

Recurrent Bell's palsy; a single institutional experience

Hassan Ali Tahir*
Aso Sheikhbzeni**

Abstract

Background and objectives: Bell's palsy is the commonest disease of the facial nerve. The aim is to analyze several clinical and epidemiologic aspects of the recurrent Bell's palsy in Erbil city.

Methods: This cross-sectional study was conducted at outpatient's clinic from October 2019 to October 2020. Twenty five patients, who had developed a recurrent Bell's palsy, aged 17-70 years old, were consecutively enrolled. Neurological examination and lab tests were conducted.

Results: Out of 25 patients, 15 (60%) of them were female and 10 (40%) were male. 20 (80%) of patients with recurrent Bell's palsy the subsequent episodes were on the same side, and five (20%) of the episodes were contralateral to the primary one, of these five patients, four of them were female and one was male. 12 patients had history of hyperacusis, 10 of them reported in female and two in male with significant differences between both genders ($p < 0.029$). The high number of facial palsy related to the side of the face affected was found on the left side 13 (52%). The facial palsy was found to be more severe in females. Recurrence of Bell's palsy was more common in the first two years from the initial episode.

Conclusion: The study showed a significant recurrence of Bell's palsy more in the initial two years from the onset of the first attack. The recurrence was more likely to occur at the same side of the initial episode and it was the commonest in females and younger age group.

Key words: Bell's palsy, Erbil City, Recurrent facial palsy.

Introduction

Bell's palsy (idiopathic facial palsy) is a lower motor neuron facial paralysis which is characterized by acute onset of facial weakness.¹ It is the commonest cause of lower motor neuron facial paralysis with no identifiable cause.¹ It affects all age groups and occurs at all seasons of the year.² For some time, idiopathic facial palsy was considered to be a condition of adults only, but this theory has been proved to be wrong because facial palsy is encountered in children as well. This condition may be preceded by a pain behind ear for about one to two days before facial paralysis. However, several patients experienced a distortion of sound or hyperacusis in the ipsilateral ear and indicate paralysis of the stapedius muscle.

It is also known that the impairment of taste is present in some patients, but it is usually retained within the second week of paralysis.² Several authors reported that Bell's palsy is a vasculopathy in vasa nervorum of facial nerve by ischemic compression of the facial nerve within the tight facial canal.³ Other studies reported that the Bell's palsy may be caused by viral infection, but no conclusive evidence known yet.³ The life time risk of Bell's palsy is one in 60 and the rate of annual incidence of 10-40 in 100,000 people, 71% of untreated cases of Bell's palsy cured within a month and around 85% of them achieved near normal facial function.^{4,5} In around 29% of cases with Bell's palsy there is residual facial weakness, half of

*M.B.Ch.B. Candidate of KHCMS of Neurology, Ministry of Health, Erbil, Kurdistan Region, Iraq.
Email: hassansilivany@gmail.com

**M.B.Ch.B/F.R.C.P. (Ed.). Assistant professor in neurology, Ministry of Health, Erbil, Kurdistan Region, Iraq

these cases are severe and disfiguring. Regarding the treatment, the majority of patients managed with steroids in the initial week to 10 days after the beginning of facial paralysis, seemed to benefit from the treatment in randomized placebo-controlled trials.⁶ Steroids decrease the facial nerve edema in the tight facial canal. In addition, most evidence showed no benefit from antiviral agents in comparison with placebo in treating cases of Bell's palsy.⁷ There was no supporting evidence to signify any advantage or harm from

Patients and methods

This observational cross-sectional study was conducted at the neurology department of Rizgary teaching hospital, Erbil, Kurdistan Region, Iraq, from October 2019 to October 2020. During this period, 25 cases with recurrent Bell's palsy within the age range of 13-70 years old were recruited in the study. The patients were divided according to demographic characteristics such as age, gender, number of attacks, duration between the first and the subsequent episodes, side of affection, and treatment received. The inclusion criteria of this study were patients with two or more attacks of Bell's palsy. All patients with known cause of facial paralysis like (diabetes mellitus, trauma) or any other known cause of facial paralysis were excluded in this study. All patients were investigated random blood sugar level to exclude diabetic mononeuritis simplex. The severity of facial weakness was categorized into mild, moderate and severe. Mild facial weakness: Normal symmetry at rest, able to close lids with minimal effort, and able

Results

The demographic features of the patients with recurrent Bell's palsy are presented in Table (1). The total number of 25 patients with recurrent Bell's palsy aged between

physical therapy, but evidence with low quality supports that exercises of the facial muscles decrease the complications in acute cases.⁸ Several studies conducted in china suggested that acupuncture is helpful for recovery of Bell's palsy, but the sort of these studies was insufficient to allow any inference about the effectiveness of acupuncture.⁹ The aim of this present study is to analyze several clinical and epidemiologic aspects of patients with recurrent Bell's palsy.

to move mouth with maximal effort. Moderate facial weakness: Mild asymmetry at rest, able to close lids, and able to move mouth with maximal effort. Severe facial weakness: Obvious asymmetry at rest, no movement of brows, completely unable to close lids (positive Bell's phenomenon), and drop of mouth. Clinical neurological examination including affected side, laterality of recurrence, severity, and associated symptoms (hyperacusis and retro-auricular pain), were conducted in the present study. The study protocol and procedure were approved by the Kurdistan Higher Council of Medical Specialties, Erbil Kurdistan Region, Iraq. Written informed consent was obtained from the recruited participants. The results of this study were analyzed using the Graph Pad Prism software package, version 8. The results were expressed as simple frequency and percentages as appropriate. Comparisons were made using the Chi-Square (Fisher Exact Test). The results are considered significant if $p \leq 0.05$.

13 and 70 years old (mean 36.85 ± 16.49) were recruited in this study. Out of these, 15 (60%) were female and 10 (40%) were male.

Table (1): Distribution of recurrent facial palsy according to the gender and age group

Variables	Number of patients (n=25)	Frequency (%)
Gender		
Female	15	60
Male	10	40
Age group (year)		
<20	6	24
21-30	7	28
31-40	4	16
41-50	4	20
51-60	2	10
61-70	2	10

The number of recurrent Bell's palsy episodes related to the affected side of the face according to the gender is shown in Table (2). We found that 20 (80%) of the patients with recurrent palsy were affected on the same side, 11 (44%) of them were female and nine (36%) of them were male.

On the other hand, the numbers of recurrent on the contralateral side was five (20%); four of them were female and one was male. No significant differences were found between male and female in terms of the affected sides of the face Table (2).

Table (2): Number of facial palsy episodes related to the affected side of the face according to gender

The side of facial palsy recurrences	Gender (No. %)		Total (%)	*p-value
	Male	Female		
Number of recurrent on the same side	9 (36)	11 (44)	20 (80)	<0.313
Number of recurrent on the contralateral side	1 (4)	4 (29)	5 (20)	
Total	10 (40)	15 (73)	25(100)	

*p-value was determined by Chi-square test

Out of 25 patients, 19 of them had history of retroarticular pain, but there was no significant differences between male and female ($P<0.212$) Table (3). 12 patients had history of hyperacusis, 10 of them reported in female and two in male with significant differences between both gender ($p<0.029$) Table (3). Ten patients had history of taste abnormality, seven of

them in female and three in male but there was no male to female important association ($p<0.241$) Table (3). Surprisingly, only two patients were associated with hypertension and both of them in female with no significant differences between male and female ($p<0.35$) Table (3).

Table (3): Characteristics of facial palsy according to gender

Characteristics		Gender		p- value
		Male	Female	
History of retroarticular pain	Yes	7	12	<0.212
	No	3	3	
History of hyperacusis	Yes	2	10	$p< 0.029$
	No	8	5	
History of taste abnormalities	Yes	3	7	$p<0.341$
	No	7	8	
Comorbidity (Hypertension)	Yes	0	2	$p<0.35$
	No	10	13	

The high number of facial palsy episodes related to the side of the face affected was found on the left side 13 (52%), then right side 7 (28%) and only 5 (20%) of them

were affected from left to right. Our results also found that the facial palsy episodes are more severe in females than in males Figure (1).

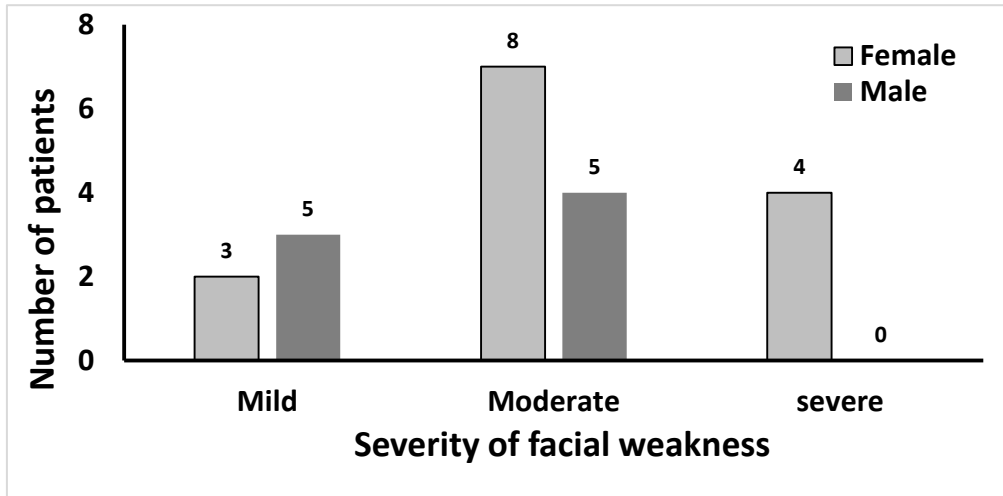


Figure (1): Distribution of severity of recurrent Bell's palsy according to gender

A significant outcome of this study was that the recurrences were mostly in the initial two years from the primary episode as shown in Figure (2). In 12 patients the recurrence occurred in the first two years. Seven of them had the next episode of Bell's palsy during the next three to four

years, and five patients had recurrence of the Bell palsy after more five years Figure (2). In terms of the number of episodes reported in the patients with Bell's palsy recurrence, 19 patients had two episodes, five patients had three, and one patient had four attacks of Bell's palsy.

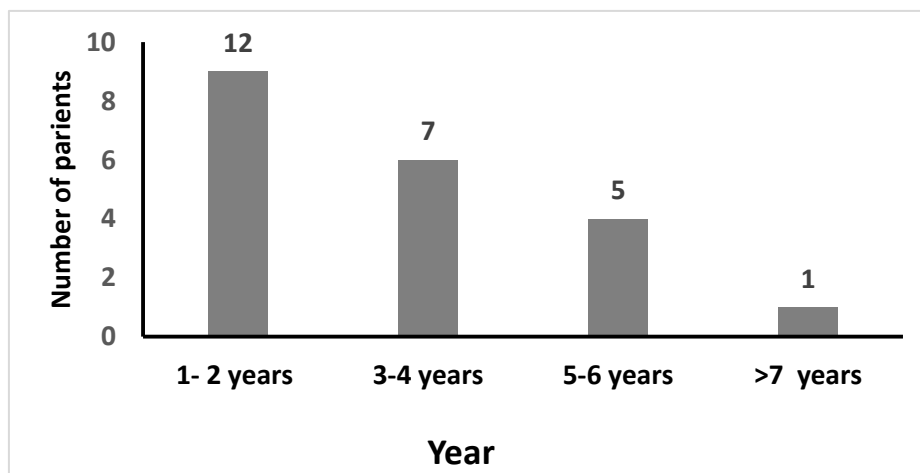


Figure (2): The duration between the first episode of Bell's palsy and the subsequent one

Discussion

Bell's palsy is the commonest cause of lower motor neuron facial paralysis, which is characterized by unilateral, acute, complete or partial paralysis of the facial nerve without any known cause (idiopathic).¹⁰ Not all cases presented with lower motor neuron facial palsy are Bell's

palsy, exclusion of other causes of facial palsy is of importance as they may need other management different from that is given to cases of Bell's palsy.¹¹ Several authors reported that Bell's palsy is a vasculopathy in vasa nervorum of the facial nerve, and some considered it as

viral origin, or edema within tight facial canal, and also associations with hypertension have been postulated.²² However, previous studies also confirmed that no conclusive evidence is found.³ Our results did not show significant correlation, only two of our patients were hypertensive. In about 70%-80% of the cases, the symptoms cured within the initial two months of onset, and in 20%-30% of the cases there is remnant of facial nerve dysfunction of different degree^{17,18} Many therapies have been tried, but only steroids administration in the first week to 10 days is helpful, steroids decrease the facial nerve edema in the facial canal.⁷ Our results are confirmed that steroids were helpful in the first 10 days of the attack. In addition, most evidence showed no benefit from antiviral agents in comparison with placebo in treating cases of Bell's palsy.⁷ There was no supporting evidence to signify any advantage or harm from physical therapy for the management of Bell's palsy,⁸ as we also found this in our patients. Previously, patients with enduring weakness of facial muscles were recommended for surgical decompression in three weeks from the onset, but on the bases of lacking of supporting data and the significant possibility for harms, currently the American academy of neurology does not advise surgical decompression in the management of patients with Bell's palsy.²² It is also known that the prognosis of recurrent Bell's palsy is more favorable in younger ages.¹² There is complete improvement of facial weakness in most children with Bell's palsy.⁴ Clinical trials have been done for idiopathic facial palsy; have seen some recurrences, contralateral or more commonly ipsilateral to the side affected in the primary episode. Some studies found that the recurrence incidence was more in younger patients, we found that the most common age group affected by recurrent Bell's palsy were patients aged between (21 and 30 years) with a fact that palsies that occur in the same side in relation to the first attack have poor

prognosis.¹³ On the contrary, other studies did not find differences in terms of prognosis between ipsilateral or contralateral side to the primary episode.¹⁴ Bell's palsy has the same male to female ratio. However, several studies suggested that there is a slightly female predominance.¹⁸ We also found this in our study, 60% were female and 40% were male. There are also familial cases of recurrent Bell's palsy, indeed, several studies linked a certain human leukocyte antigen (HLAs) with the facial palsy, though there is no confirmation of these findings by other studies.^{15,16} Our results also did not find any familial cases among our patients. There are a number of reports published in relation of recurrence Bell's palsy with pregnancy, but none of our patients were pregnant, and therefore there is no certain association between them.¹⁹ In the present study, we have noticed that most recurrences of Bell's palsy appear in the first two years from the onset of disease, and most of them were in the younger age groups. Reported cases of recurrent Bell's palsy suggested that there is a coincidental findings that the patient's with left sided Bell's palsy were more prone to recurrence; this is also consistence with our findings. In addition, there is an approximately similar frequency of affection on either side as detected by literatures.²⁰ Blood testing is usually not indicated in patients with Bell's palsy. However, because in more than 10 % of patients with facial palsy the cause is diabetes mellitus (mononeuritis simplex), blood glucose level or HbA1C may be carried out in patients with lower motor neuron facial palsy.²¹ We hope this study will help clinicians to treat Bell's palsy by knowing that recurrence is about 8%, and also to urge them to search for methods of preventing recurrences. The limitation of the present study is the small sample size collection and this was due to the impact of COVID-19 and lockdown of the city during this pandemic.

Conclusion

It can be concluded that the recurrence of Bell's palsy is more common in the initial two years from the onset of primary attack. Recurrent Bell's palsy was more common in females and in younger age groups than in males or older age groups. The recurrence is more common in ipsilateral side of the initial attack than in

contralateral one, and this due to edema within the tight facial canal. Most patients with recurrent Bell's palsy were left with mild to moderate degree of facial weakness. Recurrent Bell's palsy is of no identifiable cause (idiopathic) and need more controlled studies.

Conflicts of interest

The author reports no conflicts of interest.

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