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Research Article

Efficacy of Chakrasiddh Osteoarthritis Therapy (COAT) in the Management of Azhal Keel Vaayu (Osteoarthritis): A Case Report

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Abstract

Osteoarthritis (OA), known as *Azhal Keel Vaayu* in Siddha medicine, is a degenerative joint disorder that causes pain, stiffness, and reduced mobility, significantly affecting the quality of life in elderly individuals. Conventional treatments such as medications and surgeries often focus on temporary pain relief and may lead to side effects or limited long-term benefits. Chakrasiddh osteoarthritis therapy (COAT) specifically designed for degenerative knee joint conditions, providing a non-invasive, drug-free alternative aimed at correcting biomechanical imbalances and restoring joint function through Varmam therapy, dietary regulation, and lifestyle modification.

A 54-year-old female patient with a 10-year history of bilateral knee pain, swelling, and restricted mobility underwent a 23-day COAT protocol at Chakrasiddh Holistic Healing and Research Centre, Hyderabad. The therapy included targeted Varmam point stimulation, joint mobilization, and personalized nutrition plan. Pain and function were assessed before and after treatment using the Visual Analog Scale (VAS), Range of Motion (ROM), and the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Post-treatment evaluation revealed marked improvement in all parameters: VAS score reduced from 8 (severe) to 2 (mild, 80% pain reduction), swelling subsided by 70%, and joint mobility improved by 70%. The WOMAC index showed a 72% enhancement in pain relief, flexibility, and physical function. The patient regained the ability to walk, climb stairs, and stand for prolonged periods without discomfort.

This case suggests that COAT can effectively reduce pain and inflammation, enhance mobility, and the quality of life without pharmacological or surgical intervention in osteoarthritis patients, offering a safe and sustainable holistic alternative to conventional therapy for osteoarthritis management.

Keywords: Osteoarthritis, Azhal Keel Vaayu, Siddha, Chakrasiddh Osteoarthritis Therapy (COAT), Holistic Healing, Non-invasive Therapy.

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Introduction

Osteoarthritis (OA) is the most prevalent form of arthritis, affecting millions globally and constituting a major cause of chronic disability among the aging population. It is characterized by progressive cartilage degeneration, subchondral bone remodelling, synovial inflammation, and

loss of joint function [1,14]. Globally, OA ranks among the top ten disabling conditions, with the knee being the most affected joint. According to WHO estimates, 10–15% of individuals above 60 years of age suffer from some degree of OA, significantly impairing daily functioning and productivity [2]. OA primarily affects weight-bearing joints such as the knees, hips, and spine; radiating pain is felt at ankles and calf muscles too. Its etiology is multifactorial- aging, obesity, mechanical overuse, prior injury, and genetic predisposition are key contributors [3]. Clinically, patients experience pain, stiffness, tenderness, and restricted movement, with radiographic evidence of joint space narrowing and osteophyte formation. Modern medical management includes analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections [4], physiotherapy [5], and, in advanced cases, surgical joint replacement [6]. While these interventions alleviate symptoms for some time, they rarely modify the disease progression and often come with adverse effects such as gastrointestinal bleeding, renal dysfunction, and increased cardiovascular risk [2].

The traditional Siddha conceptualizes osteoarthritis as *Azhal Keel Vaayu*, arising from derangement of *Vatham* (principle governing movement) and *Azhal* (pitha), leading to inflammation, stiffness, and degeneration [7]. Siddha Varmam Therapy, a specialized manipulation of bioenergetic points (Varmam) is employed to restore the physiological balance of *Vatham*, relieve pain, and rejuvenate musculoskeletal function. Additionally, the therapy helps regain joint mobility and flexibility through holistic practices, including physical manipulations and traditional remedies, contributing to better daily functioning and physical activity [8]. Moreover, OA is a leading cause of altered quality of life due to anxiety and depression, so beyond physical benefits, Siddha's comprehensive approach significantly boosts patients' mental well-being, stress levels, and vitality, marking a stark contrast to the limited scope of NSAIDs that focus solely on pain management without addressing the broader spectrum of health and well-being [9].

Chakrasiddh Osteoarthritis Therapy (COAT) is a structured Siddha-based, non-invasive treatment protocol specifically designed for degenerative knee joint conditions such as osteoarthritis. Similar in philosophy to CSET, COAT focuses on correcting functional and biomechanical disturbances in knees rather than merely suppressing the symptoms. The therapy integrates precise manual pressure techniques on selected Varmam points around the knee, spine, and related neuromuscular pathways to relieve pain, reduce stiffness, and improve joint nutrition [10]. These targeted stimulations help normalize neuromuscular signalling, enhance local circulation, and decrease inflammatory congestion commonly seen in osteoarthritic knees. COAT is complemented by individualized dietary regulation aimed at reducing toxins causing swelling, degenerative load, improving tissue metabolism, and supporting cartilage health, along with guided knee-specific corrective exercises that restore range of motion, strengthen periarticular muscles, and improve joint stability [11]. This integrative approach addresses both local knee pathology and contributing systemic factors, enabling functional recovery, delayed disease progression, and sustained improvement in mobility without reliance on medication or surgical intervention.

This case report illustrates the clinical outcomes of a patient with chronic osteoarthritis treated exclusively with COAT based Siddha Varmam Therapy, evaluating symptomatic and functional improvement through standardized assessment scales.

Case Presentation

Patient Information

A 54-year-old female from Hyderabad presented to Chakrasiddh Holistic Healing & Research Centre with chief complaints of severe bilateral knee pain radiating to the feet, stiffness, and difficulty walking for the past 10 years. She was on antihypertensive medications for the past 6 years with no history of trauma, infection, or previous joint surgery. She reported weight gain and sedentary lifestyle as contributing factors to her knee pain. She had previously taken multiple consultations with orthopaedic surgeons with only short-term or incomplete relief, with knee pain and stiffness returning soon after discontinuation of treatment. She was advised Bilateral knee Replacement surgery as a definitive option; however, due to concerns about invasiveness, recovery time, and long-term outcomes, she chose to avoid surgical intervention and explored multiple conservative approaches. She underwent nearly four months of structured physiotherapy and tried various other alternative treatments, including Ayurvedic therapies [12]and traditional Kerala oil massages [13], but these modalities resulted only in temporary symptomatic relief, with recurrent pain, swelling, and functional limitation over time. Seeking a sustainable, non-surgical solution for long-standing knee symptoms, she subsequently approached Chakrasiddh with the intent of achieving long-term recovery and functional improvement without surgery.

On taking detailed history of pain, she told her pain had progressively worsened over time, limiting her daily activities. In last six months, the symptoms worsened with prolonged sitting (>20 min) or standing (>15 min) and walking (>15 min). Functional mobility was significantly restricted, impacting her routine personal activities and due to this weight gain was visible.

Clinical Findings

On clinical examination of patient, it was noted that pain was at multiple areas, around knees and at calf muscles. On physical examination, the patient presented with moderate to severe knee pain, with a Visual Analog Scale (VAS) score of 8/10. Moderate periarticular swelling was observed, accompanied by tenderness along both the medial and lateral joint lines on palpation. Audible crepitus was noted during active flexion and extension of the knee joint, indicating degenerative changes. The range of motion was significantly restricted, with knee flexion limited to less than 90 degrees (flexion < 90°). Gait assessment revealed an antalgic pattern with mild limping, suggestive of pain-related functional impairment during ambulation.

MRI and X-ray Findings

At the time of admission, baseline radiological investigations were performed to assess the extent of joint pathology and to facilitate comparison with post-therapy findings.

MRI Report (B/L)

Clear signs of degenerative changes, thinning and irregularity of the articular cartilage, more pronounced in the medial femorotibial compartments bilaterally. no evidence of acute meniscal tear and no signs of acute ligamentous injury. Both knees had mild joint effusion with synovial thickening suggestive of chronic inflammation. Subchondral marrow edema and early osteophyte formation were observed, indicating ongoing degenerative processes.

X-ray Report (B/L – Standing AP and Lateral Views)

Bilateral knee osteoarthritis, with asymmetric narrowing of the medial joint spaces, more marked on the left side. Marginal osteophyte formation along the tibial plateau and femoral condyles. Subchondral sclerosis and early subchondral cystic changes were noted, consistent with degenerative joint disease. Suggestive of moderate osteoarthritic changes (Kellgren–Lawrence Grade II–III) in both knees [14].

Outcome Assessment Tools Used

The assessment was analysed based on pre and post therapy scores of different baseline values gathered from in-house symptom tracking questionnaires and standard clinical tools built on following scales-

- VAS score– Recorded pain intensity (8/10) at start of therapy [15]
- Western Ontario and McMaster Universities Osteoarthritis Index **(WOMAC)**- 68 [16]
- Range of Motion (goniometric)- Restricted (<90°)
- Gait Analysis – Mild limping

Treatment Protocol

The patient was subjected to a customized Siddha protocol, COAT for both knees, administered over four-weeks period, followed by scheduled follow-up evaluation after three months. The COAT therapy intervention included:

Manual Pressure Manipulation (Varmam & Energy points): (Table-1)

Specific *Varmam* points [17] associated with knee joint health Panchmuga Varmam, Mottu varmam, Komberikalam, Varmam were stimulated manually to enhance local circulation, release blocked energy, and balance *Vatham*. Each session lasted 45–60 minutes, performed daily by trained Siddha therapists under the supervision of senior practitioners. Two specialized energy sessions of 20-25 minutes were administered focusing on deep energetic realignment and spine correction in second week to remove any past incidences.

Physiological Rehabilitation

Mild, guided stretching and range-of-motion exercises were introduced after one week of therapy under physiotherapist supervision to reinforce muscular flexibility and joint alignment.

Dietary Intervention

An anti-inflammatory Siddha-based diet was prescribed, emphasizing on warm, light foods such as millets, vegetables, and soups to enhance metabolic activity. Cold foods, oily and fermented food were avoided. Spices such as turmeric, dry ginger, and cumin are incorporated for their *Vatha*-balancing and circulation-enhancing properties. For joint lubrication and detoxification, adequate hydration and seasonal adjustments were emphasized.

Lifestyle modifications

Patient was counselled for posture correction and correct walking style to reduce wrong pressure on hips and knees. Some easy yoga postures were done for 10-minutes daily under guided supervision of Yoga therapist at centre. Some tips like avoiding long standing and squatting, steps taking were introduced due to her weight and some home-based mobility exercises were incorporated.

Before initiation, previous X-rays were reviewed with the patient to visualize the extent of degeneration and expected post-therapy changes. Continuous feedback sessions were maintained to track symptomatic progress and emotional well-being.

Table 1. *Varmam points stimulated to achieve a therapeutic effect for Osteoarthritis in knee*

Varmam Points (21)	Location	Traditional Action
Panchamuga Varmam	Around the patella	Releases the tight muscles around the knee joint for increase in flexibility, reducing crepitus, improving range of motion
Moottu varmam	Centre of popliteal fossa	neuromuscular reflexes, venous return, and soft tissue relaxation
Komberi Kalam	Eight fingerbreadths above the medial malleolus	Relieves ankle, foot pain, swelling, improves gait and balance
Kaal sanni Adangal	the junction of big and second toe	Reduce referred pain, enhance gait balance and weight bearing capacity
Ullankaal Vellai Varmam	At the junction of big and second toe in plantar region	Relieves radiating pain, reduces sciatic nerve compression
ViruthiKalam	At The Level of Distal end of First Meta Tarsal Bone	reduce distal muscle tension, and improve load distribution across the knee joint.

Results

Objective evaluation post-therapy using validated clinical scales demonstrated marked improvement following CSET in all parameters (Table-2). Pain intensity, assessed by the VAS, showed a substantial reduction from 8/10 at baseline to 2/10, after four weeks, indicating effective and sustained pain relief. Functional assessment using the WOMAC index revealed substantial improvement, with reductions observed across stiffness, and physical function domains with values declining from 68 to 19 post therapy. Clinical signs of inflammation and joint pathology improved considerably, with swelling reducing from moderate to mild, tenderness resolving completely, and crepitus decreasing from moderate to mild. Functional assessment revealed significant gains in joint mobility and gait mechanics. Knee range of motion improved from a restricted flexion of 95° to 120°, reflecting enhanced joint flexibility and biomechanical efficiency. Gait analysis showed normalization of walking pattern, with a marked reduction in antalgic gait and limping, allowing longer periods of ambulation without discomfort.

Symptom-specific functional feedback further corroborated these findings. Prior to therapy, the patient experienced moderate to severe knee pain and stiffness that limited daily activities. Post-therapy, functional endurance improved, with walking and standing tolerance increasing from approximately 10 minutes with pain to over 30 minutes with only mild discomfort. Activities that had been avoided for more than two years, such as climbing stairs, were performed comfortably, and the patient regained the ability to sit on the floor for extended periods with minimal symptoms. The sleep quality too was normalized, which was hampered due to pain and discomfort in night time. Collectively, these results indicate that COAT produced significant reductions in pain and inflammation, restoration of joint mobility, and meaningful functional recovery, supporting its role as an effective non-surgical intervention for knee osteoarthritis–related disability. At a follow-up evaluation after 3 months, the patient-maintained improvements, reporting sustained pain relief and increased mobility. No recurrence or side effects were noted.

The post-treatment X-ray revealed improved joint alignment with better tibiofemoral congruency, particularly in the medial compartment. Joint space narrowing appeared relatively stabilized compared to pre-therapy images. There was a reduction in periarticular soft-tissue shadowing, suggestive of decreased inflammatory changes around the joint. Marginal osteophytes were still present; however, they appeared less prominent functionally, correlating with the patient's improved range of motion and reduced crepitus on clinical examination. No new degenerative changes or subchondral collapse were observed. (Fig-1)

Table 2. *Pre- and Post-Therapy Evaluation Scores*

Outcome Measures	Pre Therapy	Post Therapy	Improvement (%)
VAS (Pain)	7/10	2/10	80%
Swelling	Moderate	Mild	70%
Tenderness	Present	Absent	100%
Crepitus	Moderate	Mild	70%
Range of Motion (Flexion)	Restricted (<90°)	Improved (120°)	70%
Range of Motion (Flexion)	Restricted (<90°)	Improved (120°)	70%
Gait	Limping	Normalized	75%
WOMAC Total Score	68	19	72%

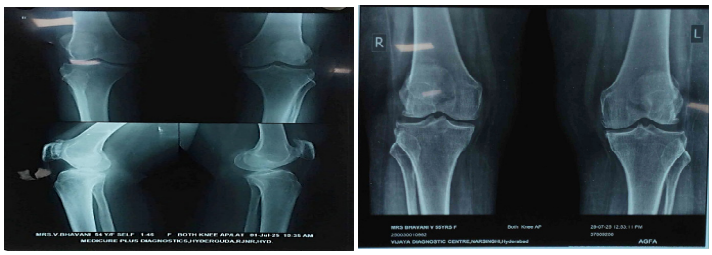

Figure 1. *Pre and Post therapy knee x-rays*

Discussion

Osteoarthritis (OA) is a chronic, progressive joint disorder characterized by cartilage degeneration or breakdown, synovial inflammation, pain, stiffness, and functional limitation [14,18]. In Siddha philosophy, OA corresponds to *Azhal Keel Vaayu*—a condition caused by imbalance of *Vatham* (movement principle) and *Azhal* (heat principle), leading to inflammation, stiffness, and degeneration of joints. The incidence of OA has increased above 7% of the global population with one of one of the leading causes of adult disability in 12-15% adults above 60 years of age and is seriously affecting the quality of life [2,19]. Conventional management strategies primarily focus on symptomatic relief through analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), intra-articular injections, and, treated surgically at severe stages by knee and hip replacements [3,4]. However, these approaches often provide temporary relief, carry serious side effects, including GI irritation, bleeding, and decreased renal blood flow or may not be acceptable to patients seeking non-invasive and holistic solutions. In this context, the present case highlights the therapeutic potential of Chakrasiddh Osteoarthritis Therapy (COAT) as an integrative Siddha-based intervention for osteoarthritis management.

The outcomes observed in this case marked reduction in pain, improvement in joint mobility, normalization of gait, and enhanced functional independence are comparable with results reported in other conservative and alternative treatment modalities. A recent study on Physical therapy for OA from systematically compared the relative efficacy of different exercises for pain, joint function, performance, and quality of life in 9134 OA patients from 103 clinical trials [19]. A retrospective analysis of prospectively collected data from the chiropractic program at Canadian healthcare facility was conducted with statistically significant improvements in pain numeric rating scale scores were demonstrated by point change reductions from baseline to discharge visits like our study outcome [20]. There is a grave similarity of COAT to physiotherapy and chiropractic approaches, they all emphasizes correction of biomechanical imbalances, particularly those originating from the spine and lower limb leading to increased abnormal load transmission across the knee joint, accelerating degenerative changes. By addressing these proximal contributors, COAT aligns with modern biomechanical concepts used in musculoskeletal rehabilitation.

A study reported that massage therapy improved stiffness, function, and pain in 30 patients as compared to control group who were treated conventionally, the reason being massages causes muscle relaxation and an increase in blood flow in the inflamed area, this shows similarity to energy point stimulation in COAT [21]. A systematic review including eight RCTs assessing the effectiveness of acupressure for OA treatment, acupressure showed favorable effects in reducing pain, relieving stiffness, and improving physical function of the patients [22]. Varmam therapy, a core component of siddha, shares conceptual similarities with both massages and acupressure, and have demonstrated efficacy in reducing pain and improving function in knee osteoarthritis. Stimulation of specific Varmam points may influence the body's self-healing capacity due to a increased local circulation, tissue regeneration, and pain modulation pathways, thereby reducing myofascial stiffness and inflammatory responses around the joint [23]. Unlike isolated point-based therapies, COAT integrates Varmam stimulation with manual knee and ankle realignment, offering a more comprehensive approach that targets both local joint pathology and associated areas affected by the postural dysfunction.

In another study of total of 8 trials involving 756 OA patients, the results indicated that compared to the control group, people who were performing yoga exercise showed significant improvements in alleviating pain, stiffness and mobility which resembles our result in this case [24]. The incorporation of personalized corrective exercises and yoga-based mobility practices in COAT emphasize strengthening periarticular musculature, improving joint range of motion, and enhancing proprioception. These components likely contributed to the observed improvements in knee flexion, gait normalization, and endurance in daily activities such as walking, stair climbing, and floor sitting proved in many siddha studies related to musculoskeletal disorders [25]. Additionally, tailored dietary modifications including anti-inflammatory diet (turmeric, ginger, cumin) helped in reducing inflammation and supporting tissue repair as shown in other many studies. In a study done to influence the inflammatory processes underlying OA on 100

patients, an emphasis on fruits, vegetables, whole grains, and healthy fats, was administered in their daily diet along with turmeric and cumin which have anti-inflammatory properties [26]. Empirical evidence indicated notable reduction of inflammation, and swelling, weight loss, suggesting this might be promising for OA just as in this case.

Chronic pain is closely associated with stress, fear of movement, and reduced quality of life which is determined by many scholars worldwide. A cross-sectional study conducted among 300 females aged above 60 years with OA, demonstrated a significant correlation between anxiety and depression with lower quality of life. The results emphasised on a holistic way of treating OA and to integrate psychological evaluation and care into the regular OA treatment to enhance patient outcomes [9]. A case report of RA patient by same authors demonstrated patient-centeric approach of siddha therapy and lifestyle counselling sessions done by the experts addressing the psychosocial and behavioral dimensions of disease. The patient showed enhanced confidence, adherence, and overall well-being, contributing to sustained functional recovery like in this case [27].

Several Siddha-based clinical studies and observational reports have demonstrated the effectiveness of Varmam therapy in the management of Azhal Keel Vaayu, corresponding to OA. A study involving 60 adults with osteoarthritis found that Siddha Varmam therapy significantly reduced pain, stiffness, and improved function compared with standard care measured by VAS and WOMAC, highlighting the effectiveness of Varmam as a non-invasive traditional intervention for OA management [28]. Randomized and pilot studies involving adults with knee osteoarthritis have highlighted that external Varmam stimulation, when applied to specific bioenergetic points around the joint and along related nerve pathways, can produce sustained symptomatic relief without pharmacological intervention. A case report, a 38-year-old male with chronic knee joint pain due to ACL tear showed marked reduction in pain and improved range of motion after a regimen of Varmam therapy, demonstrating the potential of external physical Varmam stimulation in osteoarthritic conditions [29]. Surveys and practitioner-based documentation from Tamil Nadu also reinforce the traditional and widespread clinical use of Varmam in degenerative joint disorders, reinforcing the traditional clinical use of point-based energy stimulation for joint symptom relief. Additionally, integrated Siddha regimens combining Varmam with supportive external therapies and lifestyle guidance have demonstrated superior outcomes compared to symptomatic care alone. These findings align closely with the outcomes observed in Chakrasiddh Osteoarthritis Therapy (COAT), which builds upon classical Siddha principles by integrating Varmam-based neuromuscular stimulation with spinal alignment, corrective exercises, and dietary regulation, thereby offering a more comprehensive and system-oriented approach to osteoarthritis management [30].

In this case, the integrative nature of COAT appears to have produced synergistic benefits, leading to significant clinical and functional improvements without pharmacological or surgical intervention. The outcomes suggest that COAT may serve as a viable adjunctive therapy for osteoarthritis, particularly for patients seeking holistic, non-invasive management options. While the findings are encouraging, larger observational studies and controlled clinical trials are warranted to further validate the effectiveness, reproducibility, and long-term benefits of COAT in osteoarthritis care.

Conclusion

This single-case report highlights the therapeutic efficacy of Siddha Varmam Therapy through Chakrasiddh Osteoarthritis Therapy in treating *Azhal Keel Vaayu* (Osteoarthritis). The approach demonstrated remarkable improvements in pain, flexibility, and functionality within a short duration, with sustained effects observed at follow-up. Being a drug-free, non-invasive, and holistic system, COAT offers a promising alternative to conventional OA management, free from adverse effects of pharmacological therapies. Further large-scale clinical studies are warranted to establish its role as an evidence-based complementary therapy in chronic joint disorders.

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