

CLINICO-AETIOLOGICAL STUDY OF LOWER MOTOR NEURON FACIAL PALSYSouvagini Acharya¹, Nirupama Pati², Lakshmana Kumar Panda³¹Associate Professor, Department of ENT, VIMSAR, Burla, Sambalpur, Odisha, India.²Senior Resident, Department of ENT, VIMSAR, Burla, Sambalpur, Odisha, India.³Postgraduate Student, Department of ENT, VIMSAR, Burla, Sambalpur, Odisha, India.**ABSTRACT****BACKGROUND**

The facial nerve paralysis is a broad term having so many differential diagnoses starting from congenital causes to malignant tumour. Accurate diagnosis with localisation of the site of injury or compression and timely intervention has become a challenge to an otorhinolaryngologist.

Objective- To outline the incidence of the different aetiologies and the profile of peripheral facial nerve paralysis patients in the Otolaryngology Dept. of ENT in VIMSAR, Burla.

MATERIALS AND METHODS

The records of 53 patients with facial nerve paralysis seen during the years of 2016 & 2017 were analysed.

RESULTS

From the 53 patients analysed, 60.4% were male, maximum cases 35.85% were in 3rd decade of age and had the right side of the face involved in 62.26%. Bell's palsy was the most frequent aetiology (66.04%), others are traumatic (11.32%), Ramsay Hunt syndrome (1.89%), CSOM (16.98%), malignant otitis externa (1.89%). One case of Bell's palsy during pregnancy was also seen in this series.

CONCLUSION

The data found are similar to the most of the literature showing that Bell's palsy is still the most frequent. Males are more commonly affected with a preponderance to involve right side of face.

KEYWORDS

Facial Nerve, Bell's Palsy, Peripheral.

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BACKGROUND

The facial nerve is the seventh cranial nerve which is the most emotive nerve in the human body. It has a tortuous course in the temporal bone and it supplies the muscles of facial expression. It is frequently damaged by disease of otolaryngological origin inside the skull, in the petrous bone and in the parotid gland.

Since the diagnostic and interventional aspects of facial nerve disorders have improved over decades, accurate diagnosis with localisation of the site of injury or compression and timely intervention can avoid devastating complications.

There are wide varieties of aetiology for the facial palsy. The congenital facial palsy is associated with so many syndromes like Moebius syndrome, Goldenhar syndrome, CHARGE syndrome, etc. infections, tumours, trauma and some neurological syndromes like Millard-Gubler and

multiple sclerosis account to the acquired causes. The most common cause of acute facial palsy is Bell's palsy which accounts for approximately 70%.¹

Some of the residual complications due to residual palsy are exposure keratitis leading to blindness, synkinesis, tics and spasm, contracture, Frey's syndrome, etc.

The paralysis graduation is important for the clinical and postoperative follow-up. Various methods of graduation have been proposed along the years, and lately the scores of House-Brackmann and Yanagihara have been widely used. Both scores have good clinical applicability and offer few differences in the characters evaluated.²

Different topodiagnostic tests like: Schirmer's, Stapedial Reflex, Electrogustometry and Salivary Flow are important to set up the probable lesion place in addition to contribute for the prognosis evaluation. However, imaging methods such as computed tomography and magnetic resonance are also used to establish the diagnosis.

The present work has been designed to stress upon the clinical assessment and aetiology of facial palsy amongst the patients attending the In & Outpatients Department of Otorhinolaryngology of VIMSAR, Burla.

Objective

The present study is aimed to categorise the patients presenting with facial palsy by age, sex, socioeconomic

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Corresponding Author:

Dr. Nirupama Pati,

Senior Resident, Department of ENT, VIMSAR,

Burla, Sambalpur, Odisha, India.

E-mail: niru2011ms@gmail.com

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status, habitat, religion and associated disease and to evaluate the causes of facial palsy by assessing the patients with proper history taking, clinical examination and available diagnostic measures.

MATERIALS AND METHODS

This study was carried out in the Department of ENT, VIMSAR, Burla, Sambalpur.

Type of study- This is a prospective analytical study.

Duration- The study was conducted for a period of one year from February 2016 to January 2017.

Inclusion Criteria

All patients without any bias for age & sex, attending the Outpatient, Inpatient Department of ENT and referred cases from Emergency Department of this institute with facial nerve palsy have been included in this study.

Exclusion Criteria

Moribund and noncompliant patients were excluded from the study.

RESULTS

The present work comprises clinical assessment of 53 cases of facial nerve palsy in the Department of ENT, VIMSAR, Burla from February 2016 to January 2017.

The general incidence of cases of facial nerve palsy is 0.091% of total cases attending the ENT OPD. All the cases attending this department are of peripheral origin.

Males are more predominantly affected, the ratio M: F being 1.5:1. The maximum number of facial palsy occurred in the 3rd decade (35.85%). The youngest patient in the series is a male child of 5 years suffering from Bell’s palsy and the oldest patient is also a case of Bell’s palsy in a male of 82 years.

35 patients (66.04%) belong to rural area as compared to 18 (33.96%) to the urban area.

Most of the cases belong to acute idiopathic peripheral palsy or Bell’s palsy. The second most common cause was infections (20.75%) which constituted CSOM (16.98%), Ramsay Hunt Syndrome (1.89%) and malignant otitis externa. The third common cause was trauma (11.32%).

Overall incidence of facial palsy is more on the right side as compared to the left.

While using House-Brackmann grading system, most of the cases presented with grade IV & III palsy with 39.62% & 30% respectively. The next common presentation was with grade V palsy.

17.14% of the patients who presented with facial palsy were diabetics. 5.71% were hypertensive cases, 1 case (2.86%) was pregnant.

Bell’s palsy	35	66.04%
CSOM	9	16.98%
Ramsay Hunt syndrome	1	1.89%
Malignant otitis externa	1	1.89%
Trauma	6	11.32%
Carcinoma of middle ear	1	1.89%
Table 1. Aetiology of Peripheral Facial Nerve Palsy (n=53)		

Sex	Male- 32 (60.4%) Female- 21 (39.6%)
Side	Right- 33 (62.26%) Left- 20 (37.74%)
Table 2. Profile of Patients of Facial Nerve Palsy According to Sex, Side Affected	

Age Group in Years	Numbers	Percentage
1-10	2	3.77
11-20	7	13.21
21-30	19	35.85
31-40	12	22.64
41-50	4	7.55
51-60	3	5.66
61-70	4	7.55
71-80	1	1.89
81-90	1	1.89
Table 3.		

DISCUSSION

The facial nerve from its origin to its terminal branches has intracranial, intratemporal and extratemporal courses with variable degree of variations. In 1943, Seddon described three basic types of peripheral nerve injury that include a) Neuropraxia- It is a temporary interruption of conduction without loss of axonal continuity; b) Axonotmesis- It involves loss of the relative continuity of the axon and its covering of myelin, but preservation of the connective tissue framework of the nerve (the encapsulating tissue, the epineurium and perineurium are preserved); c) Neurotmesis- It is a total severance or disruption of the entire nerve fibre.

The facial palsy attacks about 20-60 persons in 100000 per year.³ Male sex is more commonly affected which correlates well with the study of Ayala Mejias et al⁴ and OA Afolabi et al.⁵ Rodrigues R et al also showed an incidence without statistical difference between the sexes and incidents stronger in the 4th decade of life.⁶

Bell’s palsy is described as acute idiopathic lower motor neuron palsy of facial nerve that is usually unilateral, self-limiting, non-progressive and spontaneously remitting by 4-6 months. In a study with 3454 patients, Schiatkin B⁷ & May M⁸ presented results similar to ours with prevalence of Bell’s palsy cases (48.3%). Santos-Lasaosa et al described a frequency much larger of idiopathic cases between 62% and 93%, probably due to the fact the study was carried out with patients who attended basic health units.⁹ Likewise, Steiner I et al presented a frequency of Bell’s palsy between 60% and 75% of the cases of facial paralysis¹⁰ and in a study of 38 cases Rodrigues R et al found 73.6% of idiopathic cases.⁶ We have seen Bell’s palsy in 66.04% cases in our study corroborating well with many of the above studies.

Ramsay Hunt syndrome was first described in 1907 by James Ramsay Hunt in a patient who had otalgia associated with cutaneous and mucosal rashes, which he ascribed to infection of the geniculate ganglion by human herpes virus 3 (i.e., Varicella-zoster virus [VZV]).¹¹ In a study with 2570 patients, in a period of 25 years, Peitersen shows that these

patients present a more severe facial paralysis and only 21% achieve a complete recovery.¹² In his 31-year series, Schiatkin B & May M found 7% of Ramsay Hunt cases.^{7,8} In their study with 38 cases, Rodrigues R et al found 2 cases of Ramsay Hunt.⁶ Our study presented with 1.89% (1 case) with diagnosis of Ramsay Hunt Syndrome.

In this place it is not surprising to see infective conditions as the second most common cause especially CSOM because of the predominantly rural population belonging to low socioeconomic status with various other contributing factors like overcrowding, frequent upper respiratory tract infections and unhygienic practices attending this hospital. In this study, we observed that out of the total of 53 cases, 20.75% involve these diagnosis distributed as 9 cases (16.98%) of CSOM, 1 case (1.89%) of malignant external otitis. In their study, Rodrigues R et al report 13.1% of infectious causes from which this study classifies as such: acute otitis media, chronic otitis media and Ramsay Hunt's Syndrome (25), while Schiatkin B & May M indicate only 4%.^{7,8} Pollock and Brown¹³ reported it to be 0.16% (2/1250), Kangsanarak et al¹⁴ reported it to be 0.29% in 13948 patients with CSOM, and Savic and Djeri¹⁵ reported it as 5.1% in 1261 patients.

Although the facial nerve is susceptible to trauma along its entire length, the temporal bone is the most common site of trauma resulting in facial paralysis. In an overview of 1322 patients with facial paralysis, May (1983) reported that 16% were caused by trauma. Schiatkin B & May M present 23% of traumatic cases; Rodrigues R et al mention 7.8% of the cases of his analysis. In a study with 82 patients, Pinna BR et al describe 2 cases of iatrogenic origin.¹⁶ Our study presents 11.32% of traumatic causes.

Ayala Mejías et al confirmed prevalence on the left side of the face with 60% of the cases, differently from the results in which we found a predominance on the right side with 62.26% of the cases. Exposure to cold is one of the commonest association seen in about 47% patients of Bell's palsy (Saeed et al). In our study, it was seen 45.71% of the cases. Otagia is a relatively common symptom (Peiterson) which in our study is 57.14%.

In studies with 180 patients, Moraes et al confirmed 8 cases of idiopathic facial paralysis in pregnant women, and 5 cases in the 3rd quarter of pregnancy and 3 cases in puerperium.¹⁷ Our study found 3 cases of idiopathic facial paralysis in pregnant women.

Kasse CA et al 2003¹⁸ in their study of 40 patients of facial palsy found 17 patients (42.5%) with a grade IV palsy which supports well with our data (39.62%).

CONCLUSION

Our work presented findings similar to most part of the literature so far. It was found that no age is immune to this pathology but maximum number of cases occurred in 3rd and 4th decades of life overall with a slight prevalence of 60.4% in the male sex, a stronger incidence of affection of the right hemiface with 62.26% and with predominance of cases of Bell's palsy with 66.04% of the cases followed by the traumatic causes totalising 16.67% of the patients.

So it is concluded that each case of facial palsy should be evaluated with thorough clinical examination and various diagnostic tests (as an individual case) to reach at a precise diagnosis and appropriate management.

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