

Observation on clinical effects of acupuncture plus cupping therapy for cervical radiculopathy

针罐结合治疗神经根型颈椎病的临床疗效观察

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Abstract

Objective: To observe the therapeutic effects of acupuncture plus cupping therapy and Western medication alone for cervical radiculopathy.

Methods: A total of 139 patients with cervical radiculopathy were randomly divided based on the random digital table into an acupuncture-cupping group (70 cases) and a Western medication group (69 cases). In the acupuncture-cupping group, Fengchi (GB 20) (bilateral), Dazhui (GV 14), Jianjing (GB 21) (bilateral) and Jiaji (EX-B 2) points of the neck [bilateral, midpoint between Fengchi (GB 20) and Dazhui (GV 14)] were punctured. After the arrival of the needling sensation, bilateral Fengchi (GB 20) and Jianjing (GB 21) were linked with electric stimulation and the rest acupoints were manipulated with the moderate needling technique. In the retaining of the needles, TDP lamp radiation was used. After acupuncture, the cupping therapy was applied to the local area. The treatment was given once every other day, 20 d for a course. After one course, the therapeutic effects were observed. The Western medication group was treated by oral administration of Meloxicam (Mobic), 7.5 mg, once a day, with water and liquid after meal. The therapeutic effects were observed after 20 d.

Results: The total effective rate was 92.8% in the acupuncture-cupping group and 73.9% in the Western medication group, with a statistical difference between the two groups ($P < 0.05$). After treatment, the scores of the clinical symptoms of the two groups were obviously declined ($P < 0.01$), and the score of the clinical symptoms of the acupuncture-cupping group was better than that of the Western medication group, with a statistical difference ($P < 0.05$).

Conclusion: Acupuncture plus cupping therapy was more effective than administration of Meloxicam tablets alone in the treatment of cervical radiculopathy.

Keywords: Acupuncture Therapy; Cupping Therapy; Cervical Spondylosis; Meloxicam; Point, Fengchi (GB 20); Point, Dazhui (GV 14); Point, Jiaji (EX-B 2); Point, Jianjing (GB 21)

【摘要】目的: 观察针罐结合和单纯西药治疗神经根型颈椎病的疗效。**方法:** 将 139 例神经根型颈椎病患者按随机数字表随机分为针罐组(70 例)和西药组(69 例)。针罐组针刺风池(双侧)、大椎、肩井(双侧)和颈夹脊穴(双侧,取风池和大椎穴连线的中点)。得气后,双侧风池和肩井接电针,其余穴位采用平补平泻法。留针期间配合 TDP 灯照射,针刺后予以局部拔罐。隔日治疗 1 次,20 d 为 1 个疗程,1 个疗程后观察疗效。西药组予口服美洛昔康片(莫比可),每次 7.5 mg,每日 1 次,饭后用水或流质送服,20 d 疗程后观察疗效。**结果:** 针罐组总有效率为 92.8%。西药组总有效率为 73.9%,两组总有效率差异有统计学意义($P < 0.05$)。治疗后,两组临床症状评分均较本组治疗前明显下降($P < 0.01$),针罐组临床症状评分优于西药组,差异有统计学意义($P < 0.05$)。**结论:** 针罐结合治疗神经根型颈椎病的疗效优于单纯口服美洛昔康片。

【关键词】 针刺疗法; 拔罐; 颈椎病; 美洛昔康; 穴, 风池; 穴, 大椎; 穴, 夹脊; 穴, 肩井

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Cervical radiculopathy is clinically a common and frequent disease, characterized by pain in the neck, shoulder and upper limb, and functional disturbance

due to compression and stimulation to the nerve root by various factors (osteo, discal, joint migration and chemical)^[1]. In various types of cervical spondylosis, cervical radiculopathy accounts for about 60%-70%^[1-2]. In the recent years, because of lifestyle change, the incidence rate was elevated with a young tendency^[3-4]. Generally in terms of the clinical treatment of cervical spondylosis, now medication or surgery are frequently

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used, but the cost is high and the adverse reaction is common^[5]. Domestically, the multiple therapies by combination of Chinese medicine and Western medicine are commonly used in China^[6-8]. In the recent years, the combined therapy of Chinese acupuncture and cupping therapy for cervical spondylosis has showed certain advantages and become more and more popular.

1 Clinical Materials

1.1 Diagnostic criteria

1.1.1 Diagnostic criteria in Western medicine

In accordance with the diagnostic criteria stipulated in the Second Qingdao Seminar of Cervical Spondylosis in 1992, the following conditions should be possessed: clinical manifestation of cervical spondylosis; degenerative changes of cervical intervertebral disc or intervertebral joints in image inspection, correspondence of image signs and clinical manifestations, i.e. the image findings could be used to explain the clinical manifestations.

1.1.2 Diagnostic criteria in Chinese medicine

In accordance with the diagnostic basis in the *Criteria of Diagnosis and Therapeutic Effects of Diseases and Syndromes in Traditional Chinese Medicine* in 1994^[9], the clinical symptoms included: stiffness and motor impairment of the neck, tenderness beside the neck, radiating pain in the chest, back and upper limb, numbness in the fingers; positive Jackson test, positive Eaton test; hyperosteoecy showed in X-ray film, straightening of the cervical physical curve, narrowing of intervertebral space, calcification in the nuchal ligament of posterior vertebra; and organic lesions of brain and stenosis in the canal of cervical vertebra were excluded.

1.2 Inclusion criteria

In conformity with the above diagnostic criteria of Chinese and Western medicine, and be confirmed of diagnosis of cervical radiculopathy; age ranged between 18 and 75 years, without gender limitation; willing to participate in this clinical trial and having signed the informed consent.

1.3 Exclusion criteria

Those with serious degenerative lesions in the cervical vertebrae in imaging inspection; congenital deformity, fracture and dislocation in the spine, tuberculosis in the spine, lateral curvature in the spine, instability of the spine, tumor of the spine, tumor of the spinal cord, osteoporosis and lesions of the spinal bone; cervical spondylosis caused by various internal and psychological diseases; those who unable to follow the doctor's advice in the treatment, or using other therapies during the clinical trial; those not in conformity with the inclusion criteria after review;

those stopped the treatment due to adverse reaction during the treatment; and those with organic lesion of the brain and stenosis in the canal of cervical vertebra.

1.4 Statistical methods

The SPSS 18.0 version statistical software was used for statistical analysis and management. The measurement data were processed by *t* test. The counting data were processed by Chi-square test. $P < 0.05$ was used to express a statistical significance in the difference.

1.5 General data

In this study, totally 139 patients were recruited. The cases were the outpatients with cervical radiculopathy, from Fangta Hospital of Traditional Chinese Medicine, Songjiang District, Shanghai, Shanghai First People's Hospital, Shanghai Jiaotong University School of Medicine, and Rehabilitation Clinic of Ledu Hospital of Songjiang District, Shanghai between January 2013 and December 2013. The patients were divided randomly by the digital table into an acupuncture-cupping group (70 cases) and a Western medication group (69 cases). In the acupuncture-cupping group, the age ranged from 24 to 70 years old and the duration ranged from 2 weeks to 20 years. In the Western medication group, the age ranged from 27 to 72 years old and the duration ranged from 1 week to 24 years. The differences in the age, gender and duration were not statistically significant (all $P > 0.05$), indicating that the two groups were comparable (Table 1).

Table1. Comparison of general data between the two groups

Group	n	Gender (case)		Average age ($\bar{x} \pm s$, year)	Average duration ($\bar{x} \pm s$, month)
		Male	Female		
AC	70	34	36	54.5±15.8	10.3±7.5
WM	69	36	33	53.2±18.6	9.9±7.3

Note: AC=Acupuncture-cupping group; WM=Western medication group

2 Therapeutic Methods

2.1 Acupuncture-cupping group

Acupoints: Bilateral Fengchi (GB 20), Dazhui (GV 14), bilateral Jianjing (GB 21) and Jiaji (EX-B 2) point of the neck [locate between Fengchi (GB 20) and Dazhui (GV 14)].

Methods: The above acupoints were punctured perpendicularly by the disposable stainless filiform needles of 0.25 mm in diameter and 40 mm in length, for 0.5-0.8 cun, and were manipulated by the even reinforcing-reducing manipulations after the arrival of the needling sensation. Fengchi (GB 20) and Jianjing (GB 21), as a pair, were linked with Model G6805-I acupuncture apparatus (manufactured by Qingdao Xinsheng Industrial Co., Ltd.), with continuous wave and

frequency of 40 Hz, for 20 min. During the retaining of the needles, TDP lamp was used for radiation. After the needles were taken out, glass cups, 7.1 cm in the diameter of the opening, were applied to the neck and shoulder and retained for 5-10 min. The above treatment was given once every other day and 20 d made a course. The therapeutic effects were observed after a course.

2.2 Western medication group

The Western medication group was treated by oral administration of Meloxicam Tablets (Mobic, approval number: SDA No. H20020217, Shanghai Boehringer Ingelheim Pharmaceutical Co., Ltd., China)^[10-11], 7.5 mg/tablet, 7.5 mg per time, once per day, taken with water or liquid after meal, 10 d made a course. The

therapeutic effects were observed after continuous administration for 20 d.

3 Observation of Therapeutic Effects

3.1 Observed items

The symptoms were scored before and after the treatment for the patients of the two groups, in accordance with the clinical evaluation table of cervical radiculopathy in the Guidelines of Diagnosis, Treatment and Rehabilitation for Cervical Spondylosis stipulated by Cervical Spondylosis Committee, Chinese Association of Rehabilitative Medicine in 2010 (Table 2)^[12]. The total scores are 48 points. The higher the score, the more severe the patient's symptoms.

Table 2. Evaluation of clinical symptoms (point)

Item	Degree			
	No	Mild	Moderate	Severe
Neck pain	0	2	4	6
Pain in the shoulder and back	0	2	4	6
Pain in the upper limb	0	2	4	6
Numbness in the upper limb	0	2	4	6
Tenderness in the neck and shoulder	0	2	-	4
Neck movement	0	2	-	4
Spurling test	0	2	-	4
Sensory disturbance	0	2	-	4
Muscle strength of the upper limb	0	2	-	4
Tendon reflex	0	2	-	4

3.2 Criteria of the therapeutic effects

The effective index was evaluated in accordance with the total scores of the clinical symptoms in Table 2.

The effective Index = (Total score of symptoms before treatment — Total score of symptoms after treatment) ÷ Total score of symptoms before treatment × 100%.

Clinical control: The symptoms and signs disappeared after treatment, normal activity of the cervical vertebrae, symptom score 0-1 point, the effective index >90%.

Remarkable effect: The symptoms and signs basically disappeared after treatment, basically normal activity of the cervical vertebrae, able to join normal activity and work, the effective index >70%, ≤90%.

Effect: The symptoms and signs were somewhat alleviated, with normal activity of the cervical vertebrae. The normal activity and working ability were improved. The effective index was >30%, ≤70%.

Failure: The symptoms and signs were not obviously improved after the treatment, and the effective index ≤30%.

3.3 Results

3.3.1 Changes in the clinical symptoms

After the treatment for 20 d, the scores of the symptoms in the two groups were remarkably declined, with statistical significances in comparison with those before the treatment (all $P < 0.05$). The score of the clinical symptoms decreased more remarkably in the acupuncture-cupping group than that in the Western medication group, with a statistically significant difference between the two groups ($P < 0.05$). The findings indicated that the therapeutic plans of the two groups could improve the clinical symptoms of the patients, but better in the acupuncture-cupping group than in the Western medication group (Table 3).

Table 3. Comparison of scores of symptoms before and after treatment ($\bar{x} \pm s$, point)

Groups	n	Before treatment	After treatment
AC	70	41.22±14.02	12.23±10.15 ¹⁾²⁾
WM	69	40.67±13.84	20.37±11.32 ¹⁾

Note: AC=Acupuncture-cupping group; WM=Western medication group; compared with the same group before treatment, 1) $P<0.05$; compared with the Western medication group after the treatment, 2) $P<0.05$.

Table 4. Comparison of clinical effects between two groups (case)

Group	n	Clinical control	Remarkable effect	Effect	Failure	Total effective rate (%)
Acupuncture-cupping	70	7	26	32	5	92.8 ¹⁾
Western medication	69	0	27	24	18	73.9

Note: Compared with the Western medication group, 1) $P<0.05$

4 Discussion

The major factors of cervical radiculopathy are herniation and exclusion based upon degenerative lesions of the intervertebral disc, syndesmophyte formation of the posterior border of the vertebrae, hypertrophy of the intervertebral joint and Luschka joint, compression and stimulation of the nerve root by thickening and calcification of yellow ligament, inducing aseptic inflammation of the nerve root, and showing root pain^[13-16]. Therefore, the first mission in the treatment is supposed to eliminate inflammation, relieve muscular spasm, and stop pain.

Acupuncture has been extensively used in the treatment of aseptic inflammation. Because of its low cost, less side effect and good therapeutic effect, it has been greatly appreciated by a vast number of patients^[17-18]. Fengchi (GB 20), Dazhui (GV 14), Jianjing (GB 21) and Jiaji (EX-B 2) point of the neck located in the neck and shoulder belong to the local selection of the acupoints and are precise in the therapeutic effects. These acupoints are all used in large number of clinical reports on cervical spondylosis, and it's a more mature plan for acupoints selection in acupuncture treatment of cervical spondylosis.

Cupping therapy has good effects to relieve local muscular spasm and promote local blood circulation. The cupping therapy applied after acupuncture plays a role of mutual complementation and mutual benefit. In this study, Mobic used in Western medicine is a common medication for degenerative bone problem. This study shows that acupuncture combined with cupping therapy can effectively get rid of nerve compression, eliminate edema in the nerve root, relieve pain, and improve the patients' quality of life, and is an effective measure needed advocating and popularizing in the treatment of this disease.

3.3.2 Clinical effects

After the treatment for 20 d, the total effective rate was 92.8% in the acupuncture-cupping group versus 73.9% in the Western medication group, with a statistical significance in the difference of the total effective rate between the two groups ($P<0.05$), indicating that the therapeutic effect was better in the acupuncture-cupping group than that in the Western medication group (Table 4).

Cervical spondylosis is one of the chronic diseases, repeatedly attacking and seriously influencing the physical and psychological health of the patients, even inducing psychological disorder in severe cases, such as anxiety, depression and phobia^[19], which not only influences the rehabilitation of the disease but also brings about negative influence on the learning, life and work of the patients. Therefore, in the treatment, it is necessary to pay attention to the patient's unhealthy emotions, in order to avoid psychological disorders.

Conflict of Interest

The authors declared that there was no potential conflict of interest in this article.

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Statement of Informed Consent

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

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