

Original Research Article

Late Clinical Observation of Peripheral Facial Palsy Treated with Physical Therapy

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Abstract: Unilateral peripheral facial nerve palsy may have a detectable cause (secondary facial nerve palsy) or may be idiopathic (primary) without an obvious cause (Bell's palsy). Peripheral facial nerve palsy is diagnosed upon the clinical presentation with weakness of all facial nerve branches, drooping of the brow, incomplete lid closure, drooping of the corner of the mouth, impaired closure of the mouth, dry eye, hyperacusis, impaired taste, or pain around the ear. The aim of our research was to assess the effect of physical therapy treatment and sequelae after palsy. We have made retrospective analyze of 10 patients for sequels, after 1-3 years of palsy and physical therapy treatment with House Brackmann facial nerve grading system. Results: the scale is showing III grade of deficit after palsy. Therapy, particularly of Bell's palsy, is controversial due to the lack of large, prospective, randomized, and controlled trials. In our medical system patients are treated with physical therapy. House Brackmann facial nerve grading system can be used like a protocol system for evaluation of treatment in patients with facial palsy.

Keywords: facial palsy, physical therapy, sequels.

INTRODUCTION

Unilateral peripheral facial nerve palsy may have a detectable cause (secondary facial nerve palsy) or may be idiopathic (primary) without an obvious cause (Bell's palsy) [1, 2]. Secondary facial nerve palsy is due to various causes and is generally less prevalent than Bell's palsy (25 vs. 75%). The etiology of Bell's palsy is unknown but viral infection, vascular ischemia, or autoimmune disease had been postulated as possible pathomechanisms [3]. Nerve palsy was most frequently associated with viral infections, borreliosis, or diabetes [4]. However, if Bell's palsy occurs together with a disorder, which also may cause secondary facial nerve palsy, it does not necessarily imply a causal relation. Bell's palsy disproportionately attacks pregnant women, patients who have diabetes, influenza, a cold, some other respiratory alignment, or have undergone tooth root extraction [5]. Bell's palsy is thus a diagnosis of exclusion [6]. Due to the lack of sufficiently powered studies, therapy of primary and secondary facial nerve palsies is controversially discussed, particularly if causes for a secondary facial nerve palsy coexist with Bell's palsy or if multiple causes of a secondary facial nerve palsy coexist in case of a secondary facial nerve palsy. To clinically assess the severity of peripheral facial nerve palsy various scoring systems are available.

The most widely applied is the House-Brackmann facial nerve grading system (HBS) [7, 8].

Peripheral facial nerve palsy is diagnosed upon the clinical presentation with weakness of all facial nerve branches, drooping of the brow, incomplete lid closure, drooping of the corner of the mouth, impaired closure of the mouth, dry eye, hyperacusis, impaired taste, or pain around the ear. Bell's phenomenon (upward diversion of the bulb on attempted closure of the lid) occurs if the eye closure is incomplete [9].

Therapy, particularly of Bell's palsy, is controversial due to the lack of large, prospective, randomized, and controlled trials [9]. Main goals of treatment are to speed up recovery, to make recovery more successful, to prevent corneal complications and other sequelae, and to inhibit viral replication [8]. Psychological support is also essential. Patients require regular follow-ups. Therapy of secondary facial nerve palsy aims to omit the particular cause of the palsy. Patients with Bell's palsy should be referred to a specialist and treatment should start as soon after onset as possible [9]. Treatment may be subdivided into acute measures and measures to treat moderate or severe sequelae.

In our medical system is usually to apply physical therapy procedures like iontophoresis, interferential current, low level laser therapy, exponential current, massage and exercises in front of the mirror. The patients are coming at physical therapy department in subacute stage from other specialist support with medication.

The aim of our research was to assess the effect of physical therapy treatment and sequelae after palsy.

MATERIAL AND METHOD

We have made one retrospective analyze of data and sequel after 1-3 years of facial palsy and treatment with physical therapy. The total number of 10 patients was analyzed who had been treated in physical therapy department. The scoring of sequel was done with House-Brackmann facial nerve grading system. The data of patients was analyzed by sex, age, type of physical therapy procedures and time of first treatment. The sequels were grading with system showed in table 1.

Table 1: System of grading facial palsy deficiency

Grade	Description	Measurement	Function %	Estimated function %
I	Normal	8/8	100	100
II	Slight	7/8	76-99	80
III	Moderate	5/8-6/8	51-75	60
IV	Moderately severe	3/8-4/8	26-50	40
V	Severe	1/8-2/8	1-25	20
VI	Total	0/8	0	0

RESULTS

The personal data of patients is the following: 80% were male with age of 20-40 years. The comorbidity was founded in 4 (1 diabetic, 2 hypertension, 1 palsy episode before). The etiology by all was idiopathic, concluded from the medical documentation. The frequentation of treatment was 10% (10-20 days), 40% (21-30days) and 50%(31-40days). The analysis of physical therapy treatment is showed in table 2.

We can see from table 2 that the most used therapy is electro therapy as well as massage and facial gymnastic. The assessment of residual consequences after facial palsy with House-Brackmann facial nerve grading system is showed in table 3.

From total score of deficit 140 points, there are 11 points or 7.8%. In table 4 is represented assessment of facial muscles function.

Assessment of facial muscles function is showing 14 points or 14%. Table 5 shows the sensitivity deficit in treated patients.

The maximal score for sensitive deficit is 30 points and we have founded 3 cases in our group or 10%. The total assessment of efficiency of treatment and sequels after one-three years is showed in table 6, and figure 1.

Table 2: Application of physical therapy modalities

PhTh n=3, 2011year		Patients	%
Electro therapy		3	100
LightTh	Infrared	3	100
	Polarization light	/	/
Massage		3	100
Facial gymnastic		3	100
PhTh n=3, 2012year		Patients	
Electro therapy		3	100
Light Th	Infrared	2	66
	Polarization light	1	33
Massage		3	100
Facial gymnastic		3	100
PhTh n=4, 2013year		Patients	%
Electro therapy		4	100
Light Th	Infrared	1	25
	Polarization light	2	50
Massage		4	100
Facial gymnastic		4	100

Table 3: Assessment of sequels

Sequels	Frequentation	%
Facial asymmetry	2	27
Synkinesis		
Lacrimation	1	9
Otorrhea		
Otolgia		
Tinnitus		
Bell's phenomenon		
Parestesis	4	36
Headache	2	13
Vertigo		
Hypoacusic	1	9
Salivation		
Vision change		
Tasting change		

Table 4: Assessment of facial muscles function

Muscles function	M. Frontalis	M. Corrugator	M. Orbitalis Oculi	M. Procerus	M. Dilator Nasalis	M. Risorius	M. Zygomaticusmajos	M. Orbicularis Oris	M. Levatorlabisuperioris	M. Levatorangulioris
Toatal			3		2	1	2	3	1	2
%			21%		14%	7%	14%	21%	7%	14%

Table 5: Assessment of sensitive deficit

	Abnormal sensation	Temperature sensibility	Abnormal feelings
Frequentation	2	1	/
Total	2	1	/
%	20%	10%	

Table 6: Total score of functional deficit

Type of deficit	%
1.Assessment of sequels	8
2.Facial Muscles function	14
3.Assessment of sensitivity	10
Total	31.8

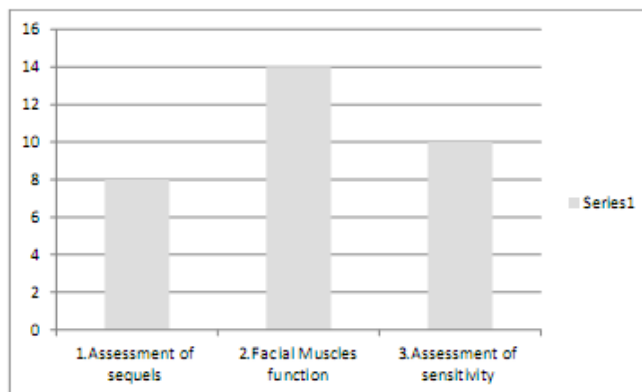


Fig-1: Total score of function

The total functional deficit is 32%, or patients have 68% of facial nerve function and it is grade III.

DISCUSSION

Therapy, particularly in Bell's palsy, is controversial due to the lack of large, prospective, randomized, and controlled trials [9]. Main goals of treatment are to speed up recovery, to make recovery more successful, to prevent corneal complications and other sequelae, and to inhibit viral replication [8]. Patients require regular follow-ups. Therapy of secondary facial nerve palsy aims to omit the particular cause of the palsy. Patients with Bell's palsy should be referred to a specialist and treatment should start as soon after onset as possible [9]. Treatment may be subdivided into acute measures and measures to treat moderate or severe sequelae.

There are only few controlled trials available on the effectiveness of physical therapy for facial palsies [9]. In a randomized trial on 50 patients with Bell's palsy and a mean HBS of IV, mime therapy, including automassage, relaxation exercises, inhibition of synkinesis, coordination exercises, or emotional expression exercises, resulted in improvement of facial stiffness, lip motility, and the physical and social indices of the facial disability index [10]. Patients with remaining symptoms from Bell's palsy appear to experience positive effects from physiotherapy [11] and biofeedback training [12]. In a controlled study on 24 patients with Bell's palsy, neuromuscular retraining exercises were effective in improving facial movements [13, 14].

In our medical system is usual to apply electrotherapy modalities for treatment of facial nerve paralysis. Electrotherapy modalities can be used as an adjunct therapy [15, 16]. The electrotherapy modalities reviewed included: electrical stimulation (ES), iontophoresis with vitamins, and interferential current. We are also applying light therapy (infrared, polarization light and laser). Electrotherapy is still lacking evidence due to inappropriate research methodology, small sample size, inadequate treatment parameter, inconsistent follow up. From those reasons our research was to access the sequels. Particularly, in patients with poor outcome and chronic facial nerve damage long-term electrical stimulation may be beneficial [16, 17].

Massage can be performed in conjunction with other treatment options. It can be done to improve perceptual awareness. Though only limited experience has been reported with acupuncture for Bell's palsy [8] several studies provide increasing evidence for a beneficial effect of acupuncture and moxibustion as an adjunctive treatment of Bell's palsy [18-20].

Electro-acupuncture achieves the significant efficacy on peripheral facial palsy, better than the conventional EA [20].

An improvement by 40, 30, or less than 10% was reported in 5, 4, and 8 patients respectively. The beneficial effect was explained by facilitation of re-innervation through electrical stimulation [20]. The population of analyzed patients is usual small, and that is because there are no standardized protocols for treatment. We have a small example for assessment too, but our aim was to involve this tool in usual practice for physical therapy treatment [21].

House-Brackmann scale is useful tool for evaluation of condition with or without physical therapy treatment. We have used it in access of sequels after physical therapy treatment, because it is not usual to use in physical therapy practice from our medical staff. It is showing us the condition of facial palsy in each patient without EMG, and it is very practical for physiotherapist assessment for effects of work [8].

CONCLUSION

Patients developing Bell's palsy should be seen by a neurologist, oto-rhino-laryngologist, and ophthalmologist with the least possible latency after onset of the palsy, and after that in subacute stage to be treated with physical therapy modalities. The sequels can however follow many years after that, and House-Brackmann scale is an easy method to access them. It can be used in physical therapy treatment to evaluate effects of it. The treatment with acupuncture can be analyze in the future too in TMC at Medical faculty.

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