World Journal of Pharmaceutical and Life Sciences

www.wjpls.org

Impact Factor: 8.21 Coden USA: WJPLA7

MANAGEMENT OF OSTEOARTHRITIS OF THE HIP USING MAGNETIC RESONANCE THERAPY: A CASE REPORT

Dr. Vasanth Raj Lakshman*, Dr. Tejas V.**

*Consultant Orthopaedic Surgeon, MBBS, D'Ortho, CPCR, EULAR, PGDCC, IFAAM, Svasthi Orthopaedic and Respiratory Health Care, Bengaluru 560056.
**Consulting Doctor QRST clinic Bangalore.

***Corresponding Author: Dr. Vasanth Raj Lakshman**

College of Pharmaceutical Sciences, Government Medical College, Thiruvananthapuram.

DOI: https://doi.org/10.5281/zenodo.19277472

How to cite this Article: Dr. Vasanth Raj Lakshman*, Dr. Tejas V.** (2026). Management Of Osteoarthritis Of The Hip Using Magnetic Resonance Therapy: A Case Report. World Journal of Pharmaceutical and Life Science, 12(4), 119-122.

Article Received on 03/03/2026 **Article Revised on 23/03/2026** **Article Published on 01/04/2026**

ABSTRACT

Background: Osteoarthritis (OA) of the hip is a chronic degenerative condition resulting in pain, restricted mobility, and functional disability. Conservative management remains the preferred initial approach in mild to moderate disease stages, with growing interest in non-invasive regenerative therapies. **Case Description:** A 62-year-old male with long-standing hip osteoarthritis (Kellgren–Lawrence grade II–III) presented with chronic pain, antalgic gait, and difficulty in activities of daily living despite prior pharmacological and physiotherapy interventions. **Intervention:** The patient underwent a structured conservative treatment protocol comprising conventional physiotherapy, strengthening exercises, and adjunctive Magnetic Resonance Therapy (QRST) administered over nine consecutive days. **Outcome Measures:** Pain intensity (Visual Analogue Scale), hip range of motion, gait pattern, and functional ability were assessed at baseline and follow-up. **Results:** At three months post-intervention, pain intensity reduced by approximately 70%, hip range of motion improved, gait normalized, and functional independence increased without adverse effects. **Conclusion:** Magnetic Resonance Therapy, when integrated with physiotherapy, may serve as an effective adjunct in the conservative management of hip osteoarthritis. Further controlled studies are recommended to validate its clinical efficacy.

KEYWORDS: Hip osteoarthritis, Magnetic Resonance Therapy, Conservative management, Physiotherapy, Case report.

INTRODUCTION

Osteoarthritis (OA) is the most prevalent form of arthritis and a leading cause of pain and disability worldwide. It is characterized by progressive degeneration of articular cartilage, subchondral bone remodeling, osteophyte formation, synovial inflammation, and periarticular muscle weakness.[1] OA is classified as primary (idiopathic) or secondary, the latter resulting from trauma, congenital deformities, or metabolic disorders.[2]

The hip joint, a major weight-bearing articulation, is commonly affected by OA and plays a crucial role in ambulation and postural stability.[3] Hip OA leads to pain, stiffness, gait abnormalities, and progressive functional limitation. Current understanding recognizes OA as a whole-joint disease rather than isolated cartilage degeneration.[4]

Conservative management—including pharmacotherapy, physiotherapy, and lifestyle modification—is recommended in early and moderate stages to alleviate symptoms and delay surgical intervention.[5] Novel non-invasive modalities such as Magnetic Resonance Therapy have emerged as potential adjuncts aimed at symptom modulation and tissue regeneration.

EPIDEMIOLOGY

Recent epidemiological data from India demonstrate a significant rise in osteoarthritis burden from 1990 to 2021. Hip OA prevalence increased from 1.1 million to

3.6 million cases, accompanied by increased incidence and disability-adjusted life years (DALYs). Females experienced a greater relative increase than males, with peak prevalence observed in the sixth decade of life.[7]

CASE REPORT

Patient Information

A 62-year-old male factory worker presented to Svasthi Orthopaedic and Respiratory Health Care, with complaints of chronic left hip pain, difficulty in walking, and pain during sit-to-stand activities.

Clinical History

The patient reported insidious onset of hip pain 15 years earlier, progressively worsening over time. His occupation involved prolonged standing (7–8 hours/day). Initial symptoms were neglected, followed by intermittent relief with analgesics and physiotherapy. Radiological evaluation elsewhere confirmed hip osteoarthritis, and surgical intervention was advised if symptoms worsened. Seeking non-surgical management, the patient presented to our centre.

PERSONAL HISTORY

- Appetite: Adequate
- Diet: Mixed (non-vegetarian)
- Sleep: Disturbed due to pain
- Bowel and bladder habits: Normal
- Habits: Tea consumption twice daily

CLINICAL EXAMINATION

General Examination

- Moderately built and nourished
- Pulse: 80 bpm
- Blood Pressure: 130/80 mmHg
- Respiratory Rate: 21/min
- Temperature: Afebrile
- No pallor, icterus, cyanosis, edema, clubbing, or lymphadenopathy

Systemic Examination

- CNS: Higher mental functions intact; motor and sensory systems normal
- CVS: Normal S1 and S2, no added sounds
- Respiratory System: Normal vesicular breath sounds
- Abdomen: Soft and non-tender

Local Examination of Hip

- Gait: Antalgic
- Swelling: Absent
- Tenderness: Present (VAS 6/10)
- Range of Motion: Painful and restricted in all planes
- Peripheral pulses: Normal

DIAGNOSIS

Osteoarthritis of the hip (Kellgren–Lawrence grade II–III)

INTERVENTION

1. **Initial Phase (15 days)**
   - Conventional physiotherapy
   - Analgesic medication

2. **Magnetic Resonance Therapy (QRST)**
   - Duration: 9 consecutive days
   - Session duration: 1 hour/day
   - Pre-treatment hydration: 250–300 ml water

3. **Rehabilitation Phase**
   - Hip, core, and back strengthening exercises
   - Home exercise program advised

4. **Post-Treatment Advice**
   - Continue daily activities without overstrain
   - Avoid prolonged standing and excessive loading

OUTCOME MEASURES AND RESULTS

Table 1: Pain Assessment (Visual Analogue Scale)

Time Point	VAS Score (0–10)
Baseline	6
1 Month	4
3 Months	2

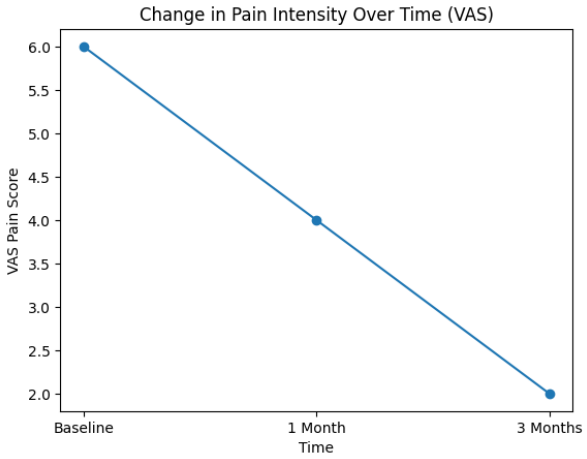

Figure 1: Change in Pain Intensity Over Time (VAS).

Figure 1.

Change in pain intensity measured using the Visual Analogue Scale (VAS) from baseline to three months following Magnetic Resonance Therapy and physiotherapy.

Description

A line graph depicting progressive reduction in pain intensity measured using the Visual Analogue Scale (VAS) from baseline to 3 months post-intervention.

Interpretation

The graph demonstrates a steady decline in pain severity from VAS 6 at baseline to VAS 2 at three months, indicating clinically meaningful pain relief following Magnetic Resonance Therapy combined with physiotherapy.

Table 2: Hip Range of Motion Assessment.

Movement	Baseline	3-Month Follow-up
Flexion	Painful, restricted	Improved, minimal pain
Extension	Painful, restricted	Improved
Abduction	Painful, restricted	Improved
Adduction	Painful, restricted	Improved

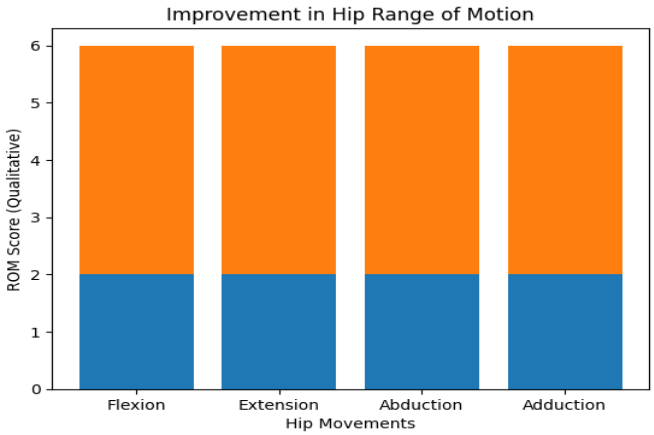

Figure 2: Improvement in Hip Range of Motion.

Figure 2.
Qualitative improvement in hip joint range of motion (flexion, extension, abduction, and adduction) from baseline to three-month follow-up.

Description (for manuscript)
A bar graph illustrating qualitative improvement in hip joint range of motion across flexion, extension, abduction, and adduction from baseline to 3-month follow-up.

Interpretation
All planes of hip motion showed functional improvement post-treatment, correlating with reduced pain and improved gait mechanics.

Table 3: Treatment Timeline.

Phase	Duration	Intervention
Phase I	15 days	Physiotherapy + analgesics
Phase II	9 days	Magnetic Resonance Therapy
Phase III	7 days	Strengthening exercises
Follow-up	3 months	Home exercise & activity modification

DISCUSSION

Hip osteoarthritis significantly impacts mobility, independence, and quality of life. Conservative management aims to reduce pain, improve joint mechanics, and delay surgical intervention.[6] Physiotherapy addresses muscular weakness and joint loading, while adjunctive modalities may enhance symptom control.

Magnetic Resonance Therapy is a non-invasive modality delivering low-intensity electromagnetic fields, proposed to influence cellular metabolism, ion transport, and microcirculation. Although the precise mechanisms remain under investigation, clinical improvements in pain and function observed in this case suggest a beneficial adjunctive role.

The integration of Magnetic Resonance Therapy with structured physiotherapy likely produced synergistic effects, improving neuromuscular control, reducing pain perception, and facilitating functional recovery. Patient-centered outcomes—pain reduction, gait normalization, and functional independence—were notably achieved without adverse effects.

Limitations include the single-case design, lack of imaging-based structural assessment, and absence of long-term follow-up. Nonetheless, the positive clinical outcome supports further investigation through randomized controlled trials.

CONCLUSION

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 moderate hip osteoarthritis. 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.

REFERENCES

1. Hutton CW. Osteoarthritis: The cause, not result, of joint failure? *Ann Rheum Dis*., 1989; 48(11): 958–961. doi:10.1136/ard.48.11.958
2. Aronson J. Osteoarthritis of the young adult hip: Etiology and treatment. *Instr Course Lect*., 1986; 35: 119–128.
3. Zhang Y, Jordan JM. Epidemiology of osteoarthritis. *Clin Geriatr Med*., 2010; 26(3): 355–369. doi:10.1016/j.cger.2010.03.001
4. Hutton CW. Osteoarthritis: The cause, not result, of joint failure? *Ann Rheum Dis*., 1989; 48(11): 958–961. doi:10.1136/ard.48.11.958
5. Murphy NJ, Eyles JP, Hunter DJ. Hip osteoarthritis: Etiopathogenesis and implications for management. *Adv Ther*., 2016; 33(11): 1921–1946. doi:10.1007/s12325-016-0409-3
6. Lespasio MJ, Sultan AA, Piuzzi NS, Khlopas A, Husni ME, Muschler GF, Mont MA. Hip osteoarthritis: A primer. *Perm J*., 2018; 22: 17-084.
7. Sanchez-Dopazo R, Rathod M, Shandilya A, Vala J, Kalra E, Giri T, et al. Statewide burden of osteoarthritis in India and its trend from 1990–2021: A benchmarking analysis. *Arthritis Rheumatol*. 2024; 76 Available from: https://acrabstracts.org/abstract/statewideburden-of-osteoarthritis-in-india-and-its-trend-from-1990-2021-abenchmarking-analysis/