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A Comprehensive Case Study on *Ayurvedic* Management of *Sandhi Shoola* (Joint Pain) and Associated Conditions: An Integrative Approach

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Abstract

This case study examines the *Ayurvedic* management of a 59-year-old male patient presenting with *Sandhi Shoola* (joint pain), *Asthigata Vata* (a condition analogous to osteoarthritis), and associated systemic conditions, including obesity and hypertension. The primary complaints were pain and swelling in the right knee joint, difficulty walking, and general joint stiffness. Diagnostic investigations, including an MRI, revealed a Grade III horizontal meniscal tear in the posterior horn of the medial meniscus, ligamentous sprain, and marginal osteophytes indicative of early osteoarthritis. Elevated uric acid levels were also noted, contributing to the inflammatory process. A comprehensive treatment plan rooted in *Ayurvedic* principles was implemented, incorporating *Panchakarma* therapies such as *Abhyanga* (therapeutic massage), *Swedana* (sudation therapy), *Janu Basti* (medicated oil retention therapy), and *Shirodhara* (oil dripping therapy). Additionally, *ayurvedic* formulations like *Maharasnadi Kwatha*, *Yograj Guggulu*, and dietary modifications emphasizing anti-inflammatory and *Vata-pacifying* properties were prescribed. The intervention was complemented by lifestyle adjustments, including mild physical activity and stress management techniques like yoga and meditation. Post-treatment, the patient exhibited significant clinical improvements, including reduced joint pain and swelling, improved mobility, and normalization of vital parameters. Uric acid levels decreased from 7.80 mg/dl to 3.10 mg/dl over the treatment course, reflecting metabolic stabilization. The patient's overall quality of life was enhanced, with a marked reduction in pain scores from 7/10 to 4/10 and improved physical function. This case highlights the efficacy of integrative *Ayurvedic* treatment in addressing chronic musculoskeletal disorders and associated comorbidities. It emphasizes the potential of *Ayurveda* as a holistic, patient-centered approach that not only manages symptoms but also improves systemic health and well-being. Further studies and controlled trials are recommended to validate these findings in a broader population.

Keywords: *Sandhi Shoola*, *Asthigata Vata*, *Ayurvedic* Management, *Panchakarma* Therapies, Joint Pain Treatment, Osteoarthritis, *Maharasnadi Kwatha*, *Yograj Guggulu*.

Introduction

Joint pain, commonly referred to as *Sandhi Shoola* in *Ayurveda*, is a prevalent musculoskeletal disorder characterized by pain, swelling, stiffness, and limited joint mobility. It often results from degenerative processes, inflammatory conditions, or metabolic imbalances such as elevated uric acid levels. Osteoarthritis, the most common cause of joint pain, is a progressive disorder leading to cartilage degeneration and subchondral bone changes [1]. These conditions not only impair physical function but significantly impact the quality of life, especially in middle-aged and elderly populations [2].

In *Ayurveda*, joint pain is described under the umbrella of *Asthigata Vata* and *Sandhi Shoola*, resulting from the

aggravation of *Vata Dosha* and depletion of *Shleshaka Kapha* (synovial fluid). Classical *Ayurvedic* texts like *Charaka Samhita* and *Sushruta Samhita* emphasize the role of improper lifestyle, dietary habits, and aging as contributory factors [3]. Previous studies have demonstrated the efficacy of *Panchakarma* therapies like *Janu Basti* and *ayurvedic* formulations such as *Maharasnadi Kwatha* and *Yograj Guggulu* in managing joint pain, reducing inflammation, and improving mobility. Recent works highlight the importance of integrative approaches combining *Ayurvedic* and modern diagnostics for a better understanding and treatment of such conditions [4].

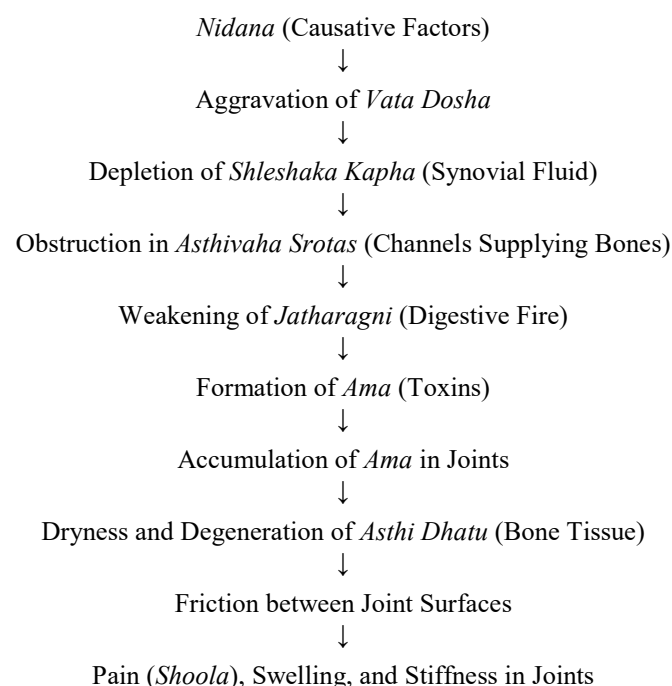
From a modern medical perspective, joint pain, particularly due to osteoarthritis, involves mechanical wear and tear of

articular cartilage, subchondral sclerosis, and osteophyte formation. Conditions such as meniscal tears, ligament sprains, and metabolic disorders like gout can exacerbate joint dysfunction [5]. Diagnostic tools like MRI and serum uric acid tests play a crucial role in assessing the underlying pathology. Conventional management typically includes analgesics, NSAIDs, physiotherapy, and in severe cases, surgical interventions such as joint replacement. However, these interventions often focus on symptomatic relief rather than addressing the root causes or improving overall health [6].

Ayurveda Aspect – Samprapti Ghatak

In *Ayurveda*, the pathology of *Sandhi Shoola* and *Asthigata Vata* is explained through the lens of *Samprapti* (disease manifestation).

- **Dosha Involvement:** Aggravation of *Vata Dosha* due to factors such as cold exposure, aging, improper diet, and stress.
- **Dushya (Affected Tissues):** *Asthi Dhatu* (bone tissue) and *Shleshaka Kapha* (synovial fluid).
- **Srotas (Channels):** Obstruction or dysfunction in *Asthivaha Srotas*.
- **Agni (Digestive Fire):** Weak *Jatharagni* (digestive fire) and *Dhatvagni* (metabolic fire) leading to the formation of *Ama* (toxins).
- **Samprapti Vichara (Pathogenesis):** Aggravated *Vata Dosha* dries up *Shleshaka Kapha*, causing friction between joint surfaces, leading to pain, stiffness, and swelling. The accumulation of *Ama* exacerbates the inflammatory process, contributing to swelling and joint dysfunction [7].



Case Report

a) Patient History and Information

The patient, a 59-year-old male, presented with chronic joint pain and swelling in the right knee, primarily affecting mobility and daily activities. He reported a history of high blood pressure (15 years) managed through allopathic medications. Previously, no consistent *Ayurvedic* treatments were undertaken for joint pain. Allopathic intervention included NSAIDs for symptomatic relief and occasional physiotherapy, but symptoms persisted with no long-term

improvement.

b) OPD 1 - Onset Progress Duration

- **Onset:** Gradual onset of pain and swelling in the right knee over the past year, worsening in the last six months.
- **Progress:** Progressive difficulty in walking, climbing stairs, and performing daily tasks due to stiffness and pain, particularly during weight-bearing activities.
- **Duration:** Symptoms have persisted for over a year, with no significant relief despite previous treatments.

c) Vitals (At Initial Presentation)

- **Pulse:** 72 bpm
- **Blood Pressure:** 140/80 mmHg
- **Weight:** 104 kg
- **Temperature:** 98°F
- **Pain Score:** 7/10
- **Respiration Rate:** 16/min

d) Investigation Assessment

i). MRI Findings:

- Grade III horizontal meniscal tear in the posterior horn of the medial meniscus.
- Mild knee joint effusion with marginal osteophytes.
- Ligamentous sprain in the anterior cruciate ligament.
- Early changes suggestive of osteoarthritis.

ii). Biochemical Investigations:

- **Uric Acid (Pre-Treatment):** 7.80 mg/dl (elevated).
- **Uric Acid (Post-Treatment):** 3.10 mg/dl (normalized).

iii). Clinical Observations:

- Swelling and tenderness in the right knee joint.
- Reduced range of motion and significant stiffness, particularly during the morning hours.

Intervention

1. Treatment

A comprehensive treatment plan was designed, incorporating *Panchakarma* therapies, *ayurvedic* medications, dietary adjustments, and lifestyle modifications to address the underlying *Vata* imbalance, *Ama* accumulation, and systemic comorbidities.

2. Diet (DIP Diet)

The patient was advised to follow a DIP (Disease Prevention) Diet, focusing on:

- Anti-inflammatory and alkaline foods to reduce *Ama* and inflammation.
- Incorporation of fresh vegetables, seasonal fruits, and whole grains.
- Avoidance of red meat, high-fat dairy, refined sugars, and processed foods.
- Emphasis on lukewarm water intake and easily digestible meals.

3. Lifestyle Modifications

- **Ongoing Allopathic Treatment:** Continued

antihypertensive medication under the supervision of the primary care physician.

• **Ayurvedic Guidelines:**

- Regular mild exercise such as yoga (*Vata-pacifying asanas*).
- Daily meditation and stress-relief practices.
- Adequate sleep and a consistent wake-sleep cycle.
- Avoidance of cold and damp environments to prevent *Vata* aggravation.

4. Panchakarma Therapies

Therapies Administered

i). Abhyanga (Therapeutic Oil Massage)

- **Oil Used:** *Mahanarayana Taila*
- **Physiology:** Improves circulation, nourishes tissues (*Asthi Dhātu*), and alleviates *Vata* aggravation by promoting warmth and lubrication.

ii). Swedana (Sudation Therapy)

- **Procedure:** Localized steam therapy applied post-*Abhyanga*.
- **Physiology:** Relaxes muscles, reduces stiffness, and clears blocked *Srotas* (channels).

iii). Janu Basti (Medicated Oil Retention Therapy)

- **Oil Used:** *Mahanarayana Taila*
- **Physiology:** Provides localized nourishment to the knee joint, improves joint lubrication, and reduces inflammation and pain.

iv). Shirodhara (Oil Dripping Therapy)

- **Oil Used:** *Brahmi Taila*
- **Physiology:** Calms the nervous system, improves sleep quality, and helps alleviate systemic stress contributing to pain.

v). Churna Pinda Sweda (Herbal Bolus Therapy)

- **Herbs Used:** *Eranda* (*Ricinus communis*), *Nirgundi* (*Vitex negundo*).
- **Physiology:** Reduces joint stiffness and promotes better mobility by alleviating *Vata*.

5. Medicines

a) Dry Formulations

i). Maharasnadi Kwatha

- **Ingredients:** *Rasna* (*Pluchea lanceolata*), *Guggulu* (*Commiphora mukul*), *Eranda* (*Ricinus communis*).
- **Latin Names:** As above.
- **Dose:** 15 ml, twice daily after meals.
- **Anupana:** Hot water.
- **Duration:** 30 days.

ii). Yograj Guggulu

- **Ingredients:** *Guggulu* (*Commiphora mukul*), *Pippali* (*Piper longum*), *Haritaki* (*Terminalia chebula*).
- **Latin Names:** As above.
- **Dose:** 2 tablets, twice daily after meals.
- **Anupana:** Warm water.
- **Duration:** 30 days.

iii). Arogyavardhini Vati

- **Ingredients:** *Kutaki* (*Picrorhiza kurroa*), *Haritaki* (*Terminalia chebula*).
- **Latin Names:** As above.
- **Dose:** 2 tablets, twice daily.
- **Anipana:** Warm water.
- **Duration:** 30 days.

b) Medicated Oils

i). Mahanarayana Taila

- **Ingredients:** *Ashwagandha* (*Withania somnifera*), *Bala* (*Sida cordifolia*).
- **Application:** External massage and oil retention in *Janu Basti*.

ii). Brahmi Taila

- **Ingredients:** *Brahmi* (*Bacopa monnieri*), *Shankhpushpi* (*Convolvulus pluricaulis*).
- **Application:** External application in *Shirodhara*.

Follow-Up:

Table 1: Pre-Treatment and Post-Treatment

Parameter	Pre-Treatment	Post-Treatment	Observation
Pulse	72 bpm	74 bpm	Slightly improved circulation.
Blood Pressure	140/80 mmHg	120/80 mmHg	Normalized.
Weight	104 kg	103 kg	Minor reduction.
Temperature	98°F	98°F	Stable.
Pain Score	7/10	4/10	Significant reduction.
Respiration Rate	16/min	16/min	Stable.
Uric Acid Levels	7.80 mg/dl	3.10 mg/dl	Normalized.

Table 2: Pre-Treatment and Post-Treatment:

Condition	Pre-Treatment	Post-Treatment	Observation
Pain in Knee Joint	Persistent and severe (7/10 on pain scale).	Mild to moderate pain (4/10 on pain scale).	Improved significantly.
Swelling in Knee Joint	Notable swelling with limited range of motion.	Swelling reduced with improved mobility.	Inflammation decreased.
Walking Difficulty	Limping with pain and stiffness during walking.	Improved walking ability with reduced discomfort.	Mobility enhanced.
Joint Stiffness	Morning stiffness lasting over an hour.	Minimal morning stiffness lasting only 10–15 minutes.	Flexibility restored.
Systemic Complaints	Fatigue, body aches, and difficulty performing daily tasks.	Improved energy levels and ease in daily activities.	Overall vitality enhanced.
Sleep Quality	Poor, with interrupted sleep due to pain.	Restful and uninterrupted sleep.	Mental and physical relaxation observed.

Images of Clinical Report

Vidyawati Shantil Memorial
KSHETRAPAL HOSPITAL
MULTI SPECIALITY & RESEARCH CENTRE
(A Unit of Kshetrapal Eye Hospital & Lasik Laser Centre Ajmer)

Name of Patient		Date	13/08/2024 10:55:59 AM
Age	59 Y	Sex	Male
Patient No:	KHRC-002954-22	Ref by Dr.	PRATEEK DARGAR

MRI STUDY OF RIGHT KNEE JOINT

MRI study of Right knee joint was performed using T2W, GRE and PD FSAT sagittal, T1W and PD FSAT coronal and PD FSAT axial images.

FINDINGS

Bones, Articular cartilages, Joints space and Soft tissues:

Mild knee joint effusion is seen. Extension of free fluid is seen within gastrocnemius semimembranosus recess.

Diffuse subcutaneous edema is seen on anterior aspect of the knee.

Marginal osteophytes are seen at tibial and femoral condyles. Mild marrow edema is seen overlying the medial tibiofemoral condyle with partial loss of chondral thickness - suggest early changes of osteoarthritis.

The visualized portions of the femur, fibula and patella show normal signal intensity. The articular cartilage overlying the femur, tibia and patella appears unremarkable.

The visualized musculature surrounding the knee joint appears normal.

Menisci:

Linear hyperintense signal seen on the PD FSAT, GRE and T2W images in the posterior horn of medial meniscus, reaching to articular surface, represents Grade III meniscal signal (horizontal meniscal tear).

The anterior and posterior horns of the lateral and anterior horn of medial menisci reveal normal configuration and signal characteristics.

Cruciate ligament:

Patchy hyperintense signal seen on the T2W & PD FSAT images in the course of anterior cruciate ligament, which turns intermediate signal on the T1W images, may represents ligamentous sprain. The normal course of ACL is maintained.

The posterior cruciate ligament reveals normal contour and signal characteristics.

Collateral ligaments:

Subtle hyperintense signal seen on the T2W and PD FSAT images in the course of lateral collateral ligament, which turns intermediate signal on the T1W images, may represents minimal ligamentous sprain. The normal course of lateral collateral ligament is maintained.

The medial collateral ligaments and patellar tendon appear normal.

Hoffa's fat pad:

Hoffa's fat pad appears normal.

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Name of Patient		Date	13/08/2024 10:55:59 AM
Age	59 Y	Sex	Male
Patient No:	KHRC-002954-22	Ref by Dr.	PRATEEK DARGAR

IMPRESSION

- Mild knee joint effusion. Extension of free fluid within gastrocnemius semimembranosus recess.
- Diffuse subcutaneous edema on anterior aspect of the knee.
- Grade III meniscal signal (Horizontal meniscal tear) in the posterior horn of medial meniscus.
- Ligamentous sprain of anterior cruciate ligament.
- Marginal osteophytes at tibial and femoral condyles. Mild marrow edema is seen overlying the medial tibiofemoral condyle with partial loss of chondral thickness - suggest early changes of osteoarthritis.

DR. DEEPA LALWALA GANDHI
DMRD; DNS (RADIOLOGICAL DIAGNOSIS)
REG NO: G-23822

Disclaimer: It is an online interpretation of medical imaging based on clinical data. All modern machines/procedures have their own limitation. If there is any clinical discrepancy, this investigation may be repeated or reassessed by other tests. Patient's identification in online reporting is not established, so in no way can this report be utilized for any medico legal purpose. Any error in typing should be corrected immediately.

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Name	UHID NO.	KHRC-002954-22	IPD/OPD Status	OPD
Age / Sex : 59 Y / Male	Lab No.	0240914216	Consultant Dr.	PRATEEK DARGAR
Mobile No : 7329796709	Receipt no.	KHRC-133350824	Location/Bed No :	

Collected at: 14/08/2024 12:01 PM

Accession No. **BIOCHEMISTRY** Registration No.

Investigations	Result	Unit	Biological Reference Interval
URIC ACID	7.80	mg/dl	3.5-7.0

*** End of Report ***

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Discussion

The patient presented with chronic *Sandhi Shoola* (joint pain), aligned with the *Ayurvedic* condition *Asthigata Vata*. The clinical features, including pain, swelling, stiffness, and restricted mobility, are consistent with the degeneration of joint structures described in modern medicine as osteoarthritis [8]. MRI findings of Grade III horizontal meniscal tear, mild effusion, marginal osteophytes, and elevated uric acid levels

further confirmed the condition. Chronic inflammation, *Vata* aggravation, and *Ama* accumulation were the key pathological factors identified, necessitating a multidimensional approach to treatment [9].

Samprapti (Pathogenesis)

The disease pathogenesis can be described as follows:

i). *Nidana* (Causative Factors): Chronic exposure to *Vata*-

aggravating factors such as cold environments, improper diet, and aging ^[10].

- ii). **Dosha Involvement:** Aggravated *Vata* and depleted *Shleshaka Kapha* caused joint dryness and degeneration ^[11].
- iii). **Ama Accumulation:** Improper digestion and metabolism led to the formation of *Ama*, which lodged in the joints, exacerbating inflammation and stiffness ^[12].
- iv). **Srotas Obstruction:** Blocked *Asthivaha Srotas* further hindered nutrient supply to the joints, resulting in progressive degeneration ^[13].

Treatment

Panchakarma Therapies

- i). **Abhyanga (Therapeutic Oil Massage):** Improved circulation, nourished *Asthi Dhātu* (bone tissue), and reduced *Vata* aggravation ^[14].
- ii). **Swedana (Sudation Therapy):** Helped alleviate stiffness and facilitated the removal of *Ama* through sweat ^[15].
- iii). **Janu Basti (Oil Retention Therapy):** Delivered localized lubrication and nourishment, reducing inflammation and pain in the knee joint ^[16].
- iv). **Shirodhara (Oil Dripping Therapy):** Promoted mental relaxation, improved sleep, and reduced systemic stress ^[17].
- v). **Churna Pinda Sweda (Ayurvedic Bolus Therapy):** Improved mobility and reduced stiffness by alleviating localized *Vata* ^[18].

Drugs Administered

i). Maharasnadi Kwatha

- **Mode of Action:** Pacified *Vata*, reduced inflammation, and improved joint lubrication ^[19].
- **Key Ingredients:**
 - **Rasna (*Pluchea lanceolata*):** Anti-inflammatory and pain-relieving.
 - **Eranda (*Ricinus communis*):** Anti-inflammatory and *Vata*-balancing.
 - **Guggulu (*Commiphora mukul*):** Anti-arthritis and rejuvenative.

ii). Yograj Guggulu

- **Mode of Action:** Reduced joint stiffness, eliminated *Ama*, and improved metabolism ^[20].
- **Key Ingredients:**
 - **Pippali (*Piper longum*):** Anti-inflammatory and digestive stimulant.
 - **Haritaki (*Terminalia chebula*):** Detoxifying and *Vata*-pacifying.
 - **Guggulu (*Commiphora mukul*):** Promoted joint repair and reduced swelling.

iii). Arogyavardhini Vati

- **Mode of Action:** Improved liver function, enhanced digestion, and removed metabolic toxins (*Ama*) ^[21].
- **Key Ingredients:**
 - **Katuki (*Picrorhiza kurroa*):** Hepatoprotective and detoxifying.
 - **Haritaki (*Terminalia chebula*):** Digestive stimulant and *Vata* pacifier.

Mode of Action of Each Drug

Maharasnadi Kwatha is a classical *Ayurvedic* decoction formulated with ingredients such as *Rasna* (*Pluchea*

lanceolata), *Guggulu* (*Commiphora mukul*), and *Eranda* (*Ricinus communis*). The primary action of this formulation is to pacify aggravated *Vata Dosha*, which is the root cause of joint pain and stiffness. Its anti-inflammatory properties help reduce swelling and alleviate pain. Additionally, the nourishing qualities of the herbs rejuvenate *Asthi Dhātu* (bone tissue) and improve joint lubrication, promoting better mobility and comfort ^[22].

Yograj Guggulu, composed of *Pippali* (*Piper longum*), *Haritaki* (*Terminalia chebula*), and *Guggulu* (*Commiphora mukul*), is a potent formulation designed to address metabolic imbalances and eliminate *Ama* (toxins). This herbal combination enhances digestion and metabolism, reducing the buildup of toxins in the joints. It also alleviates stiffness and swelling, thereby improving overall joint function. The rejuvenative properties of *Guggulu* further aid in repairing and maintaining joint health ^[23].

Arogyavardhini Vati, containing *Katuki* (*Picrorhiza kurroa*) and *Haritaki* (*Terminalia chebula*), primarily acts on the liver and digestive system. It improves liver function, facilitating the detoxification process, and clears *Ama* from the body. By enhancing digestion and metabolic fire (*Agni*), it ensures better absorption of nutrients and supports systemic health. This dual action addresses the root cause of inflammatory conditions and prevents further accumulation of toxins ^[24].

Need for Further Research

While the current case study highlights the efficacy of *Ayurvedic* management in *Sandhi Shoola* (*Asthigata Vata*), further research is necessary to establish its broader applicability. Future studies should include:

- i). **Controlled Clinical Trials:** Conduct large-scale, randomized trials to validate the efficacy of *Ayurvedic* treatments in managing joint pain and degenerative conditions.
- ii). **Comparative Studies:** Evaluate the effectiveness of *Ayurvedic* therapies against conventional allopathic treatments.
- iii). **Mechanistic Insights:** Investigate the pharmacological and biochemical pathways of *Ayurvedic* formulations and *Panchakarma* therapies.
- iv). **Long-term Outcomes:** Assess the sustainability of symptomatic relief and systemic improvements over extended periods.
- v). **Multimodal Integration:** Explore the potential of combining *Ayurveda* with modern diagnostics and targeted therapies for enhanced patient outcomes.

Conclusion

The patient's condition, identified as *Sandhi Shoola* and *Asthigata Vata*, was consistent with osteoarthritis and associated metabolic imbalances such as elevated uric acid levels. The integrative *Ayurvedic* approach effectively addressed the root causes of the disease, including *Vata* aggravation, *Ama* accumulation, and systemic inflammation. Post-treatment, the patient's vital parameters improved significantly. Blood pressure normalized (140/80 mmHg to 120/76 mmHg), and uric acid levels reduced from 7.80 mg/dl to 3.10 mg/dl. These improvements reflected systemic stabilization and enhanced overall health. Symptomatic relief was observed in terms of reduced joint pain (7/10 to 4/10), diminished swelling, and improved mobility. Morning stiffness decreased from over an hour to 10–15 minutes, contributing to better functionality and quality of life. Diagnostic evaluations, including MRI and biochemical tests,

provided a clear baseline for treatment and post-intervention assessment. Improvements in joint function and metabolic parameters validated the effectiveness of the treatment approach. The holistic *Ayurvedic* management, encompassing *Panchakarma* therapies, herbal medications, dietary adjustments, and lifestyle modifications, proved effective in managing *Sandhi Shoola*. The integration of detoxification, systemic rejuvenation, and symptom alleviation addressed the disease comprehensively. This case underscores the potential of *Ayurveda* in providing safe, sustainable, and effective solutions for chronic musculoskeletal disorders, necessitating further research to substantiate these findings across diverse patient populations.

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