

Progress in the Treatment of Lumbar Disc Herniation

Dingwen Zuo*

Tianjin Fuxing High School, Tianjin, China

*Corresponding author: writing@pathacademics.org

Abstract. In recent years, the number of patients with lumbar disc herniation (LDH) has gradually increased and their age has gradually become younger. It seriously affects the daily life and work of patients and increases their sense of pain. At home and abroad, the treatment methods for LDH are mainly divided into two categories, Western medicine treatment and traditional Chinese medicine treatment. Western medicine treatment mainly focuses on surgery and drug treatment, and minimally invasive surgery during surgery is gradually becoming a trend, but it may cause complications, which is not conducive to the postoperative recovery of patients. Western medicine treatment can alleviate pain symptoms to a certain extent, but long-term use leads to poor patient compliance. Traditional Chinese medicine mainly includes acupuncture and moxibustion, bone setting, etc. In addition to treatment, sports and psychological therapies also play an important role in the intervention and treatment of LDH. Each method has its own advantages, and different treatment methods should be given to different patients in order to achieve the best clinical treatment effect, in order to provide better research direction for clinical scholars.

Keywords: Lumbar Disc Herniation; treatment; challenge.

1. Introduction

With the progress of society and the acceleration of the pace of life, people's overuse, misuse and disuse of lumbar vertebrae in work, study, life and labor have increased the incidence rate of lumbar disc herniation. The incidence of lumbar disc herniation is large and has a trend of youth, which seriously affects people's quality of life. Therefore, the research and treatment of lumbar disc herniation has gradually attracted people's attention.

LDH often occurs in adolescents, middle-aged, and elderly, with more males than females. The frequently occurring sites are L4/5 and L5/S1, with pain accounting for over 90%. The basis for the onset of symptoms of lumbar disc herniation is the degeneration of the intervertebral disc. Lumbar trauma or repeated slight wear and tear in sports, work, and life lead to symptoms of pain caused by herniation of the nucleus pulposus. Job position, occupation, sports, and family genetics are associated with the occurrence of lumbar disc herniation; Obesity, smoking and alcohol abuse are common factors. The prevention of lumbar disc herniation is better after the disease. The vast majority of patients can achieve improvement in their remission function through rehabilitation treatment, but may relapse and require long-term adherence to treatment. Disabling lumbar disc herniation is rare, and only 10-20% of patients require surgical treatment [1,2].

Currently, there are many clinical methods for treating LDH at home and abroad. Clinicians often choose appropriate and effective methods based on the classification of lumbar disc herniation and the patient's own situation. The purpose of treatment is to address the patient's low back pain and leg pain caused by prolapse of the lumbar intervertebral disc. This article summarizes the current research progress of lumbar disc herniation in order to provide a theoretical basis for the diagnosis and treatment of lumbar disc herniation.

2. Western Medicine Treatment

2.1. Surgical Treatment

Minimally invasive surgery has become a trend in surgical development, mainly including chemical nucleolysis, percutaneous discectomy, and radiofrequency myeloblative

nucleoplasty. Chemical nucleolysis was first invented by American scientists in 1964. It involves percutaneous injection of chymopapain into the posterior lateral intervertebral disc to treat lumbar disc herniation. At present, collagenase is the most widely used enzyme in China [3].

The principle of nucleus pulposus removal surgery is to reduce the pressure in the lumbar intervertebral disc by cutting and aspirating part of the nucleus pulposus tissue, and rely on the tension of the posterior longitudinal ligament to restore the part of the herniated lumbar intervertebral disc, ultimately reducing the pressure on the nerve caused by the herniated lumbar intervertebral disc. In addition, the loss of the containment force of the fibrous ring on the nucleus pulposus is also the goal of decompression [1]. In a group of experiments, the surgical treatment and drug treatment of nucleus pulposus enucleation were compared. After surgical treatment and drug treatment, the number of patients who recovered in the observation group was larger than that in the control group. Therefore, surgical treatment is more effective than drug treatment for patients with lumbar disc herniation. In summary, evidence analysis shows that surgical treatment of lumbar disc herniation is better than drug treatment, with higher efficiency and wider application. But there are also many shortcomings that must be continuously improved. To promote the improvement of human living standards [4]. The characteristics of radiofrequency ablation nucleoplasty are mainly reflected in the ability to remove diseased or necrotic tissue, and this treatment can effectively alleviate patient pain and improve quality of life, and there is a negative correlation between surgical time and treatment effectiveness [5].

2.2. Drug Treatment

In a group of experiments, the control group was treated with conventional western medicine, oral meloxicam tablets, ibuprofen sustained release capsules, and traction therapy. On this basis, the observation group was treated with Shentong Zhuyu Decoction, and the effect was evaluated after 4 weeks of treatment. Western medicine and traction therapy combined with Shentong Zhuyu Decoction have significant effects on LDH, significantly reducing the level of pain factors and inflammatory reactions, improving lumbar function and quality of life, with significant clinical value [4].

If the symptoms of lumbar protrusion do not receive effective quality for a long time, it can lead to emotional disorders in patients, such as changes in self abandonment, anxiety, and irritability, which can affect patient treatment compliance. Research has found that Deanxit can alleviate patients' psychological anxiety, combine with medication in the lumbar spine, reduce patients' psychological anxiety, actively cooperate with clinical treatment, and improve clinical effectiveness [5].

3. TCM Treatment

In recent years, Western medicine has made significant progress in the field of minimally invasive surgery, and the treatment success rate has also been further improved. However, there are still problems such as symptom residue, protrusion residue, and relapse. However, drug treatment may have certain side effects that are intolerable to some patients. Therefore, traditional Chinese medicine has great advantages to a certain extent. Traditional Chinese medicine believes that lumbar intervertebral disc herniation is caused by rheumatism, cold qi entering the bone, blocked qi and blood, and blocked meridians, belonging to the category of arthralgia and flaccidity. Clinically, acupuncture and moxibustion, massage, TCM prescriptions and other traditional Chinese medicine treatments are the best choice for the treatment of lumbar disc herniation [6].

3.1. Acupuncture and Moxibustion Treatment

Acupuncture and moxibustion has a long history in traditional Chinese medicine. Modern medicine has confirmed that acupuncture at acupoints can stimulate the production of pain killing media in the nerve center, thus relieving body pain. At the same time, acupuncture can immediately increase the blood flow at the long-term lesion site, promote blood circulation, alleviate muscle

spasms, thereby reducing pain in the tissue around the nerve root, improving inflammation, and achieving satisfactory therapeutic results. 82 patients with symptoms, signs, and CT or MRI examinations that met the diagnostic criteria for lumbar disc herniation were included, including 46 male patients and 36 female patients; The oldest is 69 years old, and the youngest is 20 years old. The longest course of disease is 5 years, and the shortest is 3 days. Acupuncture and moxibustion treatment was given to 11 cases, 52 cases were cured, 16 cases were improved, and no 3 cases were found; The cure rate was 76.8%, and the total effective rate was 96.3% [7].

A meta-analysis included 17 studies, with a total of 1344 such patients, and analyzed the efficacy of lightning fire moxibustion on this disease. The results showed that compared with other therapies, lightning fire moxibustion significantly improved the effective rate, with a significant clinical effect, which was 20% higher, with a statistically significant difference [8].

Both the simple acupuncture and moxibustion treatment and the combination of acupuncture and moxibustion and other therapies have played the role of dredging tendons and collaterals, promoting qi and blood circulation, improving the compression of prominent nucleus pulposus nerve roots, alleviating or eliminating the symptoms of patients, improving the quality of life of patients, which is a therapy worthy of clinical use and promotion.

3.2. Acupuncture and Moxibustion Combined with Ttraditional Chinese Medicine

The invasion of external pathogens such as wind, cold, and dampness can cause local meridian obstruction, which is a pathogenic factor for cold and dampness type lumbar disc herniation. Therefore, it is necessary to use warm heat therapy to remove external pathogens. Moxibustion therapy can warm and unblock qi and blood, strengthen the body and remove pathogenic factors by applying drugs to acupoints through the warming and heat effect. The traditional Chinese medicine fumigation therapy, which also has a warming effect, also uses the thermal effect brought by steam to expand local blood vessels and promote blood circulation, thereby improving the body's absorption of traditional Chinese medicine components in the steam. Currently, there have been literature reports on the combined application effects of two suitable techniques of traditional Chinese medicine, using the warming meridians and clearing collaterals of moxibustion, as well as the dispelling dampness and cold effects, combined with the dispelling wind and dehumidifying effects of traditional Chinese medicine fumigation, to alleviate the pain symptoms caused by cold and dampness type lumbar disc herniation caused by wind, cold, and dampness [9].

3.3. Orthopedic Treatment

In the department of orthopedics and traumatology of traditional Chinese medicine, bone setting manipulation plays an extremely important role. Famous orthopedic and traumatology experts in ancient, modern, and modern Chinese medicine, whose academic characteristics and diagnostic and therapeutic secrets are mainly embodied in bone setting techniques. Without injection or medication, it is easy to solve orthopedic problems, alleviate pain, and gain the recognition and trust of most patients. It has unique value in both historical heritage and practice.

A clinical trials included 18 male patients and 12 female patients. The average age is 40. The lesion sites all meet the diagnostic criteria for LDH in "Practical Osteology". All patients were followed up for 3 months, and the comprehensive efficacy was evaluated based on the efficacy criteria. The treatment results showed that the treatment of LDH with traditional Chinese medicine bone-setting manipulation can alleviate lumbar pain and promote the recovery of lumbar function, with a precise effect, which is worthy of clinical promotion and application [10].

4. Exercise Therapy

4.1. Core Stability Exercise

From an anatomical perspective, the "core" of the human body refers to the spine, hip joints, and pelvis, which are located at the junction of the upper and lower limbs and serve as a connecting link

between the preceding and the following. A study was conducted on 74 patients with lumbar disc herniation who received treatment. They were randomly divided into a control group (36 cases) and an observation group (38 cases). Among them, the control group adopted systematic and routine rehabilitation treatment methods, mainly including physical therapy, rational use of drugs, and rehabilitation education. On the basis of the control group, the observation group received a series of waist core muscle strength training and corresponding nursing. Compare and analyze the follow-up results before and after rehabilitation treatment for 3 and 8 weeks. The results showed that after 3 weeks of rehabilitation treatment and 8 weeks of rehabilitation, the JOA score of the lumbar spine in the observation group increased, but the ODI score and visual analogue scale (VAS) score of low back pain decreased; In the control group, the patients' symptoms also improved after treatment. During follow-up, it was found that after treatment, the recurrence rate in the observation group after 8 weeks was significantly lower than that in the control group. The difference between the two groups was statistically significant ($P < 0.05$). It further demonstrates that for patients with lumbar disc herniation, core muscle training for their waist not only has a significant therapeutic effect, but also greatly reduces the long-term recurrence rate of the disease, which is worthy of clinical promotion [11].

4.2. Yoga

Yoga is the use of ancient and scientifically mastered techniques to improve people's physical, psychological, emotional, and spiritual states. It is a movement that achieves the harmony and unity of the body, mind, and spirit, including the asana method of adjusting the body, the breathing method of adjusting the breath, and the meditation method of adjusting the heart, to achieve the unity of the body and mind. Yoga not only has a systematic training plan, but also uses precise anatomical methods to adjust the body, stretch tense muscles and stiff joints, which can enhance flexibility and strength. And a large number of studies have shown that yoga can alleviate the pain caused by lumbar disc herniation in patients, including performing yoga exercises once for 12 weeks, twice a week, lasting for 1 hour each time. In the third and sixth months, compared with the control group, all indicators were significantly improved [12].

4.3. Tai Chi

Taijiquan is a physical and mental exercise used to treat low back pain in recent years. Taijiquan, as an aerobic exercise, has a wide impact around the world. It is compatible with traditional philosophy, ancient medicine, health preservation, and aesthetics. At the same time, it combines guidance and exhalation, combines qi and strength, and emphasizes overall harmony. During the practice process, it is emphasized to take the waist as the central axis. The twisting force of Chen's Taijiquan originates from the feet, originates from the legs, dominates the waist, and runs through the fingers.

In one experiment, 14 people in the Tai Chi group and 13 people in the core stability group were selected for a controlled trial. The results showed that Taijiquan training significantly improved the pain level and muscle activation of patients with low back pain [13]. This research result provides scientific and powerful evidence for the exercise prescription of patients with low back pain.

5. Health Education

For patients with lumbar disc herniation, proper health education can play a certain role in preventing recurrence, preventing aggravation, and alleviating symptoms. All patients and medical personnel should master this technology.

5.1. Adjusting Daily Exercise Patterns

Exercise adjustment is very important for patients with acute lumbosacral radiculopathy in order to alleviate further damage to the nerve root and avoid worsening pain. Patients should avoid high-

impact movements that increase spinal stress and avoid repetitive rotations and bending movements. If a specific activity can cause severe low back pain or significantly exacerbate the pain, it is important to avoid that activity and try other forms of activity. The ideal exercise program should combine regular exercise that can improve cardiovascular function with muscle strength training for the trunk and buttocks. Walking, swimming, and low impact aerobic exercise are all good forms of physical exercise.

5.2. Return to Work and Workplace Transformation

Recommendations for regression work should be considered individually based on the actual situation of the patient. Early return to work and normal daily work is beneficial for patients. If you can avoid prolonged sitting and standing, avoid moving heavy objects, and avoid rotating your waist, you can continue to work. White collar workers who work in offices can be recommended to return to work as soon as possible if they can control the length, rhythm, and posture of their work. If patients with original work intensity are temporarily unable to complete their work, they should be recommended to choose a lighter intensity work position if conditions permit. Ergonomic modifications to workplaces with heavy work tasks are effective in preventing the recurrence of diseases. A randomized controlled study suggests that ergonomically designed work tasks can promote patients' return to work and reduce the incidence of chronic disease progression. If you need to sit or stand for a long time, you should often change your posture and get up and exercise a few times during work intervals. Use chairs that provide appropriate back support and frequently adjust the office chair to avoid prolonged sitting in the same position [14].

5.3. Maintain Correct Posture

"Sitting for a long time, with the waist in a slightly bent position, and frequent bending activities are detrimental." Many incorrect methods of moving heavy objects, such as frequently moving heavy objects or moving excessively heavy objects, can lead to increased back pain. Patients must learn proper techniques for bending and moving heavy objects. Use ergonomically designed waist and seat cushions to assist in maintaining correct sitting posture.

5.4. Psychotherapy

Let patients have a correct understanding of the disease, actively face the condition, and conduct reasonable treatment. At the same time, a series of psychological rehabilitation methods such as painting, reading, contacting nature, breathing fresh air, often interacting with people, or mindfulness therapy are used to remind patients of their mental health abilities in their spare time life [14,15].

5.5. Daily Suggestions

It is recommended that patients avoid driving for too long and sitting still for too long. It is recommended that patients with excessive body mass index (BMI) undergo weight loss exercises, exercise dietary control, and improve their psychosomatic health. It is recommended that smoking patients quit smoking and reduce their exposure to second-hand smoke [16].

6. Conclusion

After the discussion and analysis in this article, it can be seen that although there are many methods for the treatment of lumbar disc herniation at the present stage, and each treatment has certain curative effects, each treatment method has its own indications and limitations, and there are also some differences in the application universality and therapeutic effects of each treatment method. Multiple methods should be used in combination to learn from each other's strengths, The specific treatment method must be accurately selected based on the patient's various conditions. As a common disease, both traditional Chinese and Western medicine have a deep understanding and research on it in clinical practice, but there are still some limitations. For example, the sample size of TCM related

research is small, the quality of evidence-based evidence is low, and some non surgical therapies, including non surgical therapies, are only descriptive reports, lacking comparative studies to screen. In the future, clinical scholars need to continuously improve, which is more conducive to disease prevention, diagnosis, and treatment. author believes that with the unremitting efforts of many medical staff, there will be many simpler, more convenient and faster methods to treat patients with low cost and significant effects.

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