

## Review Article

# Clinical Analysis and Literature Review of 128 Cases Misdiagnosed as Lumbar Intervertebral Disc Herniation

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## Abstract

With the development of society and the improvement of medical and health care level, the average life expectancy of human is longer and longer. But the causes of lumbar and leg pain are complex. Lumbar intervertebral disc herniation is one of the most common causes of lumbar and leg pain [1]. The author found in clinical practice that many patients were misdiagnosed as lumbar intervertebral disc herniation. Therefore, 128 cases of patients misdiagnosed as lumbar intervertebral disc herniation were analyzed, and the report is as follows, aiming to improve clinicians' understanding of lumbar intervertebral disc herniation.

## Clinical Data

### General information

128 patients were from the outpatient department of rehabilitation medicine, first people's hospital of dongning from October 2011 to October 2015. Among them, 74 were males and 54 were females, with a ratio of 1.4 males to 1 females. Age 18 to 78 years old, average age (39.4 ± 10.25) years old; the duration of illness is 1 week ~ 6 years.

### Auxiliary examination

Lumbar MIR smears in all patients suggests that the waist dish outstanding, including 1 L1 ~ 2 between the waist dish outstanding example, L2 ~ 3 between the waist dish outstanding 4 cases, 10 cases of L3 ~ 4 between the waist dish outstanding, 25 cases of L4 ~ 5 between the waist dish outstanding, L5 ~ S1 between the waist dish outstanding 34 cases, L1 ~ 2, L2 ~ 3 between the waist dish outstanding in 1 case, L1 ~ 2, L4 ~ 5 between the waist dish outstanding 3 cases; There were 19 cases of lumbar disc herniation in L3 ~ 4, L4 ~ 5, L5 ~ S1, 28 cases of lumbar disc herniation in L3 ~ 4, L4 ~ 5, L5 ~ S1. L3 ~ 4, L4 ~ 5, L5 ~ S1 lumbar disc protrusion 3 cases.

## Bears Fruit

### Diagnosis results

Results of diagnosis after relevant examination and treatment: Glutes injury syndrome, 22 cases (17.19%) and 15 cases of iliopsoas muscle injury syndrome (11.72%), the waist muscle injury syndrome of 13 cases (10.16%), vertical spinal muscular injury syndrome 12 cases (9.36%), 11 cases of piriformis injury syndrome (8.59%), 10 cases of injury of the iliotibial band syndrome (7.81%), buttock epithelial nerve viega profit-press syndrome 9 cases (7.03%), hip muscle injury syndrome in 8 cases (6.25%), hip little muscle injury syndrome 7 cases (5.47%), hamstring injury syndrome, 7 cases (5.47%), There were 5 cases of abdominal muscle injury syndrome (3.91%), 4 cases of femoral head ischemic necrosis (3.13%), 3 cases of femoral lateral cutaneous nerve compression syndrome (2.34%), and 2 cases of lower limb arterial occlusion syndrome (1.56%).

### Treatment results

Ischemic necrosis of femoral head in 2 hip replacement, 2 cases

recovered after treatment of symptoms, lower limb artery occlusion syndrome 1 routine intervention stents improved after treatment, 1 case after conservative therapy; other patients were cured by systematic rehabilitation.

## Body

Low Back Pain is one of the most common diseases afflicting humans. About two-thirds of people have had lower back pain in their lifetime, which is second only to the common cold and is the second reason why patients seek medical treatment [2,3]. According to statistics, the incidence of waist pain is as high as 84%, and chronic waist pain is as high as 23%, among which 11% ~ 12% cannot work normally due to waist pain [4]. Lumbar disc herniation is one of the most common causes of lumbar leg pain. The popularity of the further development of imaging, magnetic resonance (NMR), increased diagnostic rate of lumbar disc prolapse in recent years, almost every lumbocruial pain patients have dubbed "the lumbar intervertebral disc protrusion of diagnosis, reason from the lumbar magnetic resonance (NMR) prompt lumbar disc, don't are caused the lumbar disc to the pain? No questions from doctors? Literature reports put forward "lumbar disc" and "difference" between the waist dish outstanding diseases ", but many doctors don't really understand their meaning, still under the diagnosis of "" lumbar intervertebral disc protrusion. Lumbar intervertebral disc herniation has long been considered as the main cause of lumbar pain. In recent years, studies have found that the lumbar intervertebral disc herniation compression of nerve roots causes less than 30% of waist pain, and some scholars even believe that the proportion is less than 1% [5]. Most low back pain, with or without pain involved, usually lacks objective neurologic signs. Since 2011, a total of 867 patients with lumbar and leg pain have been admitted, and 65 patients with lumbar intervertebral disc herniation have been confirmed, accounting for only 7.50% of the patients admitted. Literature reports that lumbar intervertebral disc herniation is only a rare cause of chronic low back pain [6]. This is the same as what I see clinically. In addition, there are literature reports is 28% ~ 33.3% incidence of asymptomatic lumbar disc, bulging lumbar 50% [7,8], prompt MRI in lumbar disc, there are no symptoms may; The literature reported that there

was no significant correlation between structural changes found in MRI examination and patients' clinical symptoms [9]. Therefore, lumbar intervertebral disc herniation cannot be confirmed by MRI examination. Only by careful consultation and physical examination can misdiagnosis be prevented. The reason of misdiagnosis in this group of patients is mainly because clinicians have always believed that lumbar intervertebral disc herniation is the main cause of lumbar pain, over-reliance on the results of image examination, and inattentive consultation and palpation.

In order to reduce the misdiagnosis rate of lumbar intervertebral disc herniation, the author combined the literature reports to introduce the misdiagnosis related diseases, in order to improve the clinicians' understanding of lumbar intervertebral disc herniation.

The initial manifestations of gluteus Maximus injury syndrome are hip pain, followed by waist and leg pain and numbness, mainly on the outside and/or the back side. The symptoms are aggravated when walking and cannot sit for long [10]. Because the symptoms are very similar to lumbar disc herniation, it is misdiagnosed as lumbar disc herniation, and lumbar MRI supports the diagnosis of lumbar disc herniation. 22 cases in this group were misdiagnosed. But careful examination revealed multiple trigger points in the gluteus Maximus region. Single hip extension test positive; and then you can make a diagnosis; the effect of local treatment was significant, and all the patients in this group were cured by manipulation. Gluteus Maximus injury syndrome is often caused by acute or chronic muscle overuse (usually accompanied by intense centrifugal contractions, such as climbing uphill, and especially leaning forward). Or it can contract, such as swimming in freestyle, staying in a position with long muscles (such as hip flexion during sleep), and sitting for a long time [11].

The main clinical symptoms of iliopsoas injury syndrome are pain in the waist and groin. When changing position, pain mainly occurs or aggravates when the hip joint is flexibly extended (inguinal region). Physical examination revealed deep tenderness in the projection area of the iliopsoas muscle on the side (lumbar and inguinal tenderness). Active straight leg elevation test positive and/or resistance test positive and/or lumbar muscle traction test positive. Pain in the medial thigh but not in the knee; Pain in the waist and increased when the affected limb was forced to flex. Skeletons of lumbar injury syndrome often because the muscles of the acute or chronic overuse (such as too fierce lie on your back up and running or playing football), for a long time in the position of muscle contraction (such as: hip flexion posture, excessive lumbar lordosis), such as length of the leg caused by [11]. 15 patients in this group were cured by deep massage and stretching.

Waist side muscle injury syndrome often because the muscles of the acute or chronic overuse (for example: repeated heavy lifting or bend), in the case of muscle stretching all of a sudden pressure (for example: when the spine bending forward, especially with the contralateral side bend or either the direction of rotation), etc.; Such as gardeners, housekeepers, and construction workers. The main manifestations are pain in the hips and buttocks, but the pain increases when standing upright without support and when sitting or standing up, and the pain of side bending increases [11]. Thirteen patients in this group were cured by traction and manipulation.

Ridgatory injury syndrome is often caused by acute or chronic

muscle overuse (e.g. Lifting heavy objects, especially under the posture of scoliosis or rotation), long time immobility (bus ride, computer work, games, etc.), scoliosis, sitting for a long time, bad posture, etc. The main manifestations are lower back, hip pain, numbness; Symptoms are similar to lumbar intervertebral disc herniation, and MRI supports the diagnosis of lumbar intervertebral disc herniation, which is easy to be misdiagnosed. However, lumbar lateral flexion is often limited, lumbar lordosis increases, and/or thoracic kyphosis decreases [11]. 12 cases in this group were cured by massage and functional training.

Piriformis injury syndrome is generally manifested as hip pain, accompanied by a sense of constriction, which may lead to lower limb radialgia along the sciatic nerve distribution area [12]. Because the radialgia symptom of lower extremity is similar to lumbar intervertebral disc herniation, and lumbar MRI shows lumbar intervertebral disc herniation, it was misdiagnosed. 11 cases of misdiagnosis in this group were all caused by the above reasons. In fact, careful palpation can touch a cord in the projection area of the piriformis muscle. Pear muscle tension test positive; Side lower limb at the same time the straight leg-raising test before 60 °C obvious pain, more than 60 °C when pain relieve [13]. 11 patients in this group were cured by deep massage. Piriformis is often caused by acute or chronic muscle overuse; A position where muscles are shortened for long periods of time (e.g., when driving with your foot on the accelerator, when sleeping on your side, when your thigh is bent and in closed).

The affected side of iliotibial tract injury syndrome (iliotibial tract injury syndrome) is characterized by pain on the lateral side of the thigh, accompanied by pain on the lateral side of the knee joint (pain on the medial side of the knee joint in some patients), weakness and acerbity. There is no swelling or tenderness in the knee, and it is difficult to squat when the knee is closed. There is pain on the outside of the knee or on the outside of the femur. Body visible near the large lateral femoral trochanter and on the lateral femoral condyle and femoral lower-middle near a third junction tenderness obviously, can touch or reach a funicular crimping pain nodules, thigh adduction activities is aggravating, the iliotibial band tension test positive [14-16]. 10 cases in this group were cured by manipulation.

Patients with hip epithelial nerve compression syndrome mainly present with pain and numbness in the waist and buttocks, especially with tingling, soreness or tearing pain in the buttocks. Some patients radiate to the outside of the thigh, generally not exceeding the knee [17,18]. The body can be located near the midpoint of the iliac crest or 3 ~ 4 cm below it to find a fixed and definite point of tenderness [19], which can touch the cord and groove marks. Some patients had positive straight leg elevation test, but negative reinforcement test. The above symptoms are similar to lumbar disc herniation, and MRI has lumbar disc herniation, which is easy to be misdiagnosed as lumbar disc herniation. Group of 9 patients were misdiagnosed as lumbar intervertebral disc protrusion is still a lack of careful physical examination and misdiagnosis, the disease diagnosis is very simple, actually in the iliac crest point near or below 3 ~ 4 centimeters of pressure point and (or) play pull symptoms will relieve can diagnosis [20]; Literature reports that lumbar intervertebral disc herniation is often associated with hip epithelial nerve compression syndrome. However, 9 cases of the author's patients were cured by means of

treatment alone.

The middle gluteal muscle injury syndrome is characterized by pain and numbness in the buttocks and the outer thigh, and the pain is aggravated in the outspread limbs and standing walking. Easily misdiagnosed as lumbar intervertebral disc herniation diagnosis; however, the patient can touch the cord and tenderness in the projection area of the gluteus medial is muscle. The pain of lateral hip abduction increased. Straight leg elevation may cause hip pain, but no radiation pain [21,22]. Hip muscle injury syndrome often because the muscles of the acute or chronic overuse (for example: intense walking or running, walking on the soft sand, for a long time on one leg), on time without moving, etc. Eight patients in this group were cured by manipulation and DMS.

Hip little muscle injury syndrome are often involved in the hip, the outer thighs and below crus to the external ankle department [23], and small 5 and 4 ~ waist dish outstanding between 5 ~ s1 is very similar to the symptoms of, combined with lumbar MRI diagnostic support for lumbar intervertebral disc protrusion, extremely easily misdiagnosed as between the waist dish outstanding disease. However, the posterior margin of the anterior lateral abdominal muscle and the posterior margin of the anterior superior iliac spine in the projected area of the gluteus minor can be seen as deep in painful nodules or cords. The gluteus minimums traction test was positive and the gluteus minimums contractile test was positive. Seven patients in this group were cured by manipulation and DMS.

The popliteal muscle injury syndrome is mainly manifested as pain and numbness in the posterior thigh. Symptoms are similar to lumbar disc herniation, and because MRI supports the diagnosis of lumbar disc herniation, it is easy to be misdiagnosed as lumbar disc herniation. But has its certain characteristics, hamstring area can reach the cords and tenderness, can hit a funicular lumps, pain can be awake at night and affect Morpheus, the straight leg-raising limited radiation pain, but does not appear, the bending resistance test positive. Hamstring injury syndrome often because of acute or chronic overuse, sit not suitable chairs for distal thigh back ischemia caused by oppression, and for a long time in the muscle shortening posture, such as [11] of the baby's sleeping position. Seven patients in this group were cured by hand massage.

Abdominal muscle injury syndrome is mainly manifested as lower back pain, lower abdomen pain; But most of them are pain in the lower back across the midline. Abdominal muscle injury syndrome often because of acute or chronic overuse (such as excessively fierce sit-ups), direct trauma (trauma, and surgical incision), emotional tension, long-term lazy posture caused by poor posture (especially a computer for a long time of personnel) [11]. These patients are unable to stand upright, roll up their abdomen, lie down on their lower limbs, touch spasmodic muscle cords and trigger points. In this group, 5 patients recovered after intermittent traction, manipulation and self-extension.

Patients with femoral head ischemic necrosis mainly show pain and stiffness in the affected side of the groin, hip, thigh or knee, and some patients may experience pain and discomfort in the waist [24]. All the 4 patients in this group had lumbar pain and discomfort. Lumbar MRI showed lumbar intervertebral disc herniation, while the clinician did not consult and examine the body carefully, resulting

in the misdiagnosis of lumbar intervertebral disc herniation. One patient in this group was treated in the external hospital with lumbar intervertebral disc herniation for 1 year. In this group, 4 patients improved after hip arthroplasty in 2 cases and 2 patients improved after conservative treatment. In this group, the reasons for misdiagnosis were mainly due to poor consultation and physical examination, excessive reliance on imaging examination, and the early appearance of discomfort or stiffness in the groin, hip, and then discomfort in the waist. Physical examination revealed tenderness at the midpoint of the groin, the stop point of the adductor Magnus, and deep tenderness at the back of the buttock. Hip percussion pain positive, hip joint grinding test positive [25].

Patients with femoral lateral cutaneous nerve compression syndrome are mainly manifested in pain, numbness and acid distension of the anterior and lateral thigh, aggravated after prolonged standing or excessive hip extension, and relieved after rest [26]. The physical examination showed the anterior and lateral lamellar hypoesthesia area of the femur, with local percussion pain. There were definite tenderness points in the area between 1.0 cm and 5.0 cm below the anterior superior iliac spine. Lateral thigh numbness is similar to leg symptoms caused by lumbar intervertebral disc herniation. Combined with MRI, lumbar intervertebral disc herniation is diagnosed with lumbar intervertebral disc herniation without detailed examination. All the 3 patients in this group were misdiagnosed due to lack of local physical examination, and were cured by local injection.

Patients with lower limb arterial occlusion disease early main symptoms with limb pain, numbness, cold, paresthesia, long line after the symptom is aggravating, gradually appear intermittent claudication [27], between these symptoms and signs and lumbar dish outstanding disorder are very similar, however many clinicians for lower limb arterial occlusion disease generally insufficient understanding, often considered as lumbar disc disease. Combined with MRI, lumbar disc herniation is diagnosed as lumbar disc herniation, which is the cause of misdiagnosis. In this group, 2 patients with lower limb arterial occlusion had a history of diabetes for many years. Lower extremity vascular ultrasound confirmed. 1 case was cured after interventional stent treatment. One patient was relieved after medication.

## Conclusion

In conclusion, there are many reasons for misdiagnosis of lumbar disc herniation, but most of them are caused by over-reliance on imaging examination and inattentive examination. Avoid misdiagnosis the author thinks that should pay attention to the points: Earnest study specialized technology, broaden their knowledge, especially focus on understanding the lumbar disc and the difference between the waist dish outstanding disease “, as well as the meaning of the straight leg-raising test is radiation pain or the pain caused by muscle shortening, need to differentiate; Do not rely too much on image examination for lumbar intervertebral disc herniation without lumbar intervertebral disc herniation. In addition, it is necessary to determine whether the position of interstitial disc herniation compression nerve root is consistent with the clinical symptoms, and whether the skin node and muscle node are consistent. Consult carefully, especially for the cause of illness,

aggravation, and associated posture or/ or specific posture; Careful physical examination, visual touch knock at listening momentum and special inspection is very important, "" lumbar intervertebral disc protrusion in diagnosis of doctors and therapists touch is very important, and want of target muscle or muscle group muscle length in order to make clear diagnosis; Most of the patients in this group were misdiagnosed due to the result of palpation. Therapist before and after treatment, follow-up treatment conditions allow himself, and to evaluate patients, 3 ~ 5 days treatment has no effect, whether there is a wrong diagnosis, and treatment options, but treated patients (especially deep or strong stimulation technique) should be paid attention to knead pressure reaction also often appear in 3 ~ 5 days, need to identify them. To sum up, there are not many patients with real lumbar disc herniation causing lumbar leg pain, and the diagnosis of lumbar disc herniation should be cautious to prevent misdiagnosis.

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