

Study on the Treatment of Lumbar Intervertebral Disc Herniation with Far-infrared Magnetic Stickers

Dexin Shi, Lijuan Zhang, Guijie Wang, Xingke Song, Guanyu Wang

Shandong University of Traditional Chinese Medicine, Jinan, 250000, Shandong, China

Abstract

Objective: To summarize the research on the use of far-infrared magnetic stickers in the treatment of lumbar intervertebral disc herniation in recent years, and to provide theoretical support for the clinical treatment of lumbar intervertebral disc herniation. **METHODS:** The CNKI database on CNKI database in recent years was searched for clinical literature research on the treatment of lumbar disc herniation, and the mechanism and advantages of far-infrared magnetic stickers in the treatment of lumbar disc herniation were summarized and analyzed. **Results:** The causes of lumbar intervertebral disc herniation have many aspects. **Conclusion:** Far-infrared magnetic stickers have a significant therapeutic effect on lumbar disc herniation.

Keywords

Far-infrared magnetic stickers; Lumbar disc herniation; Traditional Chinese medicine.

1. Causes of Lumbar Disc Herniation

From the perspective of western medicine, the occurrence of this disease has two aspects: internal and external factors. The internal cause is generally the degeneration and deformation of the lumbar intervertebral disc, while the external cause is mainly lumbar trauma. Due to the increase of age and long-term work, the intervertebral disc is constantly affected by the external force of the longitudinal axis of the spine [1], which leads to the continuous degeneration of the intervertebral disc, and at the same time, its water absorption capacity is weakened, and the nucleus pulposus cannot be filled normally for a long time. The intervertebral space becomes smaller, the surrounding ligaments relax, or the annulus fibrosus fissure is formed or even ruptures, which causes the nucleus pulposus to protrude into the fissure, which stimulates or compresses the spinal nerve and cauda equina, which is an important internal cause of lumbar disc herniation [2]; Chronic injury is an important external cause of annulus fibrosus rupture and intervertebral disc herniation. If the lumbar intervertebral disc is subjected to an unstable external force suddenly or for a long time, it will cause the nucleus pulposus to protrude backward or laterally. From the point of view of traditional Chinese medicine, the pathogenesis of this disease is that the meridians of the waist are blocked or impotent. The main internal cause is the lack of liver and kidney qi and blood, and the meridians are not warmed and nourished; the external causes are mainly exogenous pathogens of wind, cold, dampness and heat, blockage of the meridians, or waist sprain, blood stasis blocking the collaterals and causing pain.

2. The Performance of Lumbar Disc Herniation Clinical Manifestations

(1) Soreness in the waist Basically all patients suffer from this symptom, which is also the earliest symptom. It is manifested in the aggravation of the lower back after exertion or after taking the same sitting position for a long time. The symptoms can be relieved by resting or lying down. If the protruding part of the nucleus pulposus compresses the nerve root, it can cause local blood vessel compression and ischemia [4], and the pain will be sudden and severe.

(2) Radiating pain in lower extremities (sciatica) The pain is generally along the buttocks, passing from the back of the thigh to the back of the calf or to the outer ankle and toes. The initial dull pain gradually intensifies. Individual patients may also experience pain radiating from the bottom to the top, usually from the foot, the side of the calf, the back of the thigh, and then to the buttocks, often unilateral, but if the central type of obvious or multiple protrusions are also bilateral [5]. The pain is severe, like lightning, and the general patient may develop the disease after a little activity.

(3) limb paralysis and abnormal sensation This manifestation often occurs at the same time as radiating pain in the lower extremities. In clinical diagnosis, there are subject numbness and object numbness: Subjective numbness means that the patient feels numbness in the calf and dorsum of the foot, like thousands of small insects crawling, and when the needle is used for examination, it feels the same as the rest of the skin. It is exactly the same; and when the object is paralyzed, when the skin is examined with a needle, the hypoalgesia is completely different from the rest of the skin [6].

(4) Walking obstacle It is difficult for patients to walk, and few patients experience leg numbness, swelling or even unbearable pain after walking for a long time, which can be relieved after a period of rest [7].

(5) Muscle paralysis and atrophy In patients with lumbar intervertebral disc herniation, if the protrusion severely compresses the nerve root, it can lead to muscle paralysis and atrophy, which is manifested as foot drop, and in severe cases, calf muscle atrophy and difficulty in standing or walking [7].

(6) cauda equina syndrome Lower extremity and perineal weakness, flaccid paralysis, or sensory disturbances in the legs are usually present. Female patients have pseudo-incontinence, and male patients have impotence.

(7) Functional limitations In addition to walking obstacles, patients often maintain a special fixed posture in order to reduce the pressure on the nerve roots by the body. In addition, the movement of the waist in all directions may be limited, especially the limitation of flexion and extension dysfunction is the most obvious.

signs

(1) Gait The gait of patients with mild lumbar intervertebral disc herniation is not significantly different from that of ordinary people, but in more severe cases, the walking posture is mostly lameness, so it is commonly known as "pain reduction gait", which is characterized by the patient supporting the waist with one hand or suffering from the pain. For the legs, because they are afraid of the weight of the body, they quickly move the focus from the affected limb to the healthy limb, forming a jumping gait. The affected leg often touches the ground with the toes.

(2) lumbar scoliosis Patients often experience lumbar lordosis reduction or disappearance, some patients even have kyphosis, and most patients have lumbar scoliosis to the affected side [8].

tenderness, percussion pain and radiating pain Deep lumbar tenderness is usually accompanied by radiating pain, and there is a limited pain point next to the spinous side of the affected side in the corresponding segment of the intervertebral disc herniation, or accompanied by radiating pain in the lower limbs and feet, which is of great significance for treatment [9].

(4) Lumbar dysfunction The movement of the patient's waist in all directions is restricted, especially due to the lordosis or disappearance of the physiological characteristics of the lumbar spine, and the flexion and extension of the lumbar spine in sitting position is restricted.

(5) Neurological examination If the L3-4 intervertebral disc is herniated and compresses the L4 nerve root, the knee reflex may decrease or disappear, accompanied by hypoesthesia on the

front of the thigh and the inner side of the calf. If the L4-5 intervertebral disc is herniated and compresses the L5 nerve root, the anterolateral, dorsal and plantar sensation of the calf may be reduced, accompanied by decreased extensor strength; if the L5-S1 intervertebral disc is herniated, the S1 nerve root may be compressed. When the calf is affected, the lateral, posterior and lateral foot sensations may be decreased, accompanied by a decrease or disappearance of the Achilles tendon reflex [10].

(6) Special inspection The test of supine upright abdomen was positive, the neck flexion test was positive, and the straight leg raising test and strengthening test were positive.

3. TCM syndrome differentiation of lumbar disc herniation According to the "Diagnosis and Efficacy Criteria for Diseases and Syndromes of Traditional Chinese Medicine", lumbar intervertebral disc herniation is divided into 4 syndrome types: qi stagnation and blood stasis type, damp-heat phlegm stagnation type, wind-cold-damp stagnation type, and liver-kidney deficiency type [11].

(1) Qi stagnation and blood stasis type Patients with lumbar intervertebral disc herniation of Qi deficiency and blood stasis type are mainly due to the lack of qi in the body and cannot promote blood flow, which leads to stagnation of qi and blood. Blood stasis, which gradually leads to internal stoppage of blood stasis and causes low back pain. Clinical manifestations: low back and leg pain, such as thorns and refusal to press, the pain is fixed, the night is heavy and the day is light, the tongue is bruised and purple, the coating is thin, and the pulse is tight or astringent [12].

(2) Damp-heat phlegm stagnation type Lumbar intervertebral disc herniation patients with damp-heat phlegm stagnation mostly occur in southern China. Dampness is the main qi in the long summer. After the dampness invades the human body, it is mostly caused by the humid climate, working in water for a long time, or living in wetlands for a long time. If it is wet for a long time, the depression will turn into heat[13], then the damp and heat will evaporate, hindering the circulation of qi and blood in the human body, and causing low back pain. Clinical manifestations: waist and leg pain, severe pain accompanied by fever, aggravated in wet and rainy days and heat, temporarily relieved after a period of activity, thirst and reluctance to drink, short and red urine, red tongue, yellow and greasy coating, the pulse string number or the moist number.

(3) Wind-cold-damp-stagnation type In patients with lumbar disc herniation of wind-cold-dampness-type obstruction, the pathogenic factors of wind, cold and dampness invade the human body, resulting in blockage of the meridians, poor circulation of qi and blood in the meridians, urgency of the limbs and muscles, dystrophy, and low back pain. Clinical manifestations: heavy waist and legs, cold pain, unfavorable turning side, aggravated by cloudy and rainy days or cold, slightly relieved by heat, pale tongue, white or greasy coating, stringy and tight pulse [11].

(4) Liver and kidney deficiency type According to the theory of traditional Chinese medicine: "The liver controls the tendons and stores the blood, and the kidney controls the bones to generate the marrow", and "Plain Questions, Pulse Desires": "The house of the waist and kidney cannot be shaken, and the kidney will be exhausted." Due to the deficiency of liver and kidney, the kidney essence cannot nourish the bone marrow, and the liver blood cannot nourish the muscles and veins, resulting in low back pain. Clinical manifestations: soreness and weakness of the waist and knees, aggravated by exertion, relieved by rest, accompanied by tinnitus, deafness, pale tongue and thin pulse.

Far-infrared magnetic stickers for the treatment of lumbar disc herniation The far-infrared magnet can emit far-infrared waves, and its radiation power, penetrating power, resonance and temperature control effects can be more prominently expressed at 8-14 μm . The resonance effect enables various biological intellectuals to produce resonance absorption effects, making

molecules The energy level stimulates the surface of the students to be at a higher resonance energy level, which can transmit far-infrared heat energy to the deep layer of the skin, thereby increasing the temperature of the deep layer of the skin, thereby expanding the capillaries, promoting blood circulation, and strengthening the metabolism between tissues, thereby promoting the skeletal muscle. Recovery from microinjury [14]. Under the action of the magnetic field, the charge transfer form and energy state of the biological current distribution have changed, and the corresponding tissue and organ functions have changed. The movement transfer process changes [15], which promotes the exchange of substances inside and outside the cell membrane, enhances the activity of certain enzymes in the blood, reduces the concentration of inflammatory products, improves the pathological process, and promotes the recovery of inflammation. In addition, magnetic therapy can relieve pain in patients mainly due to the piezoelectric effect of electromagnetic fields, which stimulates the skeletal muscles of the spine and expands the diameter of microvessels and arterioles [16], so it can promote inflammatory exudates (such as bradykinin, group amine, serotonin, etc.) absorb and dissipate, reduce the absorption and dissipation of pain caused by swelling and compression of nerve bundle endings, so as to reduce inflammation and relieve pain and promote damage repair. The soluble plaster of the far-infrared magnetic sticker adopts advanced Chinese medicine pulverization technology, which contains dozens of Chinese medicine ingredients, such as blood-activating and stasis-removing medicines such as Chuanxiong, Angelica, Panax notoginseng, etc. Liver and kidney strengthening muscles and bones, such as Eucommia eucommia, Tzuduan, Achyranthes, etc., a variety of drugs have been scientifically combined to promote qi and blood circulation, remove blood stasis and relieve pain, remove dampness and dispel cold, and relieve pain. It can promote the blood circulation of the body, increase the absorption of drugs by the body, improve the activity of various enzymes in the body, and accelerate the removal of inflammatory factors and toxins. Wait for the sterile inflammatory response to subside, forcing the disc to absorb nutrients, increase elasticity, and ultimately relieve pain. For patients with qi stagnation and blood stasis type, by stimulating acupoints, it can activate blood and remove blood stasis, clear meridians and collaterals, reduce inflammation and relieve pain; For patients with damp-heat and phlegm stagnation, far-infrared magnetic stickers can expel phlegm and remove dampness, relax tendons and collaterals, activate blood and relieve pain; it is also effective for patients with liver and kidney deficiency.

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