

Clinical Study on Treatment of Frozen Shoulder by Penetrating Needling with Manipulation

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【摘要】目的：观察透刺结合手法治疗肩关节周围炎的临床疗效。**方法：**采用随机分组方法，将 336 例符合纳入标准的肩关节周围炎患者分为治疗组（透刺 + 手法）和对照组（单用透刺），分别采用肩髃透刺肩前穴结合手法以及单用透刺的方法治疗并进行比较研究，同时观察两组治疗前后肩关节功能活动分值以及红外热像图的变化。**结果：**治疗组疗效明显优于对照组，差异有统计学意义（ $P < 0.05$ ）。**结论：**透刺结合手法是治疗肩关节周围炎的有效方法。

【关键词】透针；推拿；按摩；肩痛；肩凝症

【Abstract】Objective: To observe the clinical effects of frozen shoulder treated by penetrating needling and manipulation **Methods:** 336 cases of frozen shoulder were randomly divided into treatment group, treated with needling Jianyu (LI 15) toward Jianqian (Ex) and Manipulation, and control group, treated with needling Jianyu (LI 15) toward Jianqian (Ex). The scores of shoulder movement and the changes of infrared image were observed before and after treatment. **Results:** The therapeutic effects were better in the treatment group than that in the control group ($P < 0.05$). **Conclusion:** Penetrating needling combining with manipulation is effective in treating frozen shoulder.

【Key words】 Point-through-point Method; Tuina; Massage; Shoulder Pain; Frozen Shoulder

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Frozen shoulder, a common disease with high incidence in clinic, is marked by pain and functional abnormality of shoulder joint. The authors treated frozen shoulder with penetrating needling and manipulation, and got good effects. The report was given as follows.

1 Clinical Data

1.1 Diagnostic and inclusive criteria

They were established according to *Shanghai Diagnostic and Therapeutic Guidelines of Traditional Chinese Medicine*^[1].

The cases fit the diagnostic criteria of frozen shoulder, without gender limitation, and didn't accept other treatment methods in the present study.

1.2 Exclusive criteria

Acute shoulder injury, shoulder tuberculosis, tumor, rheumatoid arthritis, apoplexy sequela, cardiovascular diseases, cerebrovascular diseases, diseases of liver and kidney, hematopoietic diseases, osteoporosis, and frozen shoulder without conglutination.

1.3 Random grouping

The present study had intended to include 280 cases, since less than 20% of cases may drop out, stop, or be excluded from the study, 336 cases were included. They were coded with a random number table, and randomly divided into treatment group and control group, 168 cases in each group.

1.4 General data

The total 336 cases included 148 men, and 188 women, aged 40-65 years old, with an average of 57.2 years, and disease duration of 2 months to 1 year.

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2 Treatment Methods

2.1 Treatment group

2.1.1 Penetrating needling

The patient lay on the back. After routine sterilization, Jianyu (LI 15) was punctured toward Jianqian (Ex) with a needle of 0.42 mm in diameter, and 100 mm in length. The needling sensation was got by lifting and thrusting method, and then, the needles were connected with KWD-808II electroacupuncture instrument with continuous wave, mild stimulation which could be endured by the patient. The needles were retained for 20 min, and then manipulation treatment was done.

2.1.2 Manipulation (Fig. 1)

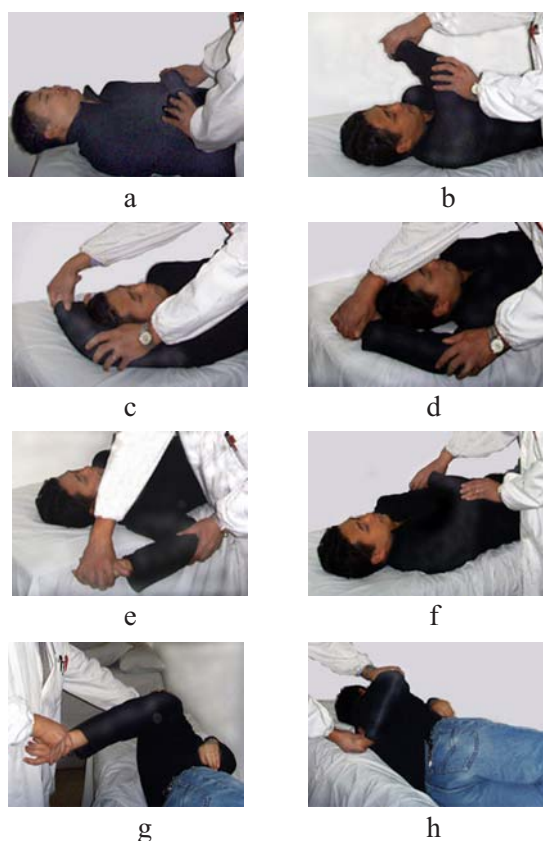


Fig. 1. The manipulation (the order is from a to h)

The patient lay on the back. The doctor turned the shoulder joint inward, and bent the elbow for 90° to make it close to the chest, then, raise the arm to the bed. The shoulder is lifted up for 90° , and then pushed to the middle 45° . The shoulder is lifted up for 90° again and pushed to the middle 90° .

The patient lay on one side. The affected arm was

extended backward to the maximum degree. Then the elbow is bent to make the palm close to the back and the thumb touching the forth or fifth thoracic vertebra.

The patient lay on the back. The affected shoulder was turned inward to bend elbow 90° and touch the chest. These were all the manipulations.

The treatments were done daily, and 5 treatments were a therapeutic course. After 3-day interval, the second course was given.

2.2 Control group

The patients were treated with penetrating needling, and the therapeutic effects were evaluated after two courses.

3 Observation of Therapeutic Effect

3.1 Criteria of therapeutic effect

The criteria were established according to *Shanghai Diagnostic and Therapeutic Guidelines of Traditional Chinese Medicine*^[1], and the evaluating criteria issued in the Second National Meeting of Frozen Shoulder.

3.1.1 Pain score of frozen shoulder

Visual Analogue Scale (VAS) was used to measure the degree of pain of the patients^[2].

No: VAS score is 0.

Mild: VAS score is 1-4, and the total score is 1 point.

Moderate: VAS score is 4-7, and the total score is 2 points.

Severer: VAS score is more than 7, and the.

3.1.2 Movement score of shoulder

Melle scoring method was applied to evaluate the five movements of shoulder^[3].

Abduction: $< 30^\circ$ is marked as 3 points, $30^\circ - 90^\circ$ as 2 points, $90^\circ - 120^\circ$ as 1 point, and 120° as 0.

Outward turn: $< 0^\circ$ is marked as 3 points, $0^\circ - 20^\circ$ as 2 points, and $> 20^\circ$ as 1 point.

Touching neck with hand: disability is marked as 3 points, difficulty as 2 points, some difficulty as 1 point, and normal as 0.

Touching spine with hand: disability is marked as 3 points, touching S_1 as 2 points, touching T_{12} as 1 point, and touching above T_{12} as 0.

3.1.3 Changes of infrared imaging

Infrared imaging was took with M301 Medical Instrument of Infrared Imaging 20 min before and after acupuncture and manipulation treatments^[4]. The room temperature was kept $22\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$, with humidity of 60%. Before the examination, the patient was sitting quietly for 5 min. The infrared probe was put 2 m away form the naked shoulder to measure the temperature changes of the affected shoulder.

3.1.4 Evaluating criteria of therapeutic effects

The scores of VAS and shoulder movement were added, and the total score was the score of disease condition. The therapeutic effects were evaluated by comparing the difference of the total score before and after treatments.

$n = (\text{total score before treatments} - \text{total score after treatments}) / \text{total score before treatments} \times 100\%$

Cure: $n \geq 90\%$;

Marked effect: $70\% \leq n < 90\%$;

Effect: $30\% \leq n < 70\%$;

No effect: $n < 30\%$.

3.2 Treatment results

Table 1. Comparison of therapeutic effects between the two groups (Cases)

Groups	N	Cure	Marked effect	Effect	No effect	Total effective rate (%)
Treatment	168	82	56	20	10	94.1
Control	168	29	53	53	33	80.4

Ridit analysis showed that the therapeutic effects have a significant difference between the two groups ($P < 0.05$).

Table 2. Temperature changes in infrared imaging ($^{\circ}\text{C}$)

Groups	N	Pretreatment	Posttreatment	Difference
Treatment	168	30.36	32.88	2.52
Control	168	31.34	32.14	0.80

The temperature difference before and after treatment was more in the treatment group than that in the control group ($P < 0.05$).

4 Discussion

The main symptom is local pain and limitation of movements of the affected shoulder. The pain is

severe at night. The arm could not lift, and turning outward and inward are restricted, therefore, the quality of daily life is affected.

Penetrating needling combining with manipulation is an effective method for treating frozen shoulder. Jianyu (LI 15) is a crossing acupoint of Large Intestine Meridian of Hand Yangming and Yang Heel Vessel. Jianqian (Ex) is an experimental acupoint for treating diseases of shoulder. Needling Jianyu (LI 15) toward Jianqian (Ex) could remove the obstructive qi and blood in meridians, and regulate ying and wei (营卫), therefore, the pathogenic wind, cold and dampness could not invade the body to relieve the shoulder pain. Manipulation could relieve the conglutination of the affected shoulder to recover the movements of shoulder, and to avoid the injury of muscle, tendon, articular capsule, and nerve.

Temperature is an important marker reflecting the physical and pathological status of body. Infrared imaging reflects the local temperature changes induced by local circulation and metabolism, so it could be used to evaluate the therapeutic effects of frozen shoulder.

Functional exercise could improve the joint movements, enhance the circulation, relieve inflammation, prevent conglutination, and recover the muscular atrophy. It is necessary to advice the patient to do some functional exercise of shoulder to strengthen the therapeutic effects.

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