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Bell's palsy and hemi facial spasm in idiopathic facial paralysis: A retrospective preliminary study

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Abstract
Background: Despite various management strategies available for managing idiopathic facial paralysis, recurrence of nearly 7-12% has been seen by various studies. The recurrence can be contralateral or ipsilateral compared to the side of the first episode. Recurrence of episodes more than thrice is very rare. Long-term complication presenting as hemifacial spasm is reported in nearly 5% of the cases.
Aim: The present retrospective clinical study was conducted to assess the recurrence of hemifacial spasm and facial palsy.
Methods: Retrospective analysis of the data was done for 50 subjects having idiopathic facial paralysis. Among included 50 subjects of the study, recurrence of two episodes was in 7 study subjects, three episodes were seen in 2 subjects, one subject had a rare fourth-time recurrence. In the included 50 subjects, a hemifacial spasm was observed. Persistence in one subject was seen even after 34 years. Suitable investigations were carried out and results were formed.
Results: Recurrence in the idiopathic facial paralysis in 20% (n = 10) study subjects. Recurrence number as assessed in the study subjects was once in 80% (n = 40) study subjects, twice recurrence was seen in 14% (n = 7) study subjects, thrice in 2% (n = 4) study subjects, and more than thrice (four times) in 1 (2%) study subject. Time interval of 1-2 years, 4-5 years, 6-7 years, and more than 10 years were seen in 60% (n = 6), 20% (n = 2), 10% (n = 1), and 10% (n = 1) study subjects.
Conclusion: The present study concludes that there was a significant incidence of idiopathic facial paralysis in the present study which was more common in females and the first two years following the first episode.

Keywords: Bell's palsy, complications, hemifacial paresis, idiopathic facial paralysis, recurrence

Introduction
Idiopathic facial paralysis, also known as Bell's palsy is caused by lower motor neuron weakness in the facial nerve, is of acute onset, and has no detectable lesion/cause associated with it. One of the most common causes leading to facial paralysis is Bell's palsy. It has been extensively studied by various researchers and scholars, no particular etiologic factor of the disease has been identified. The subjects usually present with either partial or complete limitation of the muscle movement on one side of the face [1]. The disease symptoms are sudden with the appearance of the facial symmetry presenting as potential eye injury, eye dryness, inability to close eyelids, inability to whistle, and/or difficult mastication. Some literature data consider it as vasculopathy in the facial nerve (vasa nervorum), whereas, others consider it as viral etiology or cold exposure. However, the results considering etiology are inconclusive. Exclusion helps in the diagnosis of idiopathic facial paralysis.
The risk is higher in subjects with diabetes mellitus and pregnant females. The lifetime risk is relatively less affecting only 1 subject among 60. In addition to the facial drooling, affected subjects also present a clinical picture of noise intolerance, altered taste, paresthesia, and/or facial pain. One possibility of idiopathic facial paralysis can be attributed to ischemic facial nerve compression in the facial canal's meatal segment. Although lifetime risk is less with 1 in 60 subjects, the yearly incidence ranges from 11 to 40 subjects in a population of 1 lakh [2].
Complete resolution in subjects with facial palsy is seen in nearly 71% of subjects even without any treatment or intervention. Idiopathic facial paralysis can be complete or partial and is unilateral. It is usually not associated with any other neurologic complication. In subjects with the spontaneous appearance of idiopathic facial paralysis, Bell's palsy leads to hemifacial weakness which persists in approximately 30% of the affected subjects.

This residual hemifacial weakness leads to disfigurement and is severe in nearly half of the subjects [3].

Genetic predilection and family history have also been found associated with facial palsy along with sarcoidosis and Lyme disease. Some authors show the association of bell's palsy to Melkerson-Rosenthal syndrome which is presented as orofacial edema, fissured tongue, and facial paralysis. A higher incidence of Bell's palsy is seen in pregnant females and has poor recovery rates [4].

Treatment modalities for Bell's palsy include corticosteroids, intratympanic steroid injections, antiviral drugs, physical therapy, TENS therapy, tailored facial exercises, and/or surgical interventions including nerve decompression. Subtotal facial nerve decompression is found to be effective in subjects with Merkerson-Rosenthal syndrome. A better prognosis is seen when treatment is initiated within one week [5].

Despite various management strategies available for managing idiopathic facial paralysis, recurrence of nearly 7-12% has been seen by various studies. The recurrence can be contralateral or ipsilateral compared to the side of the first episode. Recurrence of episodes more than thrice is very rare. Long-term complication presenting as hemifacial spasm is reported in nearly 5% of the cases [6]. However, data assessing complications and recurrence of idiopathic facial paralysis are scarce in the literature. Hence, the present study was conducted to assess the recurrence of hemifacial spasms and facial palsy.

Materials and Methods

The present retrospective clinical study was conducted to assess the recurrence of hemifacial spasms and facial palsy. The study was conducted at Maharajah's Institute of Medical Sciences, Nellimarla, Vizianagaram, Andhra Pradesh, India after obtaining clearance from the concerned Ethical committee. The study population was comprised of the subjects visiting the Outpatient Department of the Institute with idiopathic facial paralysis. The study included a total of 50 subjects from both genders within the age range of 10-70 years and the mean age of 38.46 ± 3.28 years.

The inclusion criteria for the study were subjects having idiopathic facial paralysis, were in a sound state of mind, within the age range of 10-70 years, and the subjects who were willing to participate in the study. The exclusion criteria were subjects who were not willing to participate in the study, paralysis after trauma, otomastoiditis, acute otitis media, cerebral stroke, zoster oticus, subjects having complete facial paralysis, subjects with associated mental disorders, and subjects with incomplete data. Based on these criteria, 50 subjects were finally included in the study.

After explaining the detailed study design, informed consent was taken. The data for the study were extracted from the files and records of the Institution. The data were assessed concerning the clinical parameters. Among included 50 subjects of the study, recurrence of two episodes was in 7 study subjects, three episodes were seen in 2 subjects, one subject had a rare fourth-time recurrence. In the included 50 subjects, a hemifacial spasm was observed. Persistence in one subject was seen even after 34 years. The investigations carried out in the study subjects were one or more of the following: Facial muscle EMG, facial nerve conduction, MRI brain, CT head, HRCT, chest X-ray, Electrophoresis, Lupus erythematosus cells, Anti-nuclear antibodies, serum calcium levels, and/or routine blood investigations. No immunologic tests were done for any study subject as observed from the extracted data. The collected data were subjected to the statistical evaluation and expressed in percentage and number, and mean and standard deviation.

Results

The present retrospective clinical study was conducted to assess the recurrence of hemifacial spasms and facial palsy. The study retrospectively analyzed a total of 50 subjects from both genders within the age range of 10-70 years and the mean age of 38.46 ± 3.28 years. The study retrospectively analyzed the data records of the subjects to assess recurrence in the study subjects.

The study results showed that in 50 included subjects, it was seen that there was recurrence in the idiopathic facial paralysis in 20% (n = 10) of study subjects. Recurrence number as assessed in the study subjects was once in 80% (n = 40) study subjects, twice recurrence was seen in 14% (n = 7) study subjects, thrice in 2% (n = 4) study subjects, and more than thrice (four times) in 1 (2%) study subject. Maximum study subjects have shown the single-time occurrence of Bell's palsy and only one subject had a recurrence for the fourth time till the study was completed as shown in Table 1.

Table 1: Recurrence of idiopathic facial paralysis in the study subjects.

Recurrence	%	n
Study subjects	100	50
Recurrence		
Seen	20	10
Single episode	80	40
Number		
Once	80	40
Twice	14	7
Thrice	4	2
More than thrice	2	1

The results of the present study have shown that there were 18% (n = 9) subjects in the age range of 10-20 years, 16% (n = 8) within the age of 21-30 years, 36% (n = 18) in 31-40 years, 12% (n = 6) in 41-50 years, 16% (n = 8) in 51-60 years, and 1 subject in 61-70 years. There were 18% (n = 9) subjects from rural area in 1- = 0-20 years, 6% (n = 3) and 10% (n = 5) subjects from urban and rural areas in 21-30 years group, 24% (n = 12) and 12% (n = 6) from urban and rural background from 31-40 years group. This age range had the maximum number of study subjects. One subject from the age range of 61-70 years was from an urban background. Among the 10 reported recurrence cases, there were 14% (n = 7) females and 6% (n = 3) males. Among these females, 6% (n = 3) and 8% (n = 4) females from urban and rural backgrounds respectively. In 3 males all were from the rural background. Concerning the facial side involved, 40% (n = 4) had paralysis of the right side, 50% (n = 5) had left side involved, and 10% (n = 1) did not remember the side involved or the data were missing. 60% (n = 6) subjects had ipsilateral side involved compared to the first episode and 40% (n = 4) had contralateral site involved compared to the first episode (Table 2).

Table 2: Characteristics of the subjects with idiopathic facial paralysis.

Parameter	n	Urban % (n)	Rural % (n)
Age (Years)			
10-20	18 (9)	0	18 (9)
21-30	16 (8)	6 (3)	10 (5)
31-40	36 (18)	24 (12)	12 (6)
41-50	12 (6)	8 (4)	4 (2)
51-60	18 (9)	10 (5)	8 (4)
61-70	0	0	0
Gender			
Females	14 (7)	6 (3)	8 (4)
Males	6 (3)	6 (3)	6 (3)
Facial side			
Right	40 (4)	-	
Left	50 (5)		
Not known	10 (1)		
Affected side			
Ipsilateral	60 (6)		
Contralateral	40 (4)		

In the 10 study subjects who have reported with recurrence, the number of episodes assessed at recurrence were 2 episodes in 40% (n = 4) study subjects, 3 episodes in 10% (n = 1), 4 episodes in 10% (n = 1), 5 episodes in 10% (n = 1), 6 episodes in 10% (n = 1), and not known in 20% (n = 2) study subjects respectively. The study also assessed the interval between recurrence episodes, it was seen that time intervals of 1-2 years, 4-5 years, 6-7 years, and more than 10 years were seen in 60% (n = 6), 20% (n = 2), 10% (n = 1), and 10% (n = 1) study subjects respectively as depicted in Table 3.

Table 3: Recurrence episodes and the interval between episodes in the study subjects with idiopathic facial paralysis.

Variable	%	N
Number of episodes at recurrence		
2	40	4
3	10	1
4	10	1
5	10	1
6	10	1
Not known	20	2
The interval between episodes (years)		
1-2	60	6
4-5	20	2
6-7	10	1
>10	10	1

Discussion

The present retrospective clinical study was conducted to assess the recurrence of hemifacial spasms and facial palsy. The study retrospectively analyzed a total of 50 subjects from both genders within the age range of 10-70 years and the mean age of 38.46 ± 3.28 years. The study retrospectively analyzed the data records of the subjects to assess recurrence in the study subjects.

The results of the present study results showed that in 50 included subjects, it was seen that there was recurrence in the idiopathic facial paralysis in 20% (n = 10) of study subjects. Recurrence number as assessed in the study subjects was once in 80% (n = 40) study subjects, twice recurrence was seen in 14% (n = 7) study subjects, thrice in 2% (n = 4) study subjects, and more than thrice (four times) in 1 (2%) study subject. Maximum study subjects have shown the single-time occurrence of Bell's palsy and only one subject had a recurrence for the fourth time till the study was completed. These findings were consistent with the studies of Tabarki B [7] in 2014 and Ismail AQ *et al.* [8] in 2014 where authors have reported comparable incidence of idiopathic facial paralysis in their respective studies.

The study results have also shown that there were 18% (n = 9) subjects in the age range of 10-20 years, 16% (n = 8) within the age of 21-30 years, 36% (n = 18) in 31-40 years, 12% (n = 6) in 41-50 years, 16% (n = 8) in 51-60 years, and 1 subject in 61-70 years. There were 18% (n = 9) subjects from rural area in 1- = 0-20 years, 6% (n = 3) and 10% (n = 5) subjects from urban and rural areas in 21-30 years group, 24% (n = 12) and 12% (n = 6) from urban and rural background from 31-40 years group. This age range had the maximum number of study subjects. One subject from the age range of 61-70 years was from an urban background. Among the 10 reported recurrence cases, there were 14% (n = 7) females and 6% (n = 3) males. Among these females, 6% (n = 3) and 8% (n = 4) females from urban and rural backgrounds respectively. In 3 males all were from the rural background. Concerning the facial side involved, 40% (n = 4) had paralysis of the right side, 50% (n = 5) had left side involved, and 10% (n = 1) did not remember the side involved or the data were missing. 60% (n = 6) subjects had ipsilateral side involved compared to the first episode and 40% (n = 4) had contralateral site involved compared to the first episode. These demographics were comparable to the studies by Baugh RF *et al.* [9] in 2013 and Chung DH *et al.* [10] in 2012 where authors have assessed subjects with comparable demographics and recurrence characteristics.

The study had found that 10 study subjects had reported with recurrence, the number of episodes assessed at recurrence were 2 episodes in 40% (n = 4) study subjects, 3 episodes in 10% (n = 1), 4 episodes in 10% (n = 1), 5 episodes in 10% (n = 1), 6 episodes in 10% (n = 1), and not known in 20% (n = 2) study subjects respectively. The study also assessed the interval between recurrence episodes, it was seen that time intervals of 1-2 years, 4-5 years, 6-7 years, and more than 10 years were seen in 60% (n = 6), 20% (n = 2), 10% (n = 1), and 10% (n = 1) study subjects respectively. These results agreed with the studies by Elias MK *et al.* [11] in 2013 and Feng S *et al.* [12] in 2014 where comparable episodes and comparable time intervals between episodes were reported by the authors in their respective studies.

Conclusion

Within its limitations, the present study concludes that there was a significant incidence of idiopathic facial paralysis in the present study which was more common in females and the first two years following the first episode. Hence, the study suggests

comprehensive follow-up of the subjects with idiopathic facial paralysis for a minimum of 2 years. However, the present study had a few limitations including small sample size, retrospective nature, and geographical area biases. Hence, more longitudinal studies with larger sample size and longer monitoring period will help reach a definitive conclusion.

References

1. McCaul JA, Cascarini L, Godden D, Coombes D, Brennan PA, Kerawala CJ. Evidence-based management of Bell's palsy. Br J Oral Maxillofac Surg 2014;52:387-91.
2. Chen N, Zhou M, He L, Zhou D, Li N. Acupuncture for Bell's palsy. Cochrane Database Syst Rev 2010;4:002914.
3. Tsai HS, Chang LY, Lu CY, Lee PI, Chen JM, Lee CY *et al*. Epidemiology and treatment of Bell's palsy in children in northern Taiwan. J Microbiol Immunol Infect 2009;42:351-6.
4. McNamara R, Doyle J, Mc Kay M, Keenan P, Babl FE. Medium-term outcome in Bell's palsy in children. Emerg Med J 2013;30:444-6.
5. Navarrete ML, Céspedes R, Mesa M, Grasa J, Pérez M, Raguer N *et al*. Recurrent Bell's facial palsy: our experience. Acta Otorrinolaringologica Espanola 2001;52:682-6.
6. Somasundara D, Sullivan F. Management of Bell's palsy. Aust Prescr 2017;40:94-7.
7. Tabarki B. Management of peripheral facial nerve palsy in children. Arch Pediatr 2014;21:1145-8.
8. Ismail AQ, Alake O, Kallappa C. See comment in PubMed Commons below Do Oral Steroids Aid Recovery in Children with Bell's Palsy? J Child Neurol 2014;29:96-7.
9. Baugh RF, Basura GJ, Ishii LE, Schwartz SR, Drumheller CM, Burkholder R *et al*. Clinical practice guideline: Bell's palsy. Otolaryngol Head Neck Surg 2013;149:1-27.
10. Chung DH, Park DC, Byun JY, Park MS, Lee SY, Yeo SG. Prognosis of patients with recurrent facial palsy. Eur Arch Otorhinolaryngol 2012;269:61-6.
11. Elias MK, Mateen FJ, Weiler CR. The Melkersson-Rosenthal syndrome: a retrospective study of biopsied cases. J Neurol 2013;260:138-43.
12. Feng S, Yin J, Li J, Song Z, Zhao G. Melkersson-Rosenthal syndrome: A retrospective study of 44 patients. Acta Otolaryngol 2014;134:977-81.