Clinical Study

Effect of heat-sensitive moxibustion on facial function score in patients with facial paralysis

热敏灸对面神经麻痹患者面神经功能症状积分的影响

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Abstract

Objective: To observe and compare the therapeutic efficacies of heat-sensitive moxibustion plus Western medication, dry Western medication, and acupuncture plus TDP in treating peripheral facial palsy (FP).

Methods: Ninety FP patients were randomized into a Western medication group, a heat-sensitive moxibustion group, and an acupuncture group by using sealed envelope, 30 cases in each group. The Western medication group was intervened by conventional Western medication; the heat-sensitive moxibustion group was by heat-sensitive moxibustion in addition to the same Western medication; the acupuncture group was by the Western medication plus acupuncture and TDP radiation. For the three groups, 6-day treatment was taken as a treatment course, with a 2-day interval between 2 courses, and totally 4 treatment courses were observed.

Results: After intervention, the modified Portmann scores were changed significantly in the three groups (P<0.05), and the improvements in the heat-sensitive moxibustion group and the acupuncture group were both superior to that in the Western medication group. The recovery plus markedly effective rate of the acupuncture group was significantly different from that of the Western medication group (P<0.05), and there was a significant difference in comparing the recovery plus markedly effective rate between the heat-sensitive moxibustion group and acupuncture group (P<0.05).

Conclusion: Heat-sensitive moxibustion is effective in treatment peripheral facial paralysis, and this method is free of pain, causing no adverse reactions, and worth promotion in clinic.

Keywords: Acupuncture Therapy; Moxibustion Therapy; Acupuncture-moxibustion Therapy; Heat-sensitive Moxibustion; Moxa Stick Moxibustion; Facial Paralysis

【摘要】目的:观察并比较热敏灸加西药、西药以及针刺加 TDP 治疗周围性面瘫的疗效。方法:将90 例周围性面瘫患者通过信封法随机分为西药组、热敏灸组和针刺组,每组 30 例。药物组接受常规西药治疗;热敏灸组在常规西药治疗基础上加用热敏灸治疗;针刺组接受常规西药、针刺及 TDP 红外线照射治疗。三组均治疗 6 d 为 1 个疗程,疗程间隔 2 d,共观察 4 个疗程。结果:治疗后三组改良 Portmann 评分治疗前后差值具有统计学差异(P<0.05),且热敏灸组及针刺组患者症状改善情况优于西药组。针刺组的愈显率与西药组有统计学差异(P<0.05),热敏灸组的愈显率与针刺组有统计学差异(P<0.05)。结论:热敏灸治疗周围性面瘫疗效确切,且无痛苦,无不良反应,值得临床应用推广。

【关键词】针刺疗法; 灸法; 针灸疗法; 热敏灸; 艾条灸; 面神经麻痹 【中图分类号】R245.8 【文献标志码】A

Peripheral facial palsy, or facial nerve paralysis, caused by nonbacterial inflammation, is a common disease encountered in acupuncture clinic. Its incidence rate approaches 20-42.5 per 100 000 people, and its prevalence rate is 258 in every 100 000 people^[1]. The major symptoms include unilateral facial weakness, numbness or even loss of facial function, disappearance of forehead wrinkles, difficulty closing the eye or incomplete eye closure, drooped mouth corner, shallower nasolobial groove, as well as failure to frown,

bulge cheek, and show teeth the affected side; pain behind the ear may precede the onset of other symptoms in some cases, possibly along with loss of taste on the front 2/3 of the tongue, and involuntary tearing^[2]. We adopted heat-sensitive moxibustion plus conventional Western medication to treat facial paralysis, and the report is now given as follows.

1 Clinical Materials

1.1 Diagnostic criteria

By referring the key points in diagnosing peripheral facial paralysis in *Neurology*^[3]: a history of pharyngeal infection or attracting cold in face, acute onset,

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numbness or palsy of unilateral or bilateral facial muscles, manifested by wry eye and mouth; shallower or disappeared forehead wrinkles, enlarged palpebral fissure, failure to close the eye, involuntary tearing, shallower or flat nasolobial groove, drooped mouth corner, difficulty frowning or bulging cheek, and food left stuck between cheek and teeth; facial palsy caused by polyneuritis after acute infection, or diseases of ears or cerebellopontine angle were excluded; craniocerebral CT scan or MRI examination showed normal.

1.2 Inclusion criteria

Conforming to the above diagnostic criteria and the inclusion criteria as follows: age between 10-70 years old and without predilection for gender; acute onset, and within 3 d after the attack; patients willing to take part in the clinical trial, with the informed consent form signed by the patient or the guardian.

1.3 Exclusion criteria

Central facial palsy, or peripheral facial palsy caused by other reasons such as polyneuritis due to cute infection, parotitis or parotid tumor, Hunt syndrome, and Guillian-Barre syndrome; women during pregnancy or breast-feeding, and patients of allergic constitution; those having received fire acupuncture or cupping ahead of the study; those receiving other treatments.

1.4 Statistical methods

The SPSS 13.0 version software was used for data analyses. The measurement data were expressed by mean± standard deviation ($\overline{x} \pm s$). The intra-group comparisons were performed by *t*-test; the inter-group comparisons were by Chi-square test; the comparison of clinical efficacy between two groups was also by Chi-square test, while the comparisons among three groups were by non-parametric test. Two-tailed test was applied to all the statistical tests, and *P*<0.05 was considered statistically significant.

1.5 General data

The subjects were recruited from our department, 39 were male and 51 were female; the age ranged from 12 to 70 years old, averaged at (32.6±9.4) years old; the onsets were all within 3 d.

By sealed envelope, the ninety patients were randomized into a Western medication group, a heat-sensitive moxibustion group, and an acupuncture group, 30 cases in each group. There were no significant differences in comparing the gender, age, and disease duration (P > 0.05), indicating the two groups was comparable (Table 1).

2 Treatment Methods

2.1 Western medication group

Patients were asked to take the following drugs from the first visiting day: Prednisone 20-30 mg/d, once a day, for successive 7 d; Pantoprazole Sodium Enteric-coated Tablets (Shenyang Dongyu Pharmaceutical Co., Ltd., China) 20 mg, twice a day; both for 7 d in total. Mecobalamin Tablets (Weicai China Pharmaceutical Co., Ltd., China) 0.5 mg, 3 times a day; Vitamin B_1 (Hubei Huazhong Pharmaceutical Company, China) 10 mg, 3 times a day; taken till fully recovery, but for 4 weeks at maximum.

Table 1. Comparison of general data

Group	n	Gender (case)		Average age	Average duration
		Male	Female	$(\overline{x} \pm s, \text{year})$	$(\overline{x} \pm s, d)$
WMG	30	12	18	31.3±9.5	2.1±1.0
HMG	30	14	17	32.5±8.9	2.3±0.9
AG	30	13	16	33.7±9.7	2.1±1.0

Note: WMG=Western medication group; HMG=Heat-sensitive moxibustion; AG=Acupuncture group

2.2 Heat-sensitive moxibustion group

In addition to the administration of the same Western medication, the heat-sensitive moxibustion group received heat-sensitive moxibustion treatment.

Heat-sensitive moxibustion: Mild moxibustion, with twirling and bird-pecking manipulations, was applied to the most possible heat-sensitive locations [such as Yifeng (TE 17), Xiaguan (ST 7), and Jiache (ST 6) on the affected side]. Occurrence of one of the following reactions indicated the heat sensitization: heat penetration; heat expansion; heat transfer; heat in distant area but not in local area; heat in deep area but not in superficial area; non-heat sensations including distention, numbness, and pain in the treated area or areas away from the treated area. When the heat-sensitized points were detected, the points would be given suspended moxibustion till the transferring phenomena were gone, which was taken as a dose of moxibustion^[4]. The treatment was given once a day.

2.3 Acupuncture group

The acupuncture group was intervened by acupuncture in addition to the same Western drugs given to the Western medication group based on the acupuncture protocol in the *Science of Acupuncture and Moxibustion*^[5].

Major points: Quanliao (SI 18), Yangbai (GB 14), Yifeng (TE 17), Jiache (ST 6), and Dicang (ST 4) on the affected side; Hegu (LI 4) on the healthy side.

Adjunct points: Shuigou (GV 26) was added for wry philtrum; Fengchi (GB 20) for contracting wind-cold; Yingxiang (LI 20) for shallower nasolobial groove.

Method: After standard sterilization for the points, filiform needles of 0.25 mm in diameter and 40 mm in length were used to puncture the facial acupoints, with moderate reinforcing-reducing method applied after needling qi arrived. For those in acute stage (onset within 7 d), deep insertion, too many acupoints selected, and intense needling manipulation were improper.

When distant limb points were treated, strong reducing manipulations were applied after needling qi arrived. While the needles were retained, TDP radiation was used for the affected side of face for 30 min, during which, the affected eye was covered by a piece of sterilized cotton if it couldn't close properly. The needles were removed after 30 min, and the treatment was given once a day.

For the heat-sensitive moxibustion group and acupuncture group, 6-day treatment was taken as a treatment course, with a 2-day interval between 2 courses, and totally 4 courses were observed.

3 Observation of Results

3.1 Observation items

The modified Portmann scale was adopted to compare the two sides of face in performing 6 movements: raising eyebrow, opening nostrils, closing eyes, bulging cheeks, showing teeth, and pouting mouth. The decreased movement degree on the affected side was recorded: 3 points as the full score, no movement scored 0, discernible decreased movement scored 1, slight decrease of movement scored 2, and normal movement score 3. For the above 6 movements, the total score would be 18 maximum. Besides, static facial function was also evaluated: normal scored 2, slight asymmetry scored 1, and discernible asymmetry scored 0. Therefore, the global score of the modified Portmann scale was 20 points, the lower the point, the severer the condition.

3.2 Criteria of therapeutic efficacy

The criteria of therapeutic efficacy were made according to the modified Portmann scores^[6].

Recovery: The modified Portmann scale scored 20 points after intervention.

Markedly effective: The modified Portmann scale scored 17-19 points after intervention.

Improvement: The modified Portamann scale scored 14-16 points after intervention.

Invalid: The modified Portmann scale scored \leq 13 points after intervention.

3.3 Results

3.3.1 Symptom score

After intervention, the symptom scores were changed significantly in the three groups (P<0.05); the modified Portmann scores were also changed significantly in the three groups after treatment (P<0.05), and the improvements in the heat-sensitive moxibustion group and acupuncture group were both more significant than that in the Western medication group (Table 2).

Table 2. Comparison of modified Portmann score ($\overline{x} \pm s$, point)

Group	n	Pre-treatment	Post-treatment	Difference value
WMG	30	10.70±3.58	15.63±3.36 ¹⁾	4.93±1.74
HMG	30	11.33±4.32	$17.97 \pm 4.95^{1)}$	$6.63 \pm 1.38^{2)}$
AG	30	9.83±3.60	$17.00\pm5.22^{1)}$	7.17 ± 2.28^{2}

Note: WMG=Western medication group; HMG=Heat-sensitive moxibustion; AG=Acupuncture group; intra-group comparison, 1) P < 0.05; compared with the Western medication group, 2) P < 0.05

3.3.2 Comparison of therapeutic efficacy

After treatment, the recovery plus markedly-effective rate of the acupuncture group was significantly different from that of the Western medication group (P < 0.05), indicating that the therapeutic efficacy of the acupuncture group was superior to that of the Western medication group; the recovery plus markedly-effective rate of the heat-sensitive moxibustion group was significantly different from that of the acupuncture group (P < 0.05), indicating that the therapeutic efficacy of the acupuncture group (P < 0.05), indicating that the therapeutic efficacy of the heat-sensitive moxibustion group was superior to that of the acupuncture group. Therefore, the therapeutic efficacy of heat-sensitive moxibustion should be better than that of both acupuncture and Western medication.

Group	п	Recovery	Markedly effective	Improvement	Invalid	Recovery and markedly effective rate (%)
Western medication	30	5	9	11	5	46.7
Acupuncture	30	10	13	5	2	76.7 ¹⁾
Heat-sensitive moxibustion	30	14	11	3	2	83.3 ²⁾

Table 3. Comparison of clinical efficacies (case)

Note: Compared with the Western medication group, 1) P < 0.05; compared with the acupuncture group, 2) P < 0.05

4 Discussion

In traditional Chinese medicine, facial paralysis is called wry eye and mouth. When introducing about facial paralysis, *Huang Di Nei Jing* (*Yellow Emperor's Classic of Internal Medicine*) also initially brought up that the external pathogens such as wind cold and wind heat invade the muscle regions of Foot Yangming and cause stagnation of qi and blood, leading to wry mouth and eye^[7]. Doctors in modern days generally believe that when the healthy qi is not sufficient and the Wei-defensive qi is not strong enough, the intrusion of external pathogens into the facial meridians will block the circulation of qi and blood, and the meridians will

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then fail to function normally because of insufficient nourishment. Western medicine holds that facial paralysis should be caused by contraction of wind cold, infection of virus, or dysfunction of autonomic nerves^[8].

Relevant studies show that the first 7 d from the onset should be the acute stage of facial paralysis, it's the static stage from the 8th to 16th day, and then it comes to the remission stage^[9]. Some physicians point out that acupuncture treatment should be avoided in the acute and static stages of facial paralysis because of the comparatively high spontaneous recovery rate of facial nerve palsy^[10]. However, more physicians believe that acupuncture should be adopted at the very beginning of the disease, the sooner the better, though the acupoints and manipulations vary depending on different stages^[11]. The optimal intervention time will be missed if acupuncture treatment is used till the static or remission stage, making it more difficult to recover^[9].

Acupuncture can increase the blood supply to facial muscles, improve topical circulation, and enhance the repairing ability. It produces a positive influence on the metabolism and transference of the impaired muscular energy, and benefits the recovery of the function of the affected muscles^[12-15]. Due to the anatomical features, acupuncture on face may hurt, which makes it hard for some people to accept this treatment. Besides, different practitioners perform various manipulations and produce different degrees of stimulation, which somehow also affects the efficacy of acupuncture. According to the results of the current study, we can see that the non-invasive and painless heat-sensitive moxibustion can produce an equivalent efficacy in treating facial paralysis compared to the generally-used acupuncture plus TDP. As a novel type of moxibustion, heat-sensitive moxibustion has its own standard of stimulation intensity and operation^[16]. Therefore, its efficacy won't be significantly influenced by the difference of performers. When patients are afraid of needles, heat-sensitive moxibustion can be adopted to produce a significant efficacy, and thus it's worth promotion in clinic.

Conflict of Interest

There was no potential conflict of interest in this article.

Acknowledgments

This work was supported by Project of Jiaxing City Science and Technology Bureau, Zhejiang Province (浙江 省嘉兴市科技局科技项目, No. 2014AY21040).

Statement of Informed Consent

Informed consent was obtained from all individual participants included in this study.

Received: 5 February 2016/Accepted: 23 February 2016

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