological and emotional trauma. It is the most common cranial nerve to be paralysed and this is due to the fact that it has a long intracranial route, the major part is within a bony canal and its relationship to the ear and parotid gland [1]. This makes it susceptible to a whole range of injuries and insults as the consequent oedema compresses the nerve within the bony canal.

Facial nerve paralysis (FNP) could be a consequence of untreated or poorly treated

chronic/acute suppurative otitis media (CSOM/ASOM), surgical trauma (mastoidectomy, parotidectomy), tumour (middle ear tumour, parotid tumour) or ear trauma (temporal bone fracture). The patient with facial nerve palsy cannot raise his forehead, nor close his eye on the involved side, while his cheek and lips fall. The care of the patient with facial nerve paralysis starts with a diagnosis and ends with patient's satisfaction. This study aims to determine the epidemiology and management of facial nerve palsy at a semi-urban area in South-Western part of Nigeria.

MATERIALS AND METHODS

This was a retrospective and hospital-based study of patients that presented to Otorhinolaryngology (ORL) Department of Obafemi Awolowo University Teaching Hospital Complex (OAUTHC), Ife from November 2008 to March 2015. Record of all Patients with FNP within the period were retrieved and reviewed for demographic data, clinical presentations, duration of

symptoms prior to presentation, aetiology/diagnosis, treatment, outcome and duration of follow up was obtained. The recovery of facial nerve palsy was analysed at < 6 months, 6 to 12 months and >12months after the onset by using the end stage House Brackmann (HBS) grading scale. This was classified as good (HB-1), satisfactory (HB-2 to 3), and unsatisfactory (HB-4 to 6) and was used to determined the outcome of facial nerve paralysis.

RESULTS

Twenty-six patients presented to ENT with facial nerve palsy (FNP). There were 16 males and 10 females with a male: female ratio of 1.6:1. The Age ranged from 1.7years to 83 years with a mean of 43.33years +/- SD 19.69 years. The most common cause of FNP was otogenic in 10 cases (38.5%) followed by 7(26.92%) cases of idiopathic origin (Bell’s palsy) while surgical trauma (superficial parotidectomy) was the least with 3.84% (1case). Other aetiologies is as documented in Table 1.

Table-1: Distribution of Aetiology of Facial Nerve Palsy

| Aetiology | N (%) |
|-----------------|-----------|
| Otogenic | 10(38.5) |
| Parotid tumour | 5(19.23) |
| Iatrogenic | 1(3.84) |
| Bell’s palsy | 7 (26.92) |
| Temporal bone # | 3(11.55) |
| Total | 26(100) |

Among the cases of otogenic FNP, 5 cases (50%) were due to CSOM, 2 cases (20%) each of ASOM and Herpes zoster oticus respectively, and a case (10%) of malignant otitis external. House-

Brackmann scale (HBS) grading of the FNP at presentation was mostly grade 4 (30.77%). Table 2 highlights the HBS grade of FN at presentation.

Table-2: Distribution of House-Brackmann Facial Nerve Grading at Presentation

| HB Grading | N (%) |
|------------|----------|
| grade 1 | 1(3.84) |
| grade 2 | 5(19.23) |
| grade 3 | 5(19.23) |
| grade 4 | 8(30.77) |
| grade 5 | 4(15.38) |
| Grade 6 | 3(11.55) |
| Total | 26(100) |

The duration of facial nerve palsy at presentation ranged from 1 day to 1 year with a mean 6.1 months. Duration of aetiology range from 2 days to 10 years, mean 5 years +/- SD 4.99 years. There were 10 patients with Right FNP (38.46%) and 16 patients

with left FNP (61.54%) and none had bilateral FNP. All the patients in this study had lower motor neuron paralysis. All the patients had eye care, other modality of treatment is as shown in Table 3.

Table-3: Treatment Modalities of Facial Nerve Palsy

| Treatment | N (%) |
|---------------------------------------|----------|
| Antibiotic/physiotherapy | 10(38.5) |
| Acyclovir/prednisolone/physiotherapy | 5(19.2) |
| Prednisolone/physiotherapy | 6(23.1) |
| Surgery (mastoidectomy/parotidectomy) | 4(15.4) |
| Other | 1(3.8) |
| Total | 26(100) |

According to HB grading scale, the outcome was good (grade 1) in 4 cases (15.4%) (1 at <6 months and 6-12 months, and 2 cases at >12 months respectively), satisfactory in 10 cases (38.5%) and unsatisfactory in 3 cases (11.5%), 9 cases (34.6%) were

lost to follow up at different stages of recovery within the 12 months.

DISCUSSION

Facial nerve palsy (FNP) is the most commonly involved cranial nerve in disease. Bell's palsy is the most common cause of FNP worldwide [1]. However, Bell's palsy is a diagnosis of exclusion and now reserved for idiopathic causes. In this study otogenic causes was found to be the most frequent cause of FNP and this was followed Bell's palsy. In a study earlier done in the same centre, authors reported a reverse of these causes [2]. It could be due to the fact that there are now computed topographic scan and magnetic resonance imaging in our centre which were used to detect other causes of FNP that would have otherwise regarded as idiopathic. Aron et al's report that otitis media as a cause of facial palsy is rarely encountered nowadays is contrary to the result of this study [3]. Another prominent cause which is evolving in the Northern part of Nigeria is cerebro-vascular accident but these type of patients does not visit the ENT clinic in our facility but are referred directly to the Physiotherapy Department for rehabilitation amidst other treatments [4].

Although several studies has shown gender equality in patients developing FNP, our study shows a higher male preponderance which has also been reported by some studies [4,5,6]. All cases of FNP in this study were unilateral. Bilateral FNP is rare and, unlike unilateral FNP, it could be difficult to recognize because of a lack of facial asymmetry. All the patients had lower motor neuron paralysis. This usually results from a lesion in the facial nerve or its nucleus and is characterized by ipsilateral hemi-facial paralysis [7].

In this study, facial palsy was most frequently encountered among the middle age category; this finding is similar to that of several other studies [8-10]. The incidence in the present study also increased with age which agreed with what is found in literature [11,12].

The left side of the face had a higher incidence of FNP than the right in this study. This is similar to the report by Al Ghamdi [13]. This result is contrary to other reports in literature where a higher incidence of right facial palsy was found [3,14].

The average duration of aetiology and FNP was 5 years and 6 months respectively. Also fifteen (57.7%) of the patients presented with grade four, five and six HBS palsy. This shows that most of our patients presented late, especially those with parotid swellings and chronic suppurative otitis media which spanned over a decade and FNP duration spanning about a year. This could be due to the fact that there was lack of adequate awareness about the condition and its recovery pattern because those with sudden onset of FNP presented much earlier.

All our patients had eye care, other modalities of treatment included one or a combination of

antibiotics, steroids, physiotherapy, acyclovir and surgery. None had facial nerve decompression, repair or grafting done. Out of the 26 patients, only 15.4% of the patients had a good recovery followed by 10 (38.5%) who had satisfactory outcome while 11.5% of patients had unsatisfactory recovery at 12 months and beyond. About one third of the patients (34.6%) were lost to follow up; it could be that they were satisfied with their level of recovery or they might have defaulted to seek for alternative assistance about their condition which is not uncommon in our environment.

CONCLUSION

Facial nerve from otogenic causes ranked highest in our study. Late presentation and defaulting during treatment is still a challenge in our environment and affect the outcome of facial nerve palsy. Adequate awareness, timely diagnosis and treatment may improve the outcome.

REFERENCES

1. Anderson RG. Facial nerve disorders and surgery. *Sel Read Plast Surg.* 2006; 10: 1-41
2. Amusa YB, Akinpelu OV, Alabi GH, Komolafe MA, Lasisi OA, Komolafe EO, Adeolu AA, Olateju SO, Olaogun MO, Faniran OO. Facial Nerve palsy: the Experience at a Nigerian Teaching Hospital. *Nigerian Journal of Otorhinolaryngology.* 2006; 3 (2):72- 6.
3. Aron P. Facial Palsy with acute otitis media. *Otolaryngology.* 2005; 132(2):327- 9.
4. Lamina S, Hanif S. Pattern of facial palsy in a typical Nigerian specialist hospital. *Afr Health Sci.* 2012; 12(4): 514-17.
5. Nosan DK, Benecke JE, Murr AH. Current perspective on temporal bone trauma. *Otolaryngol Head Neck Surg.* 1997; 117:67-71.
6. Akoz T, Cinar F, Kapucu MR, Erdogan B. Bilateral facial nerve paralysis with craniofacial trauma. *Rev Laryngol Otol Rhinol.* 2000;121:127-28.
7. Odebode TO, Ologe FE. Facial Nerve Palsy after Head Injury: Case Incidence, Causes, Clinical Profile and Outcome. *J Trauma.* 2006; 61:388-91.
8. Goertzen W, Christ P. Diagnostic and treatment of lesions of the facial nerve after fractures of the temporal bone. *Rev Laryngol Otol Rhinol.* 1990;111:33-36
9. Yeoh TL, Mahmed R, Saim L. Surgical intervention in traumatic facial nerve paralysis. *Med J Malaysia.* 2003;58:432- 36.
10. Lancaster JL, Alderson DJ, Curley JW. Otological complications following basal skull fractures. *J R Coll Surg Edinb.* 1999; 44(2): 87-90.
11. Savettieri G, Salemi G, Rocca WA, Meneghini F, Santangelo R, Morgante L, Coraci MA, Reggio A, Grigoletto F, Perri RD. Incidence and lifetime prevalence of Bell's palsy in two Sicilian municipalities. *Acta neurologica scandinavica.* 1996;94(1):71-5.

12. Al Ghamdi SA. Idiopathic facial nerve paralysis (Bell's palsy) in the Asir region. *Ann Saudi Med.* 1997; 17(6):609–11.
13. Hauser WA, Karnes WE, Annis J, Kurland LT. Incidence and prognosis of Bell's palsy in the population of Rochester, Minnesota. *Mayo Clin Proc.* 1971; 46(4): 258- 64.
14. Ahmed A. When is facial paralysis Bell palsy? Current diagnosis and treatment. *Cleveland Clinic Journal of Medicine.* 2005; 72(5):398–401.