

Clinical Observation on the Treatment of Nerve Root Pain of Lumbar Inter-vertebral Disc Herniation by Lifting Acupuncture

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Abstract: Yang needling is one of the twelve needling methods of acupuncture and moxibustion. Used to treat cold qi with a wide range and shallow location. Acupuncture is a method of treating diseases where the cold energy blocks the meridians in a wide and shallow area by pricking one needle in the center of the affected area and four shallow needles around it. Lumbar disc herniation is a common clinical disease that causes great distress to people's lives. The JOA symptom score of lumbar function before and after treatment was determined by using the lifting needling method for the patients with nerve root pain of Spinal disc herniation. It is proved that the clinical effect of Yang needling on radicular pain of lumbar disc herniation is significant, and the operation is simple, which is worthy of clinical application.

Keywords: Yang needling method; Nerve root pain in lumbar disc herniation; Clinical efficacy; Observation

1. Introduction

Lumbar disc herniation is a common clinical disease. In recent years, changes in working methods, lack of exercise, improper exercise methods, nutritional imbalance and other factors have led to a continuous increase in the incidence rate of radicular pain in lumbar disc herniation, even higher [1]. The main clinical symptoms of radicular pain in lumbar disc herniation are lumbar pain, numbness and pain in one or both legs and pelvis. Clinical examination shows low back pain, limited lumbar mobility, sensory disorders, positive results in straight leg lift tests and reinforcement tests. Nerve root pain of lumbar disc herniation belongs to the "arthralgia syndrome" category of traditional Chinese medicine, which is mostly caused by wind, cold and dampness [2]. Yang needling method involves pricking one needle in the center of the affected area, followed by shallow needling four needles around it to treat diseases with wide and shallow areas of cold qi blocking meridians. It has the characteristics of convenient use and significant efficacy, and is widely used for joint pain, swelling, poor mobility, and worsening symptoms caused by cold dampness and stasis. The effect of the above symptoms on nerve root pain of lumbar disc herniation is also significant [3]. The purpose of this study was to observe the clinical efficacy of Yang acupuncture in the treatment of radicular pain in lumbar disc herniation.

2. Experimental materials and methods

2.1 Research Design

The cases were selected for inclusion in the study according to the diagnostic criteria for radicular pain in lumbar disc herniation in the Criteria for the Diagnosis and Treatment of Diseases in Traditional Chinese Medicine (2012) [4] published by the National Administration of Traditional Chinese Medicine and the Guidelines for the Diagnosis and Treatment of Nerve Root Pain in Lumbar Disc Herniation in the Chinese Chiropractic Department issued by the Chiropractic Branch of the Chinese Society of Traditional Chinese Medicine[5]. From January 2021 to December 2022, 120 patients with radicular pain of lumbar intervertebral disc herniation who received treatment in our acupuncture and moxibustion and massage clinic were selected. They were treated with Yang acupuncture method for one month. The patients were given JOA symptom scores of lumbar function before and after treatment [6]. The plan has been approved by the Ethics Committee of our hospital and tracked throughout the

process.

2.2 Treatment methods

All 120 patients were treated with Yang acupuncture method; The Yang needling method mainly targets the lesion segment and focuses on needle sensation conduction. The first needle should be inserted at the point where the interspace of the spinous process of the affected segment deviates towards the inner edge of the affected small joint. The direction of insertion is usually straight, and the feeling under the needle should be observed. When the feeling of the needle sinking and tightening is obvious, and even the needle tip is felt to be sucked in, slowly insert the needle. After inserting the needle for about 70-75mm, there may be radiation inductance on the same or opposite affected limb, and the radiation inductance should be directed to the patient's painful area. The doctor gently lift the needle tip to avoid excessive stimulation. (It may also be transmitted to the contralateral healthy limb). If the first needle reaches the spinous process or vertebral lamina, it should adjust the direction and continue to repeat the previous needle method, adjust the direction towards the angle below the superior spinous process and the posterior midline, alternatively, insert another needle near the first needle in the direction of Jiaji acupoint and repeat the needle technique. Just now, 2-3 needles were inserted around the same or similar direction as the radiating needle, which requires a sense of lower limb radiation or a noticeable feeling of needle sinking and tightening. Due to significant inductance and patient tolerance issues during acupuncture, the frequency of acupuncture is once every other day, with a 2-week course of treatment, with a total of 7-8 injections. It can be used in conjunction with electroacupuncture to enhance needle sensation, release the tissue under the needle, and mainly enhance the conduction of needle sensation and expand the local adhesive focus. If the patient experiences severe pain or numbness in their lower limbs after being electrified, it indicates that the needle tip is too close to the nerve root. At this point, the central needle can be raised for a certain length. If there is no numbness or pain, or only jumping sensation, it can be continued.

Taking L4/5 intervertebral disc herniation at the pathological stage as an example, the acupoint selection should be between 0.5-1 inches on the right side of the gap between L4 spinous process and L5 spinous process (at the inner edge of the small joint). The direction of needle insertion should be straight first, or the direction should be adjusted according to the above operation. Generally, the needle should be inserted to the position of the lateral recess, and the needle should have a sinking and suction feeling under the needle. At this point, patients with lower limb pain or numbness may experience discharge or jerking sensation due to stimulation of the ipsilateral or contralateral crypt. At this point, the patient needs to extend the side acupuncture for 3-4 times, and during the acupuncture process, the patient also needs to have a sense of lower limb radiation.

When the affected segment, such as L4/5, is affected and the radiating area of lower limb pain is the L4 nerve root innervation area, it should be the L4/5 affected side protruding to compress or stimulate the walking root. At this time, it is necessary to select a suitable position between 7-14cm above the posterior superior iliac spine and below the spinous process, with the needle tip facing the L4/5 intervertebral space. Generally, patients with moderate body shape should be about 1~10cm. According to the patient's body shape, it is appropriate to turn inward or outward, and the acupuncture and moxibustion needle probe shall prevail.

2.3 Effect evaluation

The therapeutic effect is evaluated based on the JOA score of the Japanese Orthopedic Association before and after treatment. SPSS19.0 statistical software was used for statistics, with measurement data represented by $(\bar{x} \pm s)$, parallel control comparison using one-way ANOVA and t-test, and counting data using χ^2 Inspection. The purpose is to understand the improvement of various indicators in each group, finally, evaluate the efficacy of each group.

Clinical effect evaluation:

Recovery: Improvement rate $\geq 75\%$; Low back and leg pain and related symptoms disappear, straight leg lift test is negative, and normal work is resumed;

Significant effect: Low back and leg pain and related symptoms have been alleviated, straight leg lift test negative, and normal work has basically returned; Improvement rate ≥ 50 and $<75\%$;

Effective: Low back and leg pain and related symptoms have been alleviated, the straight leg lift test is suspected to be positive, and some have resumed work, but there is a recurrence after stopping

the medication; Improvement rate ≥ 25 and $<50\%$

Invalid: No improvement in low back and leg pain and related symptoms and signs, positive or worsening straight leg lift test, improvement rate $<25\%$.

3. Results

3.1 Clinical efficacy

After one month of treatment, 30 patients recovered, 86 improved, and 4 were ineffective. The clinical effect of raising needling on radicular pain of lumbar disc herniation is obvious. See Table 1.

Table 1: Comparison of clinical efficacy of Yang needling method (n=120)

Curative effect	recovery	improvement	ineffective	total effective rate (%)
	30	86	4	96.67%

3.2 Patient JOA symptom score

In this study, the focus was on comparing the JOA symptom scores of patients with lower back pain, motor disorders, sensory disorders, and brachial plexus traction tests. The JOA symptom score after treatment was better than before treatment ($P < 0.01$), as shown in Table 2.

Table 2. Comparison of JOA evaluation scores for lumbar symptoms in patients

Symptom	Pre treatment points	Post treatment points
Low back pain	1.25±0.19	4.12±0.35
Movement disorders	0.38±0.12	3.55±0.35
Sensory disorders	1.34±0.35	3.91±0.48
Straight leg lift test	1.12±0.35	2.56±0.38
Symptom total score	4.05±0.42	13.35±0.45

4. Discussion

Lumbar disc herniation is a common and frequently occurring disease in clinic. It has a great impact on people's health, especially in recent years, the change of people's working methods, lack of exercise or improper exercise methods, nutritional imbalance and other reasons, and the incidence rate is getting higher and higher. The direct cause of this disease is the nucleus pulposus, annulus fibrosus and cartilage plate. After the degeneration of different degrees, the annulus fibrosus is broken due to the impact or compression of external forces. The nucleus pulposus tissue protrudes from the broken place inside or behind the vertebral canal, stimulating or compressing the Spinal nerve root, resulting in lumbar pain, numbness, pain and other clinical symptoms of one or both legs and pelvis. The nerve root pain of lumbar disc herniation belongs to the category of "low back pain" and "arthralgia" in traditional Chinese medicine theory [7-8]. From the discussion of the classic theory of traditional Chinese medicine "Huangdi Neijing" to the research on the etiology and pathogenesis of low back pain, arthralgia and other diseases by physicians in past dynasties, it is believed that the etiology is traumatic strain and exogenous wind cold dampness, which leads to the imbalance of Ying and Wei, the blockage of channels and collaterals, and the deficiency of qi and blood; Or it may be due to kidney deficiency, where external pathogens enter and cause qi and blood blockage [9]. In the dialectics of Wei, Qi, Ying, and Blood in traditional Chinese medicine, Wei deficiency leads to the invasion of evil, Ying deficiency leads to blood deficiency, loss of nourishment of positive qi, deficiency of liver and kidney, and deficiency of Qi and blood lead to the deep accumulation of evil qi [10]. The General Theory of Etiology and Symptoms comprehensively summarized the nerve root pain of lumbar disc herniation and concluded that there are five causes of low back pain: yang qi injury, wind cold affecting the waist, kidney deficiency, falling injury to the waist, and sleeping in the wet land. Strain causes damage to the kidneys, which are the foundation of the human body's Yuanyang and are also affected by wind and cold, resulting in lower back pain [11]. In addition to violent trauma, most patients with radicular pain of lumbar disc herniation developed after feeling the three evils of wind, cold and dampness. Because the pathogenic wind, cold and dampness have been in the waist for a long time, blocking the meridians, causing the blood circulation in the waist to be impeded, and the lumbar muscles, tendons, ligaments and other soft tissues to lose elasticity and become stiff. Due to the loss of blood nourishment, the

nutrient supply of the fiber ring is insufficient, and gradually loses elasticity. A slight external stimulus will break the fiber ring, resulting in a series of symptoms of lumbar disc herniation and nerve root pain [12].

Patients with intervertebral disc herniation, except for some sudden onset symptoms caused by violent factors, are mostly developed from a long-term history of low back pain after experiencing wind, cold, and dampness. Plaster therapy is widely used and has a long history. It can significantly improve blood circulation in the lower back. Although this method cannot completely eliminate and retract protruding intervertebral discs, it has a significant effect on pain relief and symptoms, and is most easily accepted by patients. Traditional Chinese medicine treatment has the characteristics of small toxic side effects, multiple treatment targets, and cost-effective. It not only regulates the overall functional state and immune system, but also relieves pain to treat symptoms, tonifying the liver and kidney, strengthening tendons and bones, and promoting qi and blood circulation to dissipate wind, cold, and dampness. It is currently the most convenient and effective treatment, and is increasingly accepted by patients [13]. The Yang needling method is derived from the book "Lingshu Guanzhen". The "Twelve Needles" are a type of needling method that dispels evil spirits. The so-called Yang needling method refers to the one that is in the center of the body and floating around the four sides of the body, in order to treat the vastness of cold energy. Its function is to promote the generation of pathogenic factors, disperse obstruction, and treat "obstruction, redness, swelling, aggregation, and plaques". The acupuncture method is to first puncture the central part of the lesion, and then needle 6-12 at equal distances around the affected area, leaving the needle for 30 minutes ⑥. The main symptoms of lumbar disc herniation include low back pain, lower limb pain, numbness, etc. According to the theory of traditional Chinese medicine, "if you don't feel pain, you will feel pain if you don't feel proud." In this study, we used the Yang acupuncture method to treat moderate and severe lumbar disc herniation, and adopted the method of "unblocking the governor" to make it "generally feel pain, first unblock and then prosper", so as to solve low back pain, lower limb pain, numbness, and other symptoms. Yang needling therapy has the characteristics of low toxic side effects, accurate treatment targets, and cost-effective. It is currently the most convenient and effective therapy and is increasingly accepted by patients [14]. With the development of modern medical science and technology, the research on this disease has gradually deepened, and many new theories have emerged to explain the traditional Traditional Chinese medicine theory on the etiology and pathogenesis of this disease. The emergence of theories such as immune mechanism, nerve compression, and chemical radiculitis provides a theoretical basis for the application of traditional Chinese medicine theories in the treatment of this disease, such as tonifying the liver and kidney, strengthening muscles and bones, and promoting blood circulation and resolving blood stasis.

According to domestic literature reports, approximately 10% to 15% of patients diagnosed with lumbar disc herniation in low back pain clinics nationwide. According to relevant foreign research statistics, about 53% of light manual workers and about 64% of heavy manual workers will experience symptoms of low back pain, of which about 35% of patients will progress to lumbar disc herniation. Only a small number of patients with lumbar disc herniation require surgical treatment, while the vast majority of patients can be relieved or cured through non-surgical treatment. At present, for the treatment of lumbar disc herniation, people with mild symptoms can be relieved by rest, external application, oral drugs to promote blood circulation, remove blood stasis and relieve pain. For mild and moderate symptoms, acupuncture and moxibustion, massage, traditional Chinese medicine physiotherapy and other methods can be used to relieve them. For moderate and severe cases, most of them are treated by small joint medial margin nerve block or needle knife, minimally invasive surgery, and open surgery. Due to the current emphasis on health among Chinese people, limited family economic capacity, and limited work or time, many patients with moderate to severe lumbar disc herniation are unwilling to use small joint medial margin nerve block or needle knife to resist the use of glucocorticoids, and are unwilling to undergo minimally invasive or surgical treatment. They prefer conservative treatment to alleviate or cure. However, common acupuncture combined with massage, physical therapy and other methods commonly used in clinical practice often have poor efficacy in treating such patients, and ultimately cannot escape minimally invasive or surgical treatment. This process not only increases the psychological burden on patients, but also leads to uncertainty or even disbelief in traditional conservative treatment. The efficacy of Yang acupuncture combined with traditional massage in treating such patients is significantly better than that of ordinary acupuncture combined with traditional massage, enabling many patients with moderate to severe lumbar disc herniation to recover their health and re-enter social life. The Yang needling method can not only alleviate the symptoms of the vast majority of patients with lumbar disc herniation, but also cater to their fear of surgery, and has been highly praised by patients in clinical practice.

5. Conclusion

The clinical effect of Yang needling on radicular pain of lumbar disc herniation is significant, and the operation is simple, which is worthy of clinical application..

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