

Clinical observation on warm needling moxibustion plus acupoint sticking therapy for cervical radiculopathy

温针灸加穴位贴敷治疗神经根型颈椎病疗效观察

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Abstract

Objective: To observe the clinical effect of warm needling moxibustion plus acupoint sticking therapy for cervical radiculopathy.

Methods: A total of 120 cases were allocated into an observation group, a warm needling group and an acupoint sticking group according to the random number table, with 40 cases in each group. Cases in the observation group received warm needling moxibustion plus acupoint sticking therapy; cases in the warm needling group received the same warm needling moxibustion in the observation group; cases in the acupoint sticking group received the same acupoint sticking therapy in the observation group. The scores of Japanese Orthopaedic Association (JOA) and visual analog scale (VAS) were recorded before and after treatment.

Results: The total effective rate was 95.0% in the observation group, versus 77.5% in the warm needling group and 75.0% in the acupoint sticking group (both $P < 0.05$). Inter-group differences in JOA and VAS between the observation group and the other two groups were statistically significant (all $P < 0.05$).

Conclusion: Warm needling moxibustion plus acupoint sticking therapy is effective in treating cervical radiculopathy, and it can significantly alleviate pain and enhance clinical efficacy, and thus is worth clinical popularization.

Keywords: Acupuncture Therapy; Warm Needling Therapy; Acupoint Sticking Therapy; Cervical Spondylopathy; Neck Pain; Spondylosis; Pain Measurement; Radiculopathy

【摘要】目的: 观察温针灸加穴位贴敷治疗神经根型颈椎病的临床疗效。**方法:** 共纳入120例患者,按随机数字表随机分为观察组、温针灸组和穴位贴敷组,每组40例。观察组采用温针灸加穴位贴敷治疗,温针灸组采用与观察组相同的温针灸治疗,穴位贴敷组采用与观察组相同的穴位贴敷治疗。记录治疗前后患者日本骨科协会(JOA)评分和视觉模拟量表(VAS)评分。**结果:** 观察组总有效率95.0%,高于温针灸组的77.5%和穴位贴敷组的75.0%(均 $P < 0.05$)。观察组JOA和VAS评分与温针灸组和穴位贴敷组均有统计学差异(均 $P < 0.05$)。**结论:** 温针灸加穴位贴敷治疗神经根型颈椎病有效,能明显缓解疼痛,提高临床疗效,值得推广运用。

【关键词】 针刺疗法; 温针疗法; 穴位贴敷法; 颈椎病; 颈痛; 椎关节僵硬; 疼痛测评; 神经根病

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Cervical spondylosis (CS) is a common disease. According to the Second National Cervical Spondylosis Symposium, the definition of CS has been summarized as the symptoms caused by the degeneration of the cervical intervertebral disc and its secondary pathological changes affecting the surrounding nerves root, vertebral artery and spinal cord^[1]. Cervical radiculopathy is the most common type and accounts for nearly 60% of all CS patients^[2]. In recent year, with the wide spread of laptop, smart phone and air

conditioner, bad habitual gestures such as bowing head, and the increased exposure to wind, cold and dampness evils, the incidence of CS has increased significantly and affected more and more young people, causing significant troubles to patients' daily activities^[3]. We have started to treat cervical radiculopathy patients with warm needling moxibustion plus acupoint sticking since 2016, and the results are shown as follows.

1 Clinical Materials

1.1 Diagnostic criteria

The diagnostic criteria were stipulated in accordance with the *Guiding Principles for Clinical Study of New Chinese Medicines*^[4]: commonly affecting middle or senior age groups, or young people with a history of

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cervical injury or muscle tension, or congenital cervical vertebral malformation; mostly chronic onset, or acute onset with injury; showing a long course and fluctuation of symptoms, and a high relapse rate; mainly manifested as neck and shoulder pain, headache, dizziness, stiffness and numbness in upper limbs; X-ray test may show abnormal curve, unsteadiness or osteophyte formation in cervical vertebrae, with ossification of ligament and narrowed spinal sagittal diameter, and CT examination may show neoplasm posterior to the vertebrae and narrowed nerve root canal.

1.2 Inclusion criteria

Conforming to the diagnostic criteria; aged between 22 and 68 years; informed consent and able to follow the corresponding treatment.

1.3 Exclusion criteria

With severe diseases in the cardiovascular, hepatic, renal or hematopoietic systems or infection; with bone fracture, dislocation, tuberculosis or tumor; with serious osteoporosis; during pregnancy or lactation; with mental disorder.

1.4 Statistical methods

The data processing was done using SPSS version 19.0 software. The measurement data were described as mean \pm standard deviation ($\bar{x} \pm s$), between-group comparison was done using independent sample *t*-test, and inter-group comparison was done using paired sample *t*-test. The enumeration data comparisons were conducted by the Chi-square test. A *P*-value less than 0.05 indicated statistical significance.

1.5 General data

One hundred and twenty cases with CS in this study were all from out- and in-patients of the Acupuncture and Rehabilitation Department of our hospital between January 2016 and March 2017. Patients were randomized into three groups with 40 cases in each group. Patients in the observation group were aged between 25 and 67 years, patients in the warm needling group were aged between 24 and 66 years, and patients in the acupoint sticking group were aged between 26 and 65 years. Between-group differences in the baseline data were not statistically significant (all *P*>0.05), indicating that the three groups were comparable (Table 1).

Table 1. Between-group comparison of the baseline data

Group	<i>n</i>	Gender (case)		Mean age ($\bar{x} \pm s$, year)	Mean duration ($\bar{x} \pm s$, month)
		Male	Female		
Observation	40	19	21	40.3 \pm 10.4	16.1 \pm 8.5
WNG	40	21	19	42.1 \pm 10.0	15.6 \pm 9.07
ASG	40	18	22	41.6 \pm 10.6	17.2 \pm 8.4

Note: WNG=Warm needling group; ASG=Acupoint sticking group

2 Treatment Methods

2.1 Observation group

2.1.1 Warm needling moxibustion

Major acupoints: Dazhui (GV 14), bilateral Tianzhu (BL 10), Jingbailao (EX-HN 15) and bilateral Jiaji (EX-B 2) points from C₃ to C₇, and Houxi (SI 3) on the affected side.

Adjunct acupoints: Dazhu (BL 11), Fengfu (GV 16) or Waiguan (TE 5) were added for pattern of wind-cold or cold-dampness blocking meridians; Xuehai (SP 10) and Geshu (BL 17) for pattern of blood stasis and qi stagnation; Sanyinjiao (SP 6) and Xuanzhong (GB 39) for pattern of liver and kidney deficiency.

Method: After routine sterilization, filiform needles of 0.30 mm in diameter and 40 mm in length were inserted into the above acupoints. After qi arrival, the moxa was made into a moxa cone sized and shaped of a jujube, twisted onto the needle handle, 2-3 cm away from skin, and then lighted the moxa cone from the bottom. When the moxa cone was burned out and cooled down completely, removed ashes, which was counted as one zhuang. The treatment was performed three zhuang at each acupoint and done every other day for three weeks.

2.1.2 Acupoint sticking therapy

Acupoints: Same major and adjunct acupoints as those for warm needling moxibustion.

Medicine: *Bai Jie Zi* (*Semen Sinapis Albae*), *Xi Xin* (*Herba Asari*), *Gan Sui* (*Radix Kansui*) and *Yan Hu Suo* (*Rhizoma Corydalis*).

Methods: Crushed the aforementioned herbs into powder at a certain proportion, mixed it with fresh ginger juice to make a medicinal pill of 1.5 to 2.0 cm in diameter, and stuck the medicinal pill onto the acupoints with plastic film or medical fabric. The acupoint sticking lasted for 2 h every time, and was done every 7 d for a total of 3 times.

2.2 Warm needling group

Took warm needling moxibustion alone, with the same acupoints, method and course in the observation group.

2.3 Acupoint sticking group

Used acupoint sticking treatment alone, with the same acupoints, method and course in the observation group.

3 Therapeutic Observation

3.1 Observation items

3.1.1 Japanese Orthopaedic Association (JOA) score for cervical spondylosis^[5]

JOA evaluation was done before and after treatment to assess cervical function. JOA score ranges from 0 to

17 points. The lower the score, the worse the cervical function.

3.1.2 Visual analog scale (VAS)^[6]

VAS evaluation was done before and after treatment to assess the pain severity. The score ranges from 0 to 10 points. The higher score, the more serious the pain.

3.2 Therapeutic efficacy criteria

This was based on the *Criteria of Diagnosis and Therapeutic Effects of Diseases and Syndromes in Traditional Chinese Medicine*^[7].

Recovery: Complete absence of clinical signs and symptoms, with normal neck and limb functions, able to participate in normal labor activity.

Marked effect: Remarkable alleviation of clinical signs and symptoms; basically restored joint functions, with no influence on normal labor activity.

Improvement: Alleviated clinical signs and symptoms, but still needed to receive further treatment.

Failure: No improvement in clinical signs and symptoms at all or even aggravated.

3.3 Results

3.3.1 Comparison of clinical efficacy

After treatment, the recovery and markedly effective rate and the total effective rate in the observation group were higher than those in the other two groups, and the between-group differences were statistically significant (all $P < 0.05$), (Table 2).

3.3.2 Comparison of JOA and VAS scores

There were no significant between-group differences in JOA and VAS scores before treatment ($P > 0.05$). After treatment, the intra-group differences in JOA and VAS scores were statistically significant (all $P < 0.05$); the between-group differences in JOA and VAS scores between the observation group and the other two groups were all statistically significant (all $P < 0.05$), (Table 3).

Table 2. Comparison of therapeutic efficacy (case)

Group	n	Recovery	Marked effect	Improvement	Failure	Recovery and markedly effective rate	Total effective rate
						(%)	(%)
Observation	40	23	9	6	2	80.0 ¹⁾	95.0 ¹⁾
Warm needling	40	5	18	8	9	57.5	77.5
Acupoint sticking	40	6	15	9	10	52.5	75.0

Note: Compared with the warm needling group and the acupoint sticking group, 1) $P < 0.05$

Table 3. Comparison of JOA and VAS scores ($\bar{x} \pm s$, point)

Group	n	JOA			VAS		
		Before treatment	After treatment	D-value	Before treatment	After treatment	D-value
Observation	40	6.43±1.58	14.50±1.57 ¹⁾²⁾	8.08±2.06 ²⁾	7.50±1.06	2.30±0.99 ¹⁾²⁾	5.20±0.91 ²⁾
Warm needling	40	6.60±1.60	9.28±1.77 ¹⁾	2.68±1.21	7.83±1.20	5.73±1.24 ¹⁾	2.10±1.31
Acupoint sticking	40	6.83±1.60	9.35±1.64 ¹⁾	2.53±1.15	7.93±1.25	5.68±1.16 ¹⁾	2.25±1.17

Note: Intra-group comparison, 1) $P < 0.05$; between-group comparison, 2) $P < 0.05$

4 Discussion

Main pathological mechanisms of cervical radiculopathy can be summarized as two factors. One is the immune and inflammatory reaction caused by intervertebral disc content leakage, such response will stimulate nerve root and lead to various symptoms. The other is local inflammation caused by physical compression^[8]. Common non-surgery treatments for cervical radiculopathy include medicinal treatment, acupuncture and moxibustion, tuina, point injection, physical therapy, etc.^[9-12] Cervical radiculopathy pertains to Bi-impediment syndrome or neck and shoulder pain^[13]. It is usually caused by deficiency of healthy qi and external evil invasion. Among all pathogenic factors, wind-cold invasion is considered to be the primary cause^[14-15]. Thus warming yang and dredging meridians should be considered to be the basic treatment

principle in clinical practice^[16].

The Bladder Meridian and the Governor Vessel run through the shoulder and neck regions, so acupoints of the two meridians are most frequently used to dredge meridians and soothe sinews^[17]. Warm needling therapy is a perfect combination of acupuncture and moxibustion. The heat from burnt moxa can be directed into human body through the needle and reach the targeted area, which can expel evil, warm meridians, facilitate qi movement and remove stasis^[18-19]. Warm needling moxibustion can not only release the compression to the surrounding vessels and nerve roots, but also inhibit pain center in cerebral cortex, block the conduction of neurotransmitters, and meanwhile, influence cell and organ metabolism and nerve functions, and decrease nerve excitability to stop pain^[20-22]. Acupoint sticking therapy stuck the mixed powder of *Bai Jie Zi (Semen Sinapis Albae)*, *Xi Xin (Herba*

Asari), *Gan Sui* (*Radix Kansui*) and *Yan Hu Suo* (*Rhizoma Corydalis*) onto the affected area to stimulate local skin and acupoints, for strengthening essence, expelling evil, warming yang and dredging meridians, improving local blood circulation and regulating vessel and nerve functions^[23].

In conclusion, warm needling moxibustion plus acupoint sticking therapy is a perfect combination of acupuncture, moxibustion and medicinal herbs. It can expel wind-cold evil, facilitate qi and blood movement, warm yang and dredge meridians. The method is both safe and effective, and is worth clinical popularization.

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 the patients in this study.

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