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EFFICACY OF NMRT ON INTRA VERTEBRAL DISC PROLAPSE: A CASE REPORT

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ABSTRACT
Chronic lower back pain (LBP) is a very common, and incapacitating ailment that is not well addressed. Most people get LBP from their intervertebral discs, which may degenerate and change in shape, composition, structure, and volume. The relationship between intravertebral Disc Degeneration (DD) and Persistent Lower Back Pain (LBP), As DD symptoms are present with out LBP. Epidemiological data from Karnataka indicate a high prevalence of LBP across multiple occupational groups, including traffic police (39.02%) and college students (45.6%), with significant burden also observed among IT professionals and healthcare workers. Nuclear Magnetic Resonance Therapy (NMRT), a novel therapeutic modality based on principles similar to magnetic resonance imaging (MRI), has emerged as a non-invasive treatment option. This case report evaluates the efficacy of NMRT in the management of intervertebral disc prolapse (IVDP) and associated disc degeneration.

KEYWORDS: Nuclear Magnetic Resonance Therapy, Intervertebral Disc Prolapse, Disc Degeneration, Low Back Pain.

INTRODUCTION

Intervertebral Disc Prolapse (IVDP), also called disc herniation, is a moderately common condition seen in 5–20 people among 1000 annually, more in males in their third to fifth decade of life. There is only limited conservative, effective treatments, out of which epidural corticosteroid injection is effective in reducing pain.[1] Surgery for lumbar disc herniation is an effective mode of treatment.[2] IVDP results from degeneration or trauma to the annulus fibrosus, leading to posterior displacement of nucleus pulposus material, which may compress spinal nerve roots. This can result in low back pain, radiculopathy, sensory disturbances, and motor dysfunction.

Even though surgical treatment provides faster relief from back pain, it is not beneficial in mid-term or long-term follow-up.[3] IVDP cases are very common in clinics[4], but there is a lack of prevalence data. Among these, management of acute cases effectively in a short span of time is not available. Intervertebral Disc Protrusion (IVDP) is caused by fissures in the lumbar intervertebral annulus degeneration or trauma. Under the action of external force, the nucleus pulposus and other intervertebral disc tissues bulge or protrude backward or rearward to stimulate and compress the spinal cord nerve roots. Furthermore, nerve root inflammation, nerve root dystrophy, and conduction damage are caused, and there are low back pain, sciatica, and even obvious nerve dysfunction.[5]

The incidence of this illness is growing year by year, owing to variables such as long-term sitting job and less physical activity. In both domestic and international medicine, there are several therapeutic options for lumbar intervertebral disc protrusion, which may be loosely split into two categories: surgical therapy and nonsurgical therapy.[6] According to statistics, active and suitable nonsurgical treatments, such as medicine, acupuncture, massage, lumbar traction, and physical therapy, may cure or ease 85 percent to 90 percent of patients with lumbar intervertebral disc protrusion. There are several clinical studies and procedures available. It has a unique healing effect, is simple to operate, is cost-

effective, is safe, is less uncomfortable, and has less adverse responses, among other qualities that have been extensively acknowledged.[7]

CASE REPORT

A 40-year-old male presented with acute onset low back pain following heavy weight lifting (gas cylinder) at home. The pain was sudden, severe, and associated with paraspinal muscle spasm and bilateral lower limb radiation. The patient experienced difficulty in ambulation and required assistance.

He suddenly collapsed to the ground with difficulty in getting up, again his family members assisted him to get up and made him lie down on his couch.

He consulted local physician for which he was advised Analgesics and Muscle relaxants, which were both Injectables and Oral medications, along with complete rest, with suggestion of wearing LS Corset.

Pain did not subside even after 1 week of medication, but the patient presented with aggravation of radiating pain in B/L lower limbs along with tingling and numbness sensation in B/L foot.

He was taken to Neurosurgeon for the aggravated symptoms such as Pain, Tingling and Numbness. There he underwent MRI in which he was diagnosed to have Intra Vertebral Disc Prolapse al L5 S1 level. Which was causing severe cord compression and along with B/L nerve root compression. With the canal diameter approx.. 6mm.

After having consultation with the neuro surgeon advised for Discectomy (L5 laminectomy along with L5 S1 discectomy). After hearing this patient attenders wanted to take second opinion.

Seeking a second opinion, the patient presented to Svasthi Orthopaedic and Respiratory Health Care. The patient was thoroughly examined and clinical findings presented were

CLINICAL EVALUATION

General Examination

- Pulse: 80 bpm
- Blood Pressure: 130/80 mmHg
- Temperature: 98.6°F
- Respiratory Rate: 21/min
- Height: 178 cm
- Weight: 85 kg

Local Examination

- Visual Analog Scale (VAS): 8–10
- Severe paraspinal muscle spasm
- Tenderness at L4–L5 and L5–S1
- Straight Leg Raising Test (SLRT): 20° bilaterally
- Positive Patrick's and Lasegue's tests
- Sensory changes in S1 dermatome
- Antalgic gait
- No motor deficits were noted.

SYSTEMIC EXAMINATION

- Central nervous system: Higher mental functions, Sensory, Motor, reflexes and Coordination intact.
- Cardiovascular system: S1 S2 heard, no added sounds.
- Respiratory system: Normal vesicular breathing sound heard, no added sounds.
- Per abdomen: Soft, non-tender

Vascularity examination

- Femoral pulse – Normal
- Popliteal pulse – Normal
- Posterior Tibial pulse – Normal
- Dorsalis pedis pulse – Normal

PERSONAL HISTORY

- Appetite: Good.
- Diet: Non-Vegetarian.
- Sleep: Disturbed,
- Bowel: Regular.
- Micturition: 5 –6 times per day.
- Habits: Tea 2 times/day.

Treatment Protocol

Phase 1: Initial Conservative Management (10 days)

- NSAIDs: Aceclofenac + Paracetamol.
- Muscle relaxant: Chlorzoxazone.
- Neuropathic agent: Pregabalin.
- Injectable therapy: Methylcobalamin,.
- Anti-inflammatory - Trypsin-Chymotrypsin.
- Bed rest and lumbar support.

Physiotherapy Modalities

1. Ultrasound therapy.
2. Interferential therapy (IFT).
3. Transcutaneous Electrical Nerve Stimulation (TENS).
4. Advanced robotic spinal decompression.

Outcome after 10 days

- VAS reduced from 10 to 5.
- SLRT improved to 80°.
- Negative special tests.
- Resolution of sensory symptoms.

Phase 2: NMRT Intervention

The patient underwent Nuclear Magnetic Resonance Therapy (QRST protocol) for 1 hour daily over 9 days, in combination with physiotherapy and spinal decompression.

Follow-Up and Outcomes

- Complete symptom resolution within 10 days of NMRT

- Independent ambulation restored
- Return to normal activities within 3 months

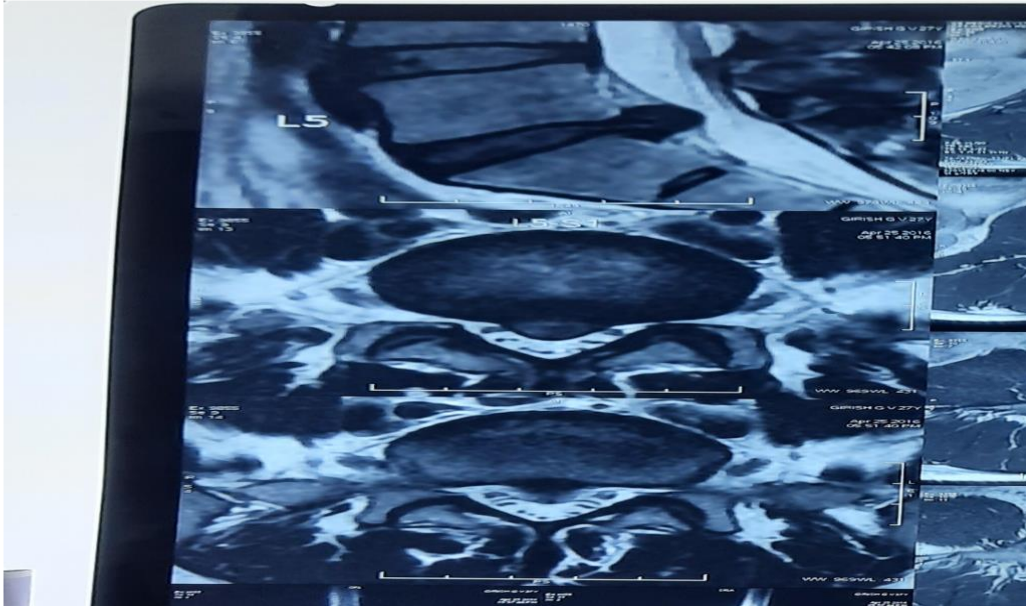
3-Month Evaluation

- SLRT: 90° bilaterally
- No neurological deficits

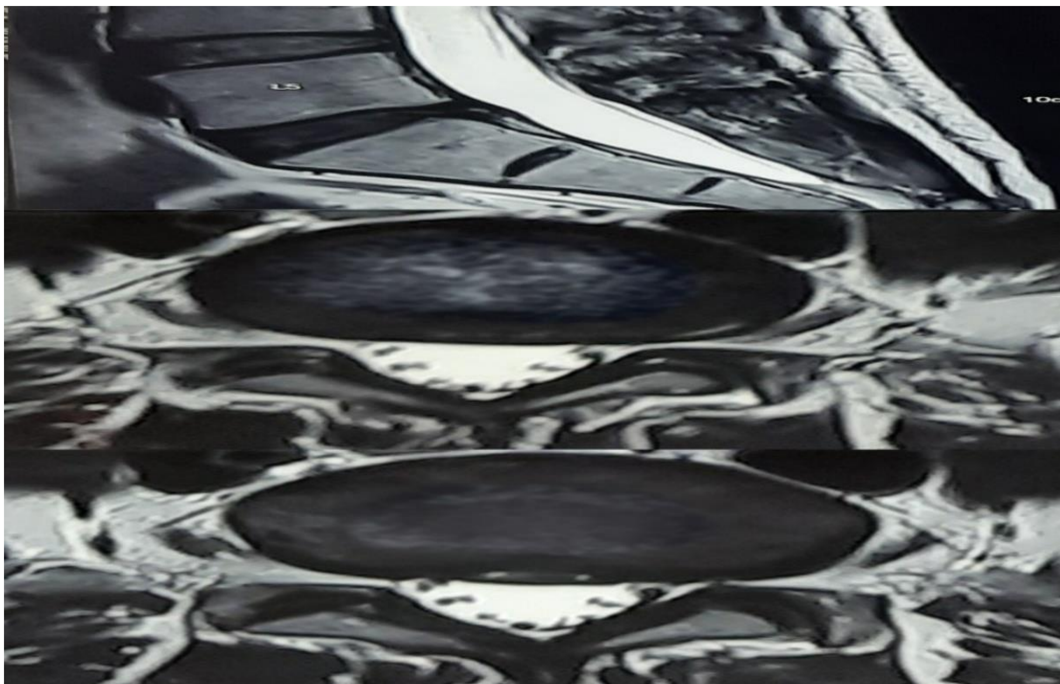
1-Year Follow-Up

- Patient remained asymptomatic
- MRI showed:
  - Recoil of L5–S1 disc protrusion
  - Improvement in canal diameter from 6 mm to 12 mm

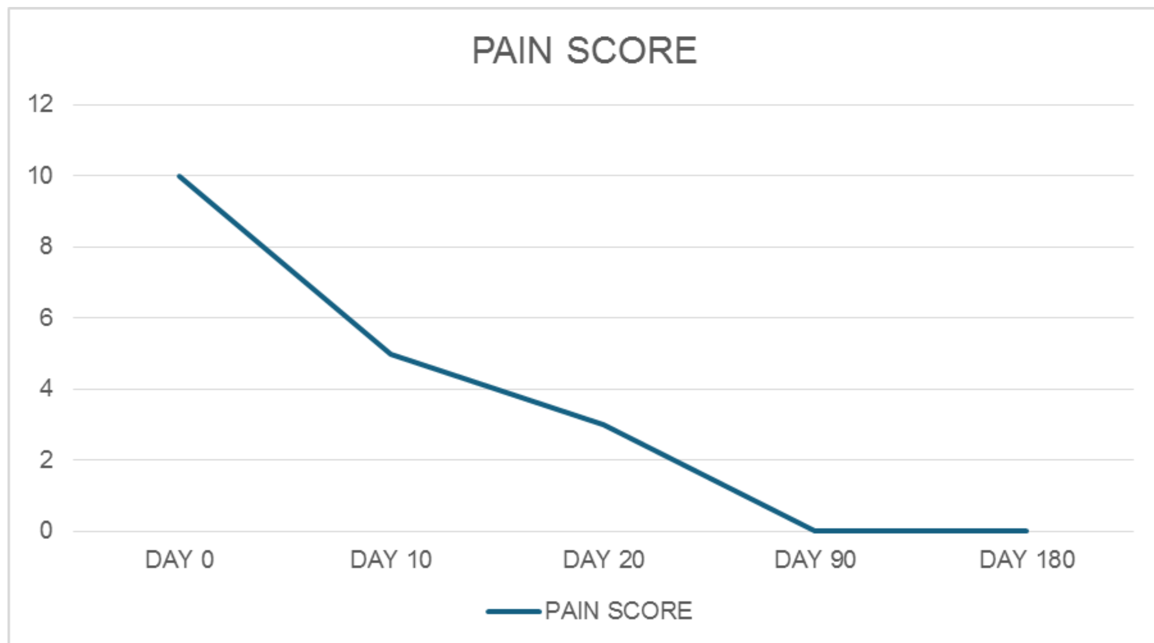
MRI REPORT



MRI – PRE TREATMENT DATED 21/3/2022.



MRI – AFTER TREATMENT DATED 04/05/2023.



GRAPH SHOWING PAIN SCORE (VAS)

DISCUSSION

Conservative management remains the gold standard for most lumbar disc prolapse cases, with success rates of 85–90%. Studies by Gugliotta et al. (2016) and Fjeld et al. (2019) demonstrate comparable long-term outcomes between surgical and non-surgical approaches.

This case highlights that even severe IVDP with significant canal compromise can be effectively managed without surgery through a structured, protocol-based approach.

In the present study not, all critical cases require surgery. Thorough examination with proper analysing the patient condition, can avoid surgery. Analysing the sensory motor examination has yielded a fruitful result. Here in this study the patient was initially put on muscle relaxants, NSAID, and rest which helped to stabilize the condition and to gain confidence of the patient. Later on subject was administered with Advance robotic decompression which helped in recoil of protruded of disc along with physiotherapy modalities.

These physiotherapy modalities like IFT, Ultrasound massage etc. will help in stimulating the paraspinal muscle. Relaxes the paraspinal spasm muscles, along with the NSAID and muscle relaxants which helped in the recoiling of the protruded Intra Vertebral Disc.

The role of MAGNETIC RESONANT THERAPY branded as **"QRST"** is an advanced treatment modality which helps in stabilizing the protruded Intra Vertebral Disc, and avoids it to protruding it further. MRT is hypothesized to enhance cellular metabolism through magnetic resonance-induced proton alignment, improving microcirculation and tissue repair.

In this case, rapid clinical improvement and significant MRI changes suggest a synergistic effect of NMRT with conventional therapy.

CONCLUSION

This study represents an excellent outcome of conservative management in the severe IVDP. The person who was advised for surgery was taken back to conservative treatment modality. He was been avoided from the consequences of the surgery without damaging any of the structures. Many of the cases of IVDP can be treated by the conservative manner, by following the Holistic way like Rest, NSAID, Physiotherapy and NMRT.

This present study is a need for an hour, This case report demonstrates that a protocol-based conservative approach incorporating Magnetic Resonance Therapy and physiotherapy can lead to significant pain reduction and functional improvement in condition like IVDP. The intervention is non-invasive, cost-effective, and suitable for outpatient settings. Larger clinical studies are required to establish standardized protocols and confirm long-term benefits.

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