

ACUPUNCTURE TREATMENT IN FACIAL PALSY – CLINICAL OBSERVATIONS

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SUMMARY – Acupuncture points are believed to stimulate the release of chemicals from the central nervous system (the brain and spinal cord) into the muscles, spinal cord and brain. The aim of the study was to present acupuncture treatment in peripheral facial paresis. A total of 176 patients with peripheral facial palsy were divided into two groups: 128 patients treated with acupuncture and 48 patients treated with conservative therapy. The choice of acupuncture points, their number and power of electromagnetic stimuli depended on clinical features exhibited by the patients. Study results indicated acupuncture therapy to be associated with a shorter duration of treatment and higher percentage of full recovery as compared with medicamentous plus physical therapy.

Key words: *Acupuncture – therapy; Bell palsy – therapy; Complementary therapies – utilization; Electroacupuncture – therapy*

History

Acupuncture is just one of the elements that make up the discipline often referred to as Traditional Chinese Medicine. Traditional Chinese Medicine is a combination of physical, mental and spiritual practices that include techniques such as massage therapy and acupuncture, along with herbal medicine, and various forms of mind-body exercise¹.

The earliest known source of information on acupuncture is a text called the *Huang Di Nei Jing*, or Yellow Emperor's Inner Classic, which is believed to have originated as early as the second century BC. The *Nei Jing* regarded the human body as a miniature representation of the universe as a whole and taught that a state of health could be achieved by balancing the body's internal environment with the external environment of the entire universe¹.

The earliest European reports about acupuncture came from Jesuit missionaries in the 16th and 17th centuries. In fact, French Jesuits coined the word 'acupuncture' from the Latin *acus* (needle) and *punctura* (puncture). Although it has been widely believed that this represented the earliest European introduction to acupuncture, acupuncture may have actually been a practice familiar to ancient Europeans. The mummified remains of the so-called Austrian Iceman, who has come to be known as Ötzi, were found in the Italian Alps in 1991. The mummy is believed to be over 5,000 years old. A series of tattoos were discovered on Ötzi's body, which corresponded to the locations of traditional acupuncture points still in use today. It has been suggested that these ancient Europeans might have been aware of the practice of acupuncture earlier than had previously been thought².

In the United States, accounts of acupuncture began to appear in the medical literature in the mid-1800s. In fact, Sir William Osler included a section on the use of acupuncture for the treatment of "lumbago and sciatica" in his respected textbook *The Principles and Practice of Medicine* from 1892 through its final edition in 1947. The

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1901 edition of Gray's Anatomy included this statement: "The sciatic nerve has been acupunctured for the relief of sciatica."³

Introduction

Several processes have been proposed to explain the effects of acupuncture. Acupuncture points are believed to stimulate the central nervous system (the brain and spinal cord) to release chemicals into the muscles, spinal cord and brain. The biochemical changes may stimulate the body's natural healing abilities and promote physical and emotional well-being⁴. There are three main mechanisms^{5,6}:

- 1. Conduction of electromagnetic signals.** Western scientists have found evidence that acupuncture points are strategic conductors of electromagnetic signals. Stimulating points along these pathways through acupuncture enables electromagnetic signals to be relayed at a greater rate than under normal conditions.
- 2. Activation of opioid systems.** Research has shown that several types of opioids may be released into the central nervous system during acupuncture treatment.
- 3. Changes in brain chemistry, sensation, and involuntary body functions.** Studies have shown that acupuncture may alter brain chemistry by changing the release of neurotransmitters and neurohormones. Acupuncture has also been documented to affect the parts of the central nervous system related to sensation and involuntary body functions such as immune reactions and processes whereby the person's blood pressure, blood flow and body temperature are regulated.

Promising results have emerged, for example, showing efficacy of acupuncture in adult postoperative and chemotherapy nausea and vomiting, and in postoperative dental pain. There are other situations such as addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma, in which acupuncture may be useful as an adjunct treatment or an acceptable alternative, or be included in a comprehensive management program⁷.

The purpose of our study was to demonstrate the acupuncture treatment in case of peripheral facial paresis.

Patients and Methods

A total of 176 patients with peripheral facial palsy were treated at University Department of Psychiatry, Mostar

University Hospital, during the period from November 1989 till January 2001. During the war period (1992-1995), they were treated at Private Outpatient Clinic for Acupuncture in Široki Brijeg. The patients were divided into two groups: 128 patients treated with acupuncture and 48 patients treated with drug therapy who were not treated with acupuncture because of either 'needle fear', hypersensitivity to pain, local skin infection (such as acne), or were living too far from the hospital. These 48 patients were treated with medicamentous and physical therapy. Patient age and sex distribution is shown in Table 1.

Table 1. Patient distribution according to age and sex

Age (yrs)	Female, n (%)	Male, n (%)	Total, n (%)
12-14	7 (4)	2 (1)	9 (5)
15-19	33(19)	11 (6)	44 (25)
20-29	30(17)	21(12)	51 (29)
30-39	24(14)	18(10)	42 (24)
40-60	13 (7)	7 (4)	20 (11)
>60	7 (4)	3 (2)	10 (6)
Total	114 (65)	62(35)	176(100)

Before starting the treatment, all patients were examined by a neurologist, ENT (ear, nose and throat) specialist, and ophthalmologist. If indicated, additional neuroimaging and electrophysiologic testing was done. All patients underwent basic laboratory testing.

The degree of facial paralysis was estimated according to clinical features as follows:

A. Severe degree of facial paralysis:

- complete paralysis of all muscles of facial expression on the affected side
- heavy retroauricular pain
- unfurrowed forehead
- Bell's phenomenon, lagophthalmos, epiphora
- depressed nasolabial fold, drooped mouth corner, drinking difficulties
- loss of taste in the anterior two-thirds of the tongue
- after-treatment sequel

B. Moderate degree of facial paralysis:

- unfurrowed or incompletely furrowed forehead
- incomplete closure of the eyelids (Bell's phenomenon or epiphora)
- shallow nasolabial fold, drooped mouth corner, difficulties in whistling and consonant pronunciation

C. Mild degree of facial paralysis:

- difficulties in furrowing the forehead
- incomplete eyelid closure or closure with effort
- shallow nasolabial fold
- falling behind the corner of the mouth on the affected side when smiling

Table 2. Questionnaire

1. Name
2. Date of birth
3. Sex
4. Married/Single
5. Address and phone number
6. Occupation
7. When and how did the disease begin? (symptoms, possible cause, family history)
8. Pain in the ear region? YES/NO
9. ENT examination and neurologic examination? YES/NO
10. Additional tests? YES/NO
11. Did you take any medication before the initiation of acupuncture treatment? YES/NO
12. When did the acupuncture treatment start?
13. How many acupuncture treatments did you receive?
14. Was electrostimulation applied? YES/NO
15. Treatment results:
a. complete recovery
b. remarkable improvement
c. no change
d. worsening

The main criterion for the estimation of treatment success was the disappearance of symptoms. Treatment results were estimated by both the patient and the physician filling a questionnaire shown in Table 2. Enclosed there was a list of tests results.

The choice of acupuncture points, their number and power of electromagnetic stimulus depended on clinical features. For electrostimulation we used the Electronic Acupuncture Model WQ-IOC-2 made in China (power 60 A; voltage 9 V; efferent impulse frequency f1 (0-100 c/s), f2 (0-1000 c/s)). Local acupuncture points were stimulated as follows:

- mild stimulation 1-5 mA (intensity scale 0-1)
- medium stimulation 5-10 mA (intensity scale 1-2)

Table 3. Timing of therapy initiation following onset of symptoms

Therapy initiation (days)	No. of patients (%)
< 5	20 (11)
5-9	35 (20)
10-14	58 (33)
15-30	39 (22)
> 30	24 (14)
Total	176(100)

Low efferent wave frequencies (30-40 c/s) were used.

The patients treated with conservative therapy received corticosteroids according to the following protocol: prednisolone 16 mg/2 days, 8 mg/2 days, 4 mg/1 day, 2 mg/1 day and 1 mg/1 day *per os*; or prednisone 5 mg/6 times *per day*/3 days, 5 mg/4 times *per day*/2 days, 5 mg/2 times *per day*/2 days and 5 mg/1 time *per day*/1 day *per os*. The patients were coadministered B-vitamins *per os* and pentoxifylline 400 mg/2 times *per day per os*, along with physical therapy for 14-21 days.

Results

Out of 176 patients, there were 62 (35%) males and 114 (65%) females. The majority of patients were aged 20-40 (Table 1). The timing of therapy initiation after the onset of symptoms is shown in Table 3. In most patients therapy was initiated 10 to 30 days of the symptom onset. The degree of facial paralysis is presented in Table 4. Almost two-thirds of study patients (64%) had moderate facial palsy. Table 5 shows number of acupuncture treatments and number of patients undergoing these treatments, indicating that 10 to 24 sessions were most commonly required (in 64% of patients).

Concerning intensity of electrostimulation, 74 (57%) patients received mild and 47 (37%) patients medium electrostimulation. Electrostimulation during acupuncture was not applied in seven patients (five pregnant women

Table 4. Clinical degree of facial paresis

Clinical degree	No. of patients	%
Mild facial paresis	42	23
Moderate facial paresis	113	64
Severe facial paresis	21	13
Total	176	100

Table 5. Number of acupuncture sessions

No. of sessions	No. of patients (%)
5-6	11 (8)
7-9	21 (16)
10-14	56 (44)
15-24	26 (20)
≥25	14 (11)
Total	128 (100)

and two patients who presented with signs of hypersensitivity to electrostimulation). The duration of treatment was between 21 and 45 days in the acupuncture group, and from 30 to 90 days in the conservative treatment group. Table 6 shows treatment outcome. Complete recovery was achieved by the majority of patients from both groups, however, the percentage of full recovery was higher in the group treated with acupuncture.

Discussion

Bell's palsy is the most common disease of the facial nerve. It is presumably due to an inflammatory reaction in or around the facial nerve near the stylomastoid foramen. According to Liu, when acupuncture was initiated within three days of onset in 684 cases of facial nerve paralysis, a hundred percent of patients were cured or there was marked improvement⁸. Other studies showed that 80% of cases treated at more than 2 months of onset and 83% of severe cases were cured or experienced excellent effects⁹. The treatment may include numerous diagnostic procedures, different classes of medications, lifestyle modifications, etc., however, with invariably continuing suffering. Acupuncture may often lead to significant clinical improvement¹⁰.

According to our findings, the majority of patients with peripheral facial palsy treated with acupuncture were in the 20-40 age group. All but nine patients experienced

complete recovery. Our findings showed that acupuncture treatment achieved a higher percentage of complete recovery as compared with medicamentous therapy. Also, the patients from the acupuncture group had to be treated for a shorter period of time than those from the drug therapy group.

Our experience showed acupuncture to be safe and beneficial in patients with peripheral facial palsy. Acupuncture has relatively few, if any, side effects. The most common side effect of acupuncture is the feeling of deep relaxation and an increased feeling of well-being. As with any puncture, mild discoloration may occasionally occur at the site of acupuncture, which is transient and harmless. Although adverse effects may occur if acupuncture is inappropriately performed, only ten cases of internal injuries from acupuncture have been reported in the United States from 1965 till 1997¹¹. Acupuncture as a therapeutic intervention has been widely practiced worldwide¹²⁻¹⁸.

In post-stroke patients, acupuncture stimulation appears to activate perilesional or use-dependent reorganized sites and might be a way of looking at brain reorganization.

While there have been many studies of its potential usefulness, many of these studies provide equivocal results because of variable design, sample size, and other factors. The issue is further complicated by inherent difficulties in the use of appropriate controls such as placebo, and sham acupuncture groups. Additional research is likely to uncover new areas where acupuncture interventions may prove useful. We believe that additional randomized, controlled, clinical trials are needed to evaluate the role of acupuncture, its safety and efficacy in the management of peripheral facial palsy as well as to standardize acupuncture therapy.

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Table 6. Therapeutic results

Outcome	Acupuncture, n (%)	Conservative therapy, n (%)
Worsened	0	0
Unchanged	0	0
Improved	4 (3)	5 (10)
Full recovery	124 (97)	43 (90)
Total	128 (100)	48 (100)

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Sažetak

LIJEČENJE SLABOSTI LIČNOGA ŽIVCA AKUPUNKTUROM

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Smatra se kako akupunkturne točke potiču otpuštanje kemijskih tvari iz središnjeg živčanog sustava (mozak i leđna moždina) u mišiće, leđnu moždinu i različita područja mozga. Cilj ovoga istraživanja bio je prikazati liječenje periferne slabosti ličnoga živca akupunkturom. Ukupno 176 bolesnika sa slabošću ličnoga živca podijeljeno je u dvije skupine: 128 bolesnika liječeno je akupunkturom, a 48 bolesnika konzervativnom terapijom. Izbor akupunkturnih točaka, kao i njihov broj i snaga elektromagnetskih podražaja ovisili su o kliničkoj slici. Rezultati liječenja akupunkturom pokazali su kraće vremensko razdoblje liječenja i veći postotak potpuno izliječenih bolesnika u usporedbi s liječenjem lijekovima i fizikalnom terapijom.

Ključne riječi: *Akupunktura – terapija; Bellova paraliza – terapija; Komplementarne terapije – primjena; Elektroakupunktura – terapija*