

STUDY OF VARIOUS CAUSES OF FACIAL PALSY AND ITS MANAGEMENT PROTOCOL

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ABSTRACT

Facial palsy is generally due to a congenital or acquired cause. It is often associated with severe disfigurement, emotional disturbance and anxiety. The causes for facial palsy vary in different age groups. In neonates and infants, the facial palsy is often associated with birth injuries or developmental anomalies of the ear.¹ In adults and older age group, infective conditions like cholesteatoma, tuberculous otitis media, encephalitis and neoplastic condition like glomus jugular tumour and facial nerve tumours are observed as a cause for facial palsy. Recovery from facial nerve palsy depends on the cause. Reasonably good recovery is seen in Bell's palsy after medical treatment. Similar results are obtained in chronic suppurative otitis media associated with granulation tissue after surgical intervention.

KEYWORDS

Facial Palsy, Atresia of the Ear, Chronic Suppurative Otitis Media, Malignant Otitis Externa.

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INTRODUCTION

Facial palsy is associated with sudden asymmetry of the face leading to severe anxiety and emotional disturbance. It is distressing for parents if it develops in children. It is often associated with severe epiphora, drooling of saliva on the paralysed side including difficulties in mastication. Facial palsy is observed in different age groups ranging from neonates to old age. In neonates and infants, the cause of facial palsy is often associated with atresia of the ear and birth injuries.² In adolescents it is associated with infective aetiology like cholesteatoma, Bell's palsy and rarely atresia of the ear if patient is presented late. In adults it is associated with Bell's palsy, temporal bone fracture, Guillain-Barre's syndrome, encephalitis, tuberculous otitis media and CSOM with granulations. In older age groups, Bell's palsy and diabetes are often associated. In cases associated with idiopathic cause (Bell's palsy), ENT examination is essentially normal.

MATERIALS AND METHODS

Retrospective study of 31 cases of facial palsy in all age groups from newborn to old age is taken from tertiary referral centre – Medciti Institute of Medical Sciences and causes are investigated and managed. Age wise incidence of cause and prognosis is analysed.

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RESULTS

Age Group	Age	Underlying Cause	Number of Cases
	1yr	Congenital atresia with facial palsy	1
0-10y	5yr	Facial palsy viral etiology	1
11-20y	16yr	CSOM with cholesteatoma	1
		Bell's palsy	1
		Unilateral atresia of ear	1
Facial Palsy Results in Children and Adolescents			



Fig. 1: Facial Palsy in 5yr old child due to viral etiology

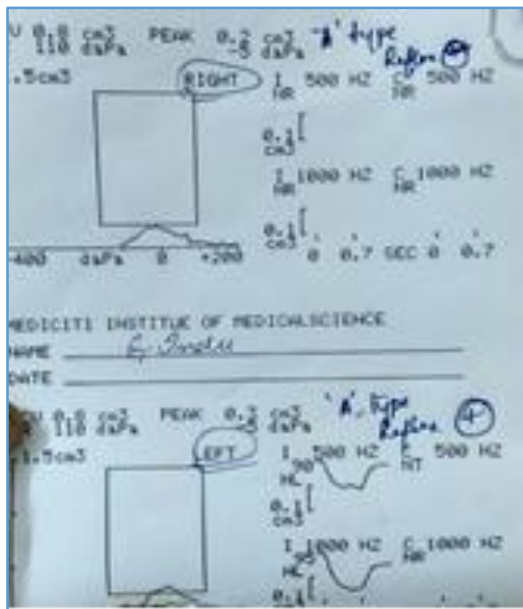


Fig. 2: Impedance audiometry showing no middle ear pathology



Fig.5: Right Facial palsy with unilateral atresia of the pinna

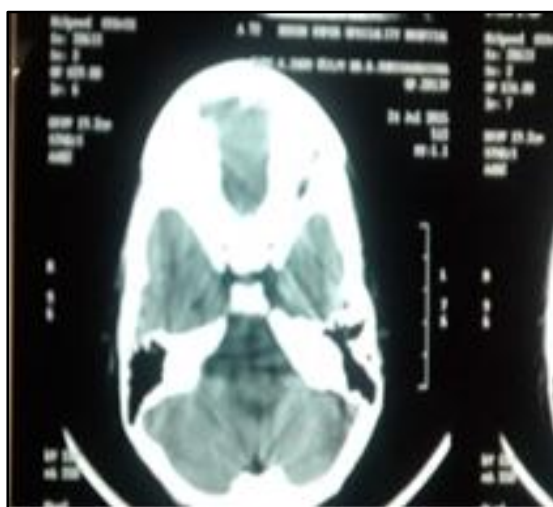


Fig. 3: CT scan of Temporal bone of the child showing no significant pathology



Fig. 6: CT scan of temporal bone showing atresia of external auditory canal



Fig. 4: Unilateral atresia of ear in 17yr old male



Fig. 7: Pure tone audiogram: Severe mixed hearing loss in right ear

In neonates and infants, the cause of facial palsy is often associated with atresia of the ear and birth injuries. In adolescents it is associated with infective etiology like cholesteatoma, Bell's palsy and rarely atresia of the ear if patient is presented late. In adults it is associated with Bell's palsy, temporal bone fracture, Guillain-Barre's syndrome, encephalitis, tuberculous otitis media and CSOM with granulations. In older age groups, Bell's palsy and diabetes are often associated.



Fig. 8: Left facial palsy with cholesteatoma

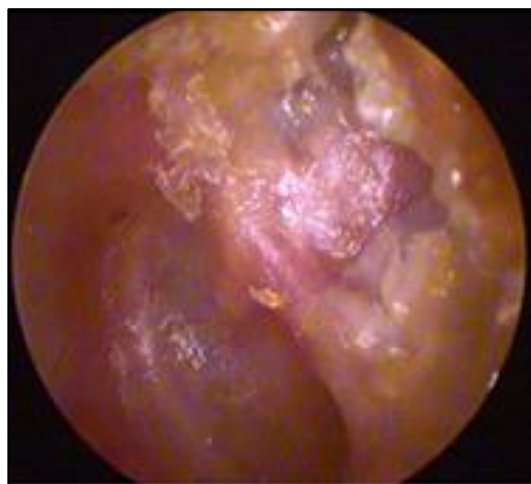


Fig. 9: Otoendoscopic picture showing attic cholesteatoma

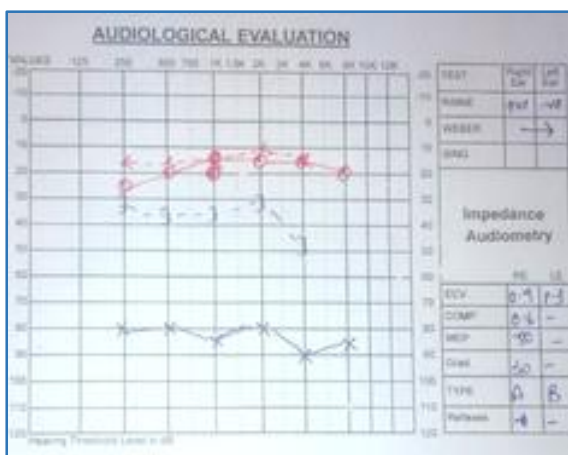


Fig. 10: Pure tone audiogram- Left ear: Severe Mixed Hearing Loss

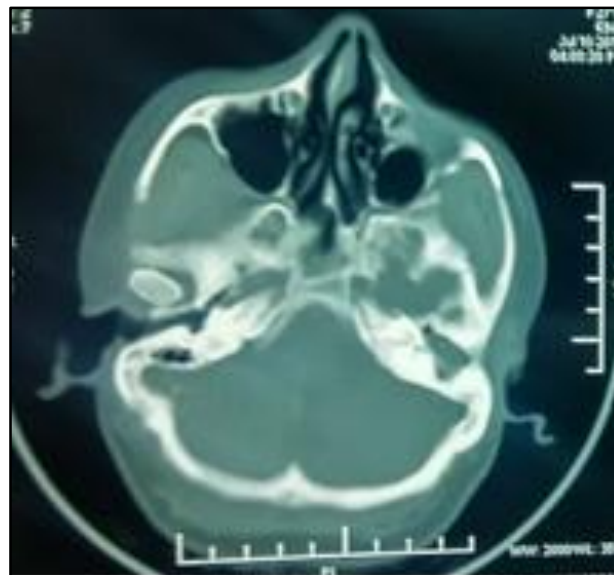


Fig. 11: CT scan picture showing Cholesteatoma in Left middle ear



Fig. 12 & 13: Facial nerve palsy post parotidectomy



Fig.14: Traumatic facial palsy with Left temporal bone fracture in a 22yr old male

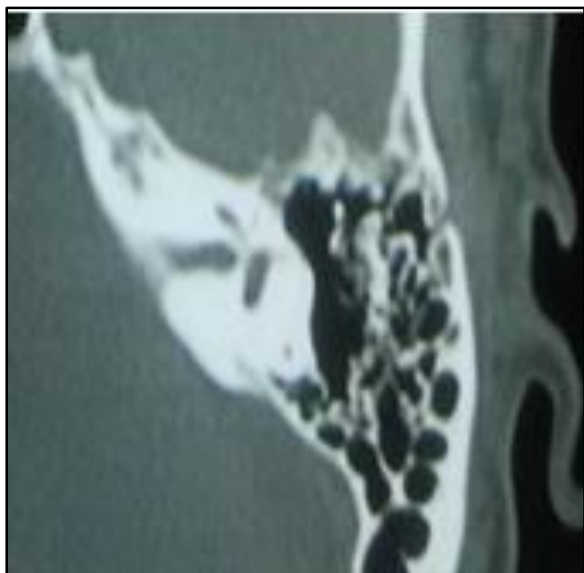


Fig. 15: CT scan showing fracture of the Left Temporal Bone



Fig. 16: Otoendoscopic picture showing haemorrhage in the epitympanum

Age Group	Age	Underlying Cause	Number of Cases
21-30y	22y and 29y	CSOM with Cholesteatoma	2
		Bell's Palsy	2
		Temporal bone fracture	1
31-40y		Tuberculous Otitis Media	1
		Guillain-Barre's Syndrome	2
		Encephalitis	1
		CSOM with Granulations	1
41-50y		Bell's Palsy	2
		CSOM with Cholesteatoma	1
		Bell's Palsy	3
		Malignant Otitis Externa	1
		Post Parotidectomy	1
		Encephalitis	1
		Diabetes	1
		Facial Nerve Tumor	1
51-60y		Glomus Jugulare Tumor	1
		Bell's palsy	2
		Diabetes	1

Age-Wise Analysis of Facial Palsy in Adults and Old Age

	Distribution of patients w.r.t age groups	Total No. of Patients	Study Group Percentage	Result after Treatment
Atresia	1year - 1 11-20 yrs - 1	2	6.45%	Not Satisfactory
Viral infection	0-10 yrs - 1	1	3.22%	Satisfactory
Cholesteatoma	21-30 yrs - 2 11- 20 yrs - 3	5	16.1%	Satisfactory after surgery
Bell's Palsy	11- 20 yrs -1 21-30 yrs -2 31-40 yrs -2 41- 50 yrs -3 51-60 yrs - 2	10	32.2%	Satisfactory
Temporal Bone Fracture	21- 30 yrs - 1	1	3.22%	Not Satisfactory
Tuberculosis	31-40 yrs - 1	1	3.22%	Not Satisfactory
Guillain Barre Syndrome	31- 40 yrs - 2	2	6.45%	Satisfactory
Encephalitis	31-40 yrs - 1 41-50 yrs - 1	2	6.45%	Not Satisfactory
Malignant OE	41- 50 yrs - 1	1	3.22%	Not Satisfactory
Post Parotidectomy	41- 50 yrs - 1	1	3.22%	Not Satisfactory
Diabetes	41-50 yrs - 1 51- 60 yrs - 1	2	6.45%	Satisfactory
Facial Nerve Tumour	41- 50 yrs -1	1	3.22%	Not satisfactory
Glomus Tumour	41-50 yrs -1	1	3.22%	Not satisfactory
CSOM with granulations	31- 40 yrs -1	1	3.22%	Satisfactory
Master Chart of Facial Palsy				

DISCUSSION

Unilateral facial nerve palsy may be due to a detectable cause (Secondary) or idiopathic (Primary) without obvious cause (Bell's Palsy).³⁻⁵ Facial palsy is observed in different age groups ranging from neonates to old age. Facial nerve palsy is 2-4 times less frequent in children than in adults.⁶ The symptoms and signs of facial nerve palsy are due to the fact that the facial nerve carries not only motor fibres to stapedius muscle, but also autonomic innervation to lacrimal gland, submandibular gland and taste to anterior two-thirds of tongue via chorda tympani. It is often associated with severe epiphora, altered sense of taste, drooling of saliva on the paralysed side including difficulties in mastication and speech.⁷⁻⁸ Patient of facial palsy appears unilaterally expressionless when he wants to smile.⁹ Many patients give history of ear pain, aural fullness and retro-auricular pain which may precede palsy.¹⁰

In neonates and infants, the cause of facial palsy is often associated with atresia of the ear and birth injuries. In children particularly associated with forceps delivery which generally produces neuropraxia, the chances of recovery are good.¹¹ In adolescents, it is associated with infective aetiology like cholesteatoma or idiopathic like Bell's palsy and rarely atresia of the ear if patient is presented late. In adults, it is associated with Bell's palsy, temporal bone fracture, Guillain-Barre's syndrome, encephalitis, tuberculous otitis media and CSOM with granulations. Tuberculous otitis media presents with facial palsy associated with watery discharge from the ear and pale granulations in the middle ear.

Rarely it may present as a silent otitis media with no significant otoscopy findings resulting in facial palsy.¹² In older age groups, Bell's palsy and diabetes are often associated. There are indications that facial nerve is subclinically involved in 6% of patients of diabetes.¹³ Bell's palsy is different from other facial palsies as the cause is metabolic or vascular.¹⁴ In cases associated with idiopathic cause (Bell's palsy), ENT examination is essentially normal and majority of patients show good recovery with treatment with steroids, anti-viral drugs and physiotherapy. In cases of otitis media associated with cholesteatoma where mastoidectomy is done and facial

nerve is explored, good recovery is observed in cases associated with perifacial granulation tissue.

Removal of granulation tissue around the facial nerve is probably responsible for recovery from neuropraxia of the facial nerve. In cases of cholesteatoma with facial palsy, where patient has presented late even after the clearance of cholesteatoma from the mastoid and nerve grafting did not give satisfactory results, probably due to ascending Wallerian degeneration. In cases of malignant otitis externa, after control of diabetes and debridement of granulation tissue from the ear, good recovery of the nerve was achieved. Similar results are seen in acute suppurative otitis media associated with dehiscent facial canal and Guillain-Barre's syndrome.

In cases of temporal bone fractures, glomus jugular tumor, tuberculosis otitis media and congenital atresia of the ear, no recovery of the nerve was observed. Management of facial palsy consists of medical treatment associated with intense physiotherapy in cases like Bell's palsy, Ramsay-Hunt syndrome, Encephalitis and Diabetes Mellitus. Eye protection is an important measure to prevent corneal injury due to dehydration by applying eye ointment during the day and watch-glass bandage during the night. Surgical exploration of the nerve is considered in conditions like CSOM with cholesteatoma, glomus jugular tumor and facial nerve tumors. In fracture temporal bone, surgical intervention has not yielded satisfactory results.

CONCLUSION

Facial palsy is observed in different age groups ranging from neonates to old age. The commonest cause of facial palsy is observed in the ENT OPD in Bell's palsy. The commonest otological cause for facial palsy is cholesteatoma. It was observed that post-surgical management provided, satisfactory results were noted in cases with Bell's palsy, cholesteatoma, viral infection, Guillain-Barre's syndrome, diabetes. It was also noted that if the facial nerve palsy condition presentation is late, the results of post-surgical management were observed to be not satisfactory.

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