

Lateral Recess Syndrome among Patients Complaining of Sciatic Pain Referred for Surgery in Samarra City

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Abstract: A prospective research was performed on 50 patients submitted for radiological screening in Samarra general hospital complaining of chronic backache and sciatica. The study was completed for patients recommended by senior neurosurgeons, orthopedicians, & rheumatologist, to the radiological unit in Samarra public hospital from October 2016 to October 2017. Radiological studies were analyzed by senior radiologists of Samarra public hospital in conjunction with the recommending senior doctors. Patients who are operated on were all proven to have chronic Lateral Recess Syndrome both radiological and surgically.

Keywords: Lateral Recess syndrome (LRS), Disc Disease, Back Paine,

1. Introduction

The lateral recess consists of a triangular area produced by the back of the vertebral body, the pedicle, and the superior facet (1). The inherent or inherent trefoil canal and nerve root are laterally positioned and compressed as a result of the anteroposterior in the lateral recess niche. There are two types of lateral recess syndrome (2-4). Chronic backache with sciatic radiculopathy was typically presented to patients. It should consequently be distinguished from the prolapsed discoveries and other spinal problems (5). The purpose of this study is to assess the prevalence of LRS in comparison with other causes of persistent back pain.

What are the Causes of Sciatica?

The spinal canal and intervertebral foraminae in the lower back are the oscillating tunnels of the spinal nerves. Pressure may arise if the size of these tubes is diminished.

Lumbar Disc Prolapse and Sciatica

When an intervertebral disc is either ruptured or scratched, a disk prolapse (nation) occurs. The intervertebral disks are soft, shock-absorbing structures in each vertebrae (bones) in the vertebrae. Between every vertebra resides a single disk. The outside ring of the intervertebral disks is robust ('annulus'), and the center is soft and smooth (nucleus). A sphere structure allowing tilting, turning, and gliding movements in the spine is the core, soft and juicy nucleus.

The nucleus is also the major absorber. It is a clear gelatinous substance, 88 percent of young adults are filled with water. The water content decreases substantially with age and/or deterioration. The remaining nucleus consists of collagen fibers, connective tissue cells, and a minor quantity of cartilage. No blood vessels or nerves are present in the nucleus. The annulus is the hardest region of the disk, which joins each spine. The annulus is a round mass of fibers that surrounds and holds the center nucleus under pressure to prevent rupture.

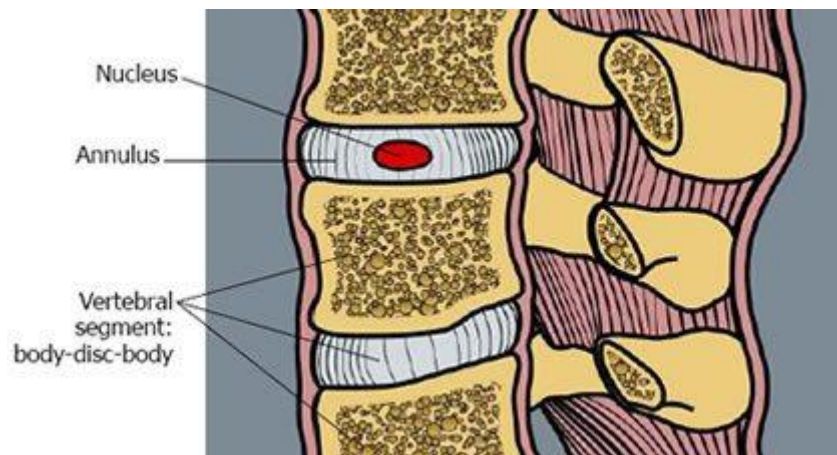


Figure 1.1: a degenerative disc of vertebrae shrink

These discs shrink between your vertebrae in degenerative disk disease and become worn out or torn, which can lead to a hernia. A ring tear is used to tear the fibrosis annulus, which is often the first event in the disc prolapse process. An annular tear may produce pain in your back with or without your leg. The annulus is broken if a disk is broken or herniated. The core then extrudes partly from the disk. That means that when the nucleus pulposus comes out of its typical place, a lumbar disk prolapse (or herniation) ensues.

Intervertebral discs broken or propped can cause leg discomfort or sciatica in two ways:

- The pressure of the spinal or intervertebral foramen directly on the nerves.
- Nerve irritation is caused by chemicals from the damaged disc.

Discs often suddenly break down due to high pressure. Heavy bending and lifting are the most common ways to break a disk. Sometimes intervertebral disks tear with little force. This is typically due to weaker ring disks that have become weak over several years because of recurrent trauma. This can also happen in the spinal aging process. In young and middle-aged individuals herniated disks most frequently occur. Around 90 percent of the L4-L5 or L5-S1 discs are herniated.

2. Symptoms and Causes for Sciatica

The most prevalent symptom of lung radiculopathy is Sciatica which is a pathway description of suffering and feelings such as stomach and tingling, weak muscles, or impaired reflexes. "Radiculopathy" indicates nerve root irritation or injury that causes pain and other symptoms that radiate outwards from the nerve root affected. In the case of sciatica, pain often feels like low back pain radiating through the leg.

Pain is the distinctive symptom of sciatica. Although the symptoms of sciatica may be felt throughout the sciatic nerve, classical sciatica radiates from the bottom back to the butt and from the leg to the lower knee. In fact, if you have low back discomfort, your doctor routinely looks for sciatica. Moderately often, sciatica pain in buttocks or hip areas can begin to feel and spread down the leg.

Sciatica pain is often referred to as electric, burning. Nerve pain can range from slight to appalling and can be worse if you bend, twist, or tox. Although you have two sciatic nerves (one on either side of your body), you usually have only one side of the body with sciatical symptoms. If you have both legs radiating pain, the pain may be caused by a pinched sciatic nerve less probable, adds Dr. Wang.

Besides pain, the muscles it serves might also become weak if the sciatic nerve is pushed. You may find it difficult to bend your knee, to combine your thighs, and to point your foot, or toes up or down.

2.1 Causes of Sciatica

Simply put, anything that compresses or pins the sciatic nerve (especially where it leaves the spine) may induce sciatica, explains Dr. Wang. Some of the most common are:

- **Herniated discs:** The rubber disks between the lower back vertebrae fused may bulge or herniate, causing discomfort and/or sciatic nerve roots to be compressed. The most common cause of sciatica is a ruptured or bulging disc.
- **Degenerative disc disease:** Vertebral discs might begin to wear down when they are old. When the discs grow too thin, the space between each vertebra is squeezed and the sciatic nerve root is pushed. The fluid from the disc may be leaked and irritated by the sciatic nerve if the exterior coverings of disks wear down.
- **Bone spurs:** An overcrowding of bone (osteophyte) can exert pressure on the nerve roots of the sciatic. These spurs commonly develop close to osteoarthritis-affected vertebrae.
- **Spinal stenosis:** RS is a reduction in the space traveled around and producing compression by the spinal cord and sciatic nerve roots. This reduction can be due to arthritis or old age.
- **Spondylolisthesis:** The vertebrae are intended for stability to stack on top of each other. When one vertebra in the lower back glides over the below vertebra (spondylolisthesis), the sciatica nerve may be pressed down.
- **Vertebral fracture:** Sciatic nerve can be crushed by cracks or fractures, which are known as spondylolysis, in a section of the vertebra that forms a joint (pars interarticularis).
- **Piriformis syndrome:** Typically, the piriformis muscle is on the sciatic nerve of the flesh and can compress the sciatic nerve if it is tight. After a long period of sitting, going up, walking, or jogging, these sensations may worsen. The piriformis is the flat-band muscle that goes from your sacrum to the top of your thighbone in the hip articulation.

3. Patients and Methods

From October 2016 to October 2017, a cross-sectional study of 50 patients repainted with chronic back pain and radiculopathy was performed on a 3 months MRI and MR xylography of each subjective patient, selecting three months was considered sufficient to eliminate the vital changes between each consequent assessment in the degenerative disease. Reports of all research have been revived all by themselves in comparison with the last study and the next. The age group was 38 to 60 years in our study.

In our study, MRI underestimated root compression in thirty-two cases out of fifty because it was validated by surgery. Eight cases out of fifty, MR Xylography co-estimates and has also been surgically confirmed. We, therefore, tend not to corroborate the diagnosis of the Lateral recess syndrome, where, like in other research, the diagnosis of CT xylography has been much sought after, either with MRI or with MR. Although the diagnosis of lumbar degenerative disease remained superior in MRI.

The MRI characteristics of lumbar degenerative diseases are defined, but the accuracy of the MRIs in the detection of road pressure caused by degenerative modifications is not taken into account [7]. The lateral recess syndrome has been divided into two kinds clinically:

1. [Lumbar Narrowing Channel] Congenital Stenosis
2. Stenosis [Shrink Lumber Canal] Secondary (acquired)

The 7 patients received a pair of degrees of surgery for all patients and all were below the predicted ages for lumbar laminectomy and amniotomy.

Inclusion criteria

1. Adult patients of either sex in the age group of 20 to 50 years.
2. Compound fractures with segmental bone loss of long bones both non-infective and infective, without any comorbidity, were included.

Exclusion criteria

1. Patients not fulfilling the above inclusion criteria.

2. Tubercular patients with fractures of long bones.
3. Pathological fractures arising out of skeletal metastasis.
4. Congenital causes of pathological fracture.
5. Fractures resulting from metabolic bone diseases.

Surgical procedure

The patient was prepared by doing all pre-surgical investigations. The open fracture was applied and antibiotics were immediately launched. Anaesthetic fitness was obtained. Each case was planned depending on fracture type, radiological diagnosis, soft tissue condition, infective or non-infective status. Patients with bone loss, dead sclerotic or sequestered bone, and limb-length discrepancy were intended for excision of the devitalized tissues and the gap was managed by bone transport after a corticotomy with an oscillating saw at a proximal metaphyseal or metaphyseal – diaphyseal zone. Segmental fibula excision was performed in the leg, to allow acute docking if a barrier was demonstrated. The periosteal in corticotomy was preserved since it played a vital part in osteogenesis distraction.

A spinal anesthetic has been taken to patients. On either side of the rift was taken the requisite Length (100,230,400) of the LRS rail and a minimum of one template clamp. The double sleeve is taken and two Schanz screws are put on both sides of the fracture in proximal-most distal template clamp holes. (Schanz screws should be parallel to the joints line near the joints). Then, at 2.5 cm (minimum) from the fracturing location, screws of Schanz were inserted closest to the fracture site. Then were inserted the rest of the Schanz screws. The clamp template will subsequently be replaced by the final clamp. The nozzles are tightened to Allen, and the distraction compressor is applied across the site. The proximal cortex of 4.8 mm and far cortex is boiled with a 4 mm drill bit while inserting Schanz screw. It was then passed a 5/6 mm hull screw. (Either at the side of the fracture, there should be a minimum of three Schanz screws. The ideal way to pass these Schanz screw is with a 1, 3, 5-position clamp hole. If only two Schanz torches are put in a clamp, they are in 1, 5 positions best positioned). For tibia, the anteromedial side of the leg was used for femur with the LRS frame; the framework was on the side of the thigh. The frame for knee covering should be lateral to make movement easier.

4. Results

The Lateral Recess Syndrome has been established in ten patients of our 50 patients and examined & graded but only 7 patients were operated on due to surgical denial, the opposite three patients, and symptomatic improvement was reported inside the patients being operated. Our investigation may have a regular detection of up to 20 percent of lateral recess syndromes (10 out of 50). It was founded in our investigation that 40-50 years are more people.

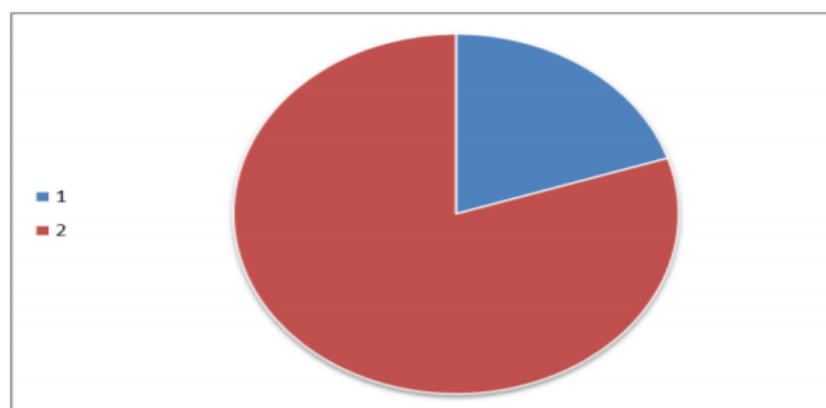


Fig. 4.1: Percentage of LRS in studied patients

It is more common in men than in women in all subjects of the same age range.

Male patients	Female patients
30 patients	20 patients

The proportion of rural and formerly rural is higher than urban.

Rurals & formerly rural	Urban
35 patients	15 patients

In our study, the side recess syndrome in all patients referenced for radiological evaluation is less than a prolapsed intervertebral disc condition.

Lateral recess syndrome	Prolapsed intervertebral disc disease	Lumbar sprain spectrum
10 patients	35 patients	5 patients

The remaining two patients were unilaterally decompressed, thus unilaterally performed for two levels, by the seven patients surgical of bilateral lumbar decompression due to bilateral radiculopathy.

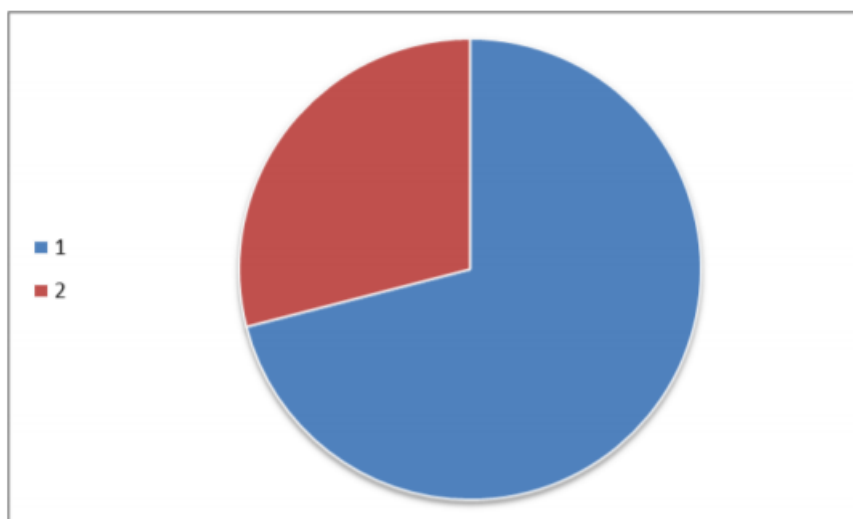


Fig. 4.2: Percentage of Operated Patients with Bilateral LRS

The symptoms were completely solved by all operated patients at discharge and 3 months later, both pain & diabetic radiculopathy. The other three patients without operation were somewhat resolved by aggression, rigorous rest, and adjuvant antiepileptic medications with NSAIDs. It is important to notice that neither urinary nor feculent symptoms have any full number of feet dropped.

Recommendation

1. Frequent operative reporting of both pre-and post-operative patients is recommended and the diagnosis and therapy of L.R.S are not completely based on MRI.
2. The diagnostic treatments are advised for plain x-rays, polysomnography, and myelography CT, albeit myelography is invasive and is the last option.
3. Surgical treatment for lateral recession syndrome is better than non-surgical treatment.
4. Foraminotomy + decompression laminectomy in therapy of side recess syndrome is superior to

decompression laminectomy alone.

Conclusion

1. LRS is a simple and easy technique with a very short learning curve.
2. Can be used for all open fractures with substantial bone loss.
3. LRS is an affordable and single, permanent primary operation.
4. It decreases hospital stay and is economical.
5. It is useful for bone lengthening / transportation, deformity correction.

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