

Physical Rehabilitation of PIVD in Geriatric Population - A Case Report

Namrata Rathi¹, Tushar Ubare¹, Shilpa Khurana¹

¹Professor, Shri K. R. Pandav College of Physiotherapy, Bhilewada, Bhandara, India.

Corresponding Author: Namrata Rathi

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ABSTRACT

Chronic Low Back Pain (CLBP) is a severe and widespread health issue. There are numerous classification and therapy systems for people with low back pain (LBP) that are based on the influence of lumbar postures and movements on symptoms. Chronic low back pain is a prevalent source of suffering that has significant personal and financial effects. Low back pain (LBP), one of the leading causes of disability, is on the rise throughout Africa and is a major issue. This rising prevalence will surely rise, particularly the number of older persons with chronic incapacity connected with an inability to work, which will influence healthcare costs and the nation's workforce. The most common cause of low back pain and sciatica is intervertebral disc lesions. Low back discomfort affects 5% of the population each year, yet only 1% of these people develop radiculopathy. Lumbar disc prolapse is a condition that affects people between the ages of 30 and 50, with a male majority and a link to repetitive mechanical stresses and smoking. The degree of symptoms varies as well, and for many individuals, discomfort and loss of function can lead to incapacity and extended sick leave. The protrusion from the nucleus pulposus through the annulus fibrosis is known as PIVD. This case study demonstrates that regular exercise, traction, back strengthening exercises, the use of modalities such as IFT, and correct ergonomics can all help to alleviate the symptoms of PIVD. For decades, surgical excision of the PIVD and decompression of the compressed nerve root have been the most widely acknowledged surgical treatment.

Keywords: Chronic low back pain, geriatric population, Posterior decompression, PIVD, Physiotherapy rehabilitation.

INTRODUCTION

The nucleus pulposus moves outside the space of the intervertebral disc in a prolapsed intervertebral disc (1). The most common ailment between the ages of 30 and 50, with a male to female ratio of 2:1, is prolapsed intervertebral disc, which is linked to repetitive mechanical pressures (1). It can happen at any level; however, it usually happens at L4/5 or L5/S1 in 95% of instances (1). Pain and numbness extending to the buttocks and lower extremities are clinical features of a prolapsed intervertebral disc caused by nerve root compression (1). A prolapsed disc is often

known as a slipped disc,' because the disc does not normally slip, but a section of the inner, softer part of the disc protrudes out or herniates due to a weakness in the disc's outer surface(2). The herniated disc is another name for a prolapsed intervertebral disc. The bulging disc could put pressure on nearby structures, such as a nerve exiting the spinal cord (2). Low back discomfort is frequently caused by degeneration of the lumbar intervertebral disc (3). The degree of degenerative disc alterations raises the chance of getting low back discomfort (3). The ability to control the position and motion of the trunk over the pelvis to allow

for the most efficient production, transfer, and control of force and motion is known as core stability (3). When it comes to lumbar disc herniation symptoms, physiotherapy is the treatment of choice(4). A wide range of physiotherapeutic methods are beneficial in clinical practice. The McKenzie concept, mobilization therapy, and traction are all effective during the acute period (4). Poor posture, prolonged sitting or standing, occupational hazards, poor knowledge of back care ergonomics, poor sitting, poor transferring and lifting techniques, obesity, pregnancy, long-distance driving, duty stress, psychological stress, and heavy physical work have all been linked to an increase in the prevalence of LBP in Africa (5). Falling from a great height and being involved in a car accident are two more trauma-related predisposing factors (RTA) (5). Among these, the most prevalent predisposing factor to LBP is poor lifting technique(5). Although there is growing evidence that exercises are the most effective way to reduce LBP recurrence and disability, in Africa, analgesics and rest are still the most common treatments. Other modalities of therapy for LBP, according to anecdotal evidence, include manual therapy and electrotherapy (5). Although non-operative treatment is the most common, spinal fusion has been utilized for nearly 90 years(6). For patients with chronic low back pain, multidisciplinary rehabilitation programs focusing on physical, psychological, social, and occupational issues have been proposed (6). Except for surgery, which looks to be beneficial with lumbar stenosis, an aggressive rehabilitation program, which may include physical therapy (PT), is usually the treatment of choice for addressing radiating lower extremities pain (7). Clinicians and researchers agree that myofascial trigger points (MTrPs) are a primary source of regional neuromusculoskeletal discomfort (8). MTrPs have been found in a variety of pain syndromes, including acute and chronic pain, as well as practically all orthopedic problems, according to several

investigations (8). Many persons with low back pain have recurring complaints, and they are the ones who bear the brunt of the disease burden(9). The term "chronic low back pain" refers to symptoms that last longer than three months (9). People with chronic low back pain commonly feel anxiety and despair, as well as negative consequences on their social, recreational, and work lives, in addition to pain and reduced function (9).

PATIENT INFORMATION

A 68-year female patient came to the hospital with complaints of chronic low back pain in the last 7 years radiating to the right as compared to the left in the lower limb. She was apparently alright before 7 years back then she started experiencing pain in the lower back. Pain has increased during the last two years and more so during the last 7 days. Pain is continuous throughout the day. Pain starts from the lower back radiating to right greater than the left. Posterior aspect of both lower limbs. Pain is mild to moderate in severity. Dull aching in nature. Pain in aggravating on walking, history of claudication present at 20 meters and required to sit. Pain is relieved on rest, medication, and hot fomentation.

No history of weight loss / loss of appetite / night sweats / heavy weight lifting / recent trauma.

The patient went to a private practitioner for the same and analgesic medication was taken.

PAST HISTORY: No history of hypertension, diabetes, asthma, or thyroid.

PERSONAL HISTORY:

Diet: Vegetarian

Sleep-wake cycle: Normal

Appetite: adequate

Bowel and bladder: Normal

FAMILY HISTORY: No blood bone disease present in the family.

CLINICAL FINDINGS: On General examination, the patient was conscious, cooperative, and well oriented with time,

place, and person and was comfortable in the supine and sitting position. The patient was afebrile at the time of examination. On physical examination, vital signs including temperature were normal, pulse rate 83beats/min, RR-21 breaths/min, BP-120/80mmhg. The cardiovascular and respiratory system was seen to be normal during the general examination. The chest appeared bilaterally symmetrical. Heart rate was normal regular rhythm the patient had no heart murmur. S1, S2 present. The apex beat was not visible. No focal neurological deficits. Abdominal examination - soft, non-tender, bowel sounds present. The pain was calculated using the Numerical Pain Rating Scale (NPRS) on which the patient marked 5/10 during rest and 8/10 during movement.

POSTURE

On physical assessment, it was noted that she had slouching posture due to pain. The pelvis was anteriorly tilted.

ROM

Rotation of the spine 35⁰ and painful to the right side, side flexion was also limited. The range of the upper limb was normal. The range of motion of the lower limb was normal.

MUSCLE POWER

On clinical examination, we found that the muscle power was grade 4. The muscle power was tested using manual muscle testing.

MANUAL PALPATION

Palpation was performed in a prone lying position with pressure applied only to initiate pain.

SPECIAL TEST

- SLR test was positive.
- Schober's test was positive.
- Slump test was positive.

EVALUATION

The patient's lower extremity and upper extremity range of motion and

strength were adequate. The patient was able to talk. She has difficulty walking and doing her basic activities of daily living such as bathing, combing, eating, toileting activities, etc.

DIAGNOSIS

The patient was diagnosed with PIVD at L5 S1 level with right side radiculopathy.

PHYSIOTHERAPY INTERVENTION:

Day 1- 1 week

Correction of posture and movement and local assistance. Electrotherapy modalities to reduce pain included superficial heat. Used to suppress muscle spasm TENS: It helps to reduced pain and Traction- beneficial for alleviating compression of nerve root and radiculopathy. Posterior or posterolateral protrusion- Passive Extension- Lateral shift correction. Correction of lateral shift- Passive flexion. The active set of exercises to improve range of motion, stretching of piriformis muscle to decrease tightness. Maintain/ improve neural tissues versatility.

1 week - 4 week

Easy spinal movements in pain-free areas. Isometrics of extensors. Promoting aerobic sports such as cycling, swimming.

Weeks 4- 12 weeks

Gentle active pain-free motion range exercises. Exercises for stretching and flexibility: lumbar muscles stretch and hamstring stretch was given. Core stabilization exercises help to increase the strength of the core muscles and reduce back pain. A home workout program was recommended after 12 weeks. It includes patient education, strengthening exercises, stretching exercises, and flexibility exercises. Strengthening and flexibility exercises - 10 repetitions twice a day Stretching exercises - 10 seconds hold. As the frequency and duration of exercise progressed, the addition of new exercises was prescribed.

Follow-up

Physiotherapy treatment was provided for three months and a home exercise program was prescribed.

DISCUSSION

The annulus fibrosus tears the pulposus nucleus into the spinal canal, causing herniated disc prolapse. Lumbar stabilization treatment is effective in treating patients with lumbar disc herniation because it increases muscle strength. According to O'Sullivan et al., there is a reduction in pain after a 10-week core stabilization exercises program is given to the patient, which is similar to the current study(1). PIVD and varicose veins can be challenging to treat simultaneously(2). The most frequent factors for all of the individuals were functional impairment and low back pain(3). There are various techniques to physiotherapy treatment of back pain, but traditional treatment usually includes exercises, core strengthening, and McKenzie extension exercise (3). The patient's lumbo-pelvic movement coordination deficiencies have previously been identified in the literature, and her response to stabilization was in line with what existing research indicated (7).

CONCLUSION

The findings demonstrate that electrotherapy modalities and lumbar and core stabilization exercises can help patients with prolapsed intervertebral discs strengthen their muscles and improve their functioning. It aids in the improvement of muscle functioning and the expansion of joint motion, which has a good impact on physical stability.

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