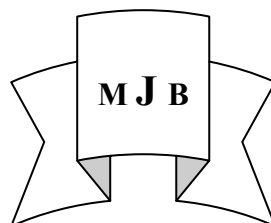


Various Methods for Treatment of Bell's Palsy

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Abstract

Forty - five patients with Bell's palsy attending the Department of Physical Medicine and Rehabilitation in Baghdad Teaching Hospital

These patients were divided into three groups :

The first group consisted of 15 patients and were treated with steroid (20 mg prednisolone /day for the first 10 days) and physiotherapy (galvanic stimulation , Facial exercises and massage). The second group consisted of 15 patients and were treated by steroid only (20 mg prednisolone /day for the first 10 days). The third group consisted of an other 15 patients who were treated by physiotherapy only in the from of galvanic stimulation , facial exercises and facial message.

All these groups were re- examined after 2 weeks , 1 month and 2 months and their responses to the treatment assessed clinically according to House-Breckmann grading system.

The responses to the treatment were more evident in the first group than the second group and followed by third group.

الخلاصة

شمل البحث خمسة وأربعين مريضاً مصاباً بشلل الوجه (شلل بيل) ، ممن عولجوا في وحدة أمراض المفاصل و التأهيل الطبي في مستشفى بغداد التعليمي لفترة سنة واحدة ، وقد تم تقسيم المرضى إلى ثلاث مجاميع:

ضمت المجموعة الأولى خمسة عشر مريضاً عولجوا بمركبات الستيرويد (بريدنيزولون) مع العلاج الطبيعي. ضمت المجموعة الثانية خمسة عشر مريضاً عولجوا بمركبات الستيرويد (بريدنيزولون) فقط. أما المجموعة الثالثة فقد ضمت خمسة عشر مريضاً تمت معالجتهم بالعلاج الطبيعي فقط. وتمت متابعة وإعادة فحص كل المجاميع على فترة أسبوعين، شهر و شهرين، وتم تقييم استجاباتهم للعلاج وفقاً لنظام هاوس - براكمان.

كانت الاستجابة للعلاج أسرع و أكثر وضوحاً في المجموعة الأولى تليها المجموعة الثانية ثم المجموعة الثالثة.

Introduction

The Facial Nerve

Anatomy and Physiology

The facial nerve has a motor root and a sensory root (nervus intermedius). The nerve leaves the lateral end of the junction of pons and medulla. The roots pass laterally in the posterior cranial fossa with the vestibulocochlear nerve and enter the internal acoustic meatus. It is also accompanied by fibers which stimulate the salivary gland secretion and other

which convey taste impulses from the anterior two-thirds of the tongue[1].

The nucleus of the facial nerve is situated in the ventral part of the pons. Its fibers pass backward to emerge from the lateral aspect of the lower border of the pons medial to the eighth nerves from which the seventh is separated by pars intermedia.

The facial nerve crosses the posterior fossa to enter the petrous portion of the temporal bone where it occupies the aque ductus fallopii or facial canal. Within the bone it turns

first outwards then backwards and then downwards to emerge from the skull at the stylomastoid foramen. Within the facial canal the nerve gives off a branch to the stapedius muscle and after emerging from the stylomastoid foramen it gives off a branch to the stylohyoid muscle, to the occipital belly of the digastic and the occipital belly of the occipitofrontalis then it divides within the parotid gland into a number of branches which innervate the muscles of the expression including the buccinator and platysma.

Bell's Palsy

Bell's facial paralysis named after Sir Charles Bell (1774-1842), is a facial paralysis of acute onset attributed to non-suppurative inflammation of the facial nerve within the stylomastoid foramen[2]. regarded as a benign neurological disorder and its almost always unilateral mono neuritis[4]. It may occur at any age[5], but appears to be most common in young adult males than females. The causes are unknown sometime attributed to exposure to draught and may follow infection of nasopharynx in small proportion of cases. It has been proved to be due to the virus of Herpes zoster [2,4,6] but in most cases no cause is discoverable.

Current hypotheses concerning pathogenesis assume an ischemic process. The primary ischemic theory postulates dysfunction of autonomic nervous system producing arteriolar spasm and thrombosis of the vessel supplying the nerve within the rigid bony fallopian canal [7,8].

The secondary ischemia hypothesis[9] attempts to relate a primary inflammatory (viral) [10] or immunological) edema to subsequent disturbances of microcirculation, leading to loss of nerve conductivity

Types of Facial Paralysis

The following varieties are recognized:

1- A supranuclear or upper motor neuron lesion involves the pyramidal fibers concerned with voluntary facial movements. The movements of the lower part of the face is affected more severely than those of the upper.

2- Supranuclear lesion involving the fibers concerned with emotional movement of the face leading to mimic paralysis, rarely occurs and is in frontal lobe lesion

3-Lesions involving the lower motor neurons in the nucleus, or facial nerve. These lesions destroy the common pathway and are likely to affect, to equal extent, both voluntary and emotional movements and as a rule the upper and lower facial muscles are equally weakened. A lower motor neuron lesion, whether nuclear or infranuclear, causes atrophy of facial muscles. Supranuclear lesions do not produce atrophy[2,3].

4- Disorders of facial muscles:

Such as myasthenia gravis, facioscapulo humeral muscular dystrophy and dystrophia myotonica.

The lesion is bilateral and involves both upper and lower facial muscles.

Patients and Methods

Forty – five patients with bell's palsy attended the Physical Medicine and Rehabilitation Department in Baghdad Teaching Hospital. These patients were studied within one year.

Complete history was taken from all patients, and physical examination including a thorough cranial nerves examination also done for all patients.

The patients were also sent for ENT examination to exclude ENT problems.

The vast majority of the patients were seen within 5-7 days after the onset of paralysis.

These patients were divided into three groups each group consisted of fifteen patients.

The first group (15 patients) was treated by prednisolone and physiotherapy and treatment started at the time of diagnosis[11,12]; prednisolone was given in a dose of 20mg/day for the first ten days and tapered as follow:

- a- The first three days: 1 tab (5mg) x 4
- b- The second three days: 1 tab. (5 mg) x3
- c- The third three days : 1 tab. (5 mg) x 2
- d- The tenth day : 1 tab. (5mg) x 1

The physiotherapy treatment was given in the form of electrical stimulation (galvanic current [13,14]) for muscles re- education and exercises and massage [6,14] to the affected side, and this treatment was done every other day until patients recovery.

The patients were re-assessed after 2 weeks, 1 month and 2 months [5].

The second group (15 patients) was treated by prednisolone only and regimen similar to that used in the first group, and they were assessed after 2 weeks, 1 month and 2 months. The third group (15 patients) was treated by physiotherapy only In the same regimen of physiotherapy used in the first group. They were re-assessed after 2 weeks,1 month and 2 months.

EMG study was done for six patients only because of the limitation of facilities, two of these patients showed severe denervation and the other four showed partial denervation.

Results

Table 1 shows that most of the patients attended directly the rehabilitation unit, while the others were referred from general practioners, ENT clinic, medical units and neurosurgeon.

Table No. 2 : shows that most of the patients were at the age group 20-30 years, and the total number of patients were 25 male and 20 patients were females. Patients responses to the treatment were assessed clinically according to House-Brackmann grading system [16,17].

The first group (treated by steroid and physiotherapy) as shown in table No.3. two of the patients acquired G I after 2 weeks of treatment, six patients acquired G I after 1 month of treatment and twelve patients acquired G I after 2 months of treatment . One patient remained in each of grades II, III and V.

In the second group (on steroid treatment only). One patient acquired GI after 2 weeks of treatment, four patients acquired GI after 1 month and nine patients acquired G I after 2 months of treatment. The remaining patients; three were in GI two were in GIII and one was in GIV.

In the third group (on physiotherapy only):

Two patients acquired GI after 2 weeks of treatment and the same patients remained in GI after 1 month of treatment after 2 months of treatment seven patients acquired GI, four patients acquired GII, one patient acquired GIII and one patient acquired GIV.

Two patients remained in GV as they were at this grade at the start of treatment.

Table 1 Shows sources of referral of all patients

Referral	No. of patients
Rehabilitation Medicine	17
General Practitioner	13
ENT clinic	6
Medicine Unit	4
Neurosurgeon	5
Total No. of patients	45

Table 2 Shows the distribution of the Patients according to the age groups and sex

Age / years	No. of Patients	Sex	
		Male	Female
0- 9	4	1	3
10 -19	12	5	7
20 – 29	17	11	6
30 – 39	10	7	3
40 and above	2	1	1
Total No.	45	25	20

Table 3 Shows the responses and follow – up of all the groups of patients according to House – Brackmann grading system.

Patients Groups	House – Brackmann grading system					
	GI	GII	GIII	GIV	GV	GVI
The first group (treated by steroid and physiotherapy)						
Grading of patients at start of treatment		4	7	3	1	
Grading of patients after 2 weeks follow – up	2	5	5	2	1	
Grading of patients after 1 month follow – up	6	5	2	1	1	
Grading of patients after 2 months follow - up	12	1	1		1	
The second group (treated by steroid only)						
Grading of patients at start of treatment		3	6	4	2	
Grading of patients after 2 weeks follow – up	1	4	7	2	1	
Grading of patients after 1 month follow – up	4	5	4	1	1	
Grading of patients after 2 months follow – up	9	3	2	1		
The third group (treated by physiotherapy only)						
Grading of patients at start of treatment		3	8	2	2	
Grading of patients after 2 weeks follow – up	2	3	7	1	2	
Grading of patients after 1 month follow – up	2	6	4	1	2	
Grading of patients after 2 months follow – up	7	4	1	1	2	

Discussion

The study shows that the male (25 the patients) were affected more than female (20 patients), in contrast to Salavica K.K. study [4] which showed female predominance. Most of the patients were at the age group 20-30 years which is similar to the result of Brodie S.W [17] study.

Acquiring the disease during November and December 1995 with history of cold exposure was documented in 44.4% of the patients; this association was also mentioned in Richard G. *et al.* study[18]. Two hypertensive patients, one 74 year old male other 60 year old female were at grade V (House-Brackmann grading) and were treated by physiotherapy but did not show improvement after 2 months period of treatment a result which is similar to what Adour K.K *et al.* [11] stated in their study that old age and hypertension are negative risk factors influencing recovery of Bell's palsy.

Most of the patients (from all groups) 62.2 % showed complete recovery within 2 months period of the treatment[19]. This result was similar to Salavica K.K study[4] which showed that complete recovery occurs during this period.

Delay in recovery was more evident in the third group because those patients were not attending physiotherapy treatment at regular interval.

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