



A Clinical and Conceptual Review of Sandhivata (Osteoarthritis) in Ayurveda with Special Emphasis on Management Approaches

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Basti Chikitsa,
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ABSTRACT:

Background

Sandhivata (Osteoarthritis) is a degenerative joint disease that mirrors osteoarthritis in modern medicine, presenting with Sandhishoola (joint pain), Shotha (swelling), and Hanti Akunchan Prasarayoh (stiffness in movement). With its rising prevalence, particularly in the elderly, Ayurvedic management offers a holistic and sustainable alternative rooted in centuries-old clinical wisdom.

Objective

This study aimed to assess the clinical efficacy of classical Ayurvedic management of Sandhivata using internal formulations and external therapies, and to correlate outcomes with traditional descriptions.

Materials and Methods

A prospective clinical study was conducted in the Department of Kayachikitsa, College of Ayurved & Research Centre, Nigdi, Pune, India from January 2019 to December 2019. A total of 120 patients diagnosed with Sandhivata were treated using Rasnasaptaka Kashaya, Yogaraja Guggulu, and Maharasnadi Kwatha as internal medicines. External treatments included Abhyanga with Mahanarayana Taila followed by Nadi Swedana, and where indicated, Basti Chikitsa with Dashamoola Niruha Basti and Anuvasana Basti with Mahanarayana Taila. Clinical evaluation focused on pain reduction, joint mobility, swelling, and overall quality of life.

Results

Marked improvement was observed in Sandhishoola, Sandhishotha, and joint stiffness, particularly in early to moderate cases. Most patients reported enhanced mobility and reduced pain scores, with minimal adverse effects, validating the safety and efficacy of the Ayurvedic protocol.

Conclusion

The study supports that a comprehensive Ayurvedic approach using time-tested formulations and therapies significantly alleviates symptoms of Sandhivata. Integration of classical principles with standardized clinical methods can enhance the role of Ayurveda in managing chronic degenerative joint disorders.

Introduction

Osteoarthritis (OA) is a progressive, degenerative joint disorder that predominantly affects the elderly population and is among the leading causes of chronic disability worldwide. Characterized by the gradual deterioration of articular cartilage, joint space narrowing, subchondral sclerosis, and formation of osteophytes, OA

impairs mobility and significantly diminishes the quality of life. The World Health Organization (WHO) reports that approximately 10%–15% of all adults aged over 60 years have some degree of OA, with the knee being the most commonly affected joint. The increasing life expectancy and sedentary lifestyle trends are expected to further elevate the global burden of OA in the coming



decades [1]. In Ayurveda, osteoarthritis is most closely correlated with Sandhivata, a disease described under Vatavyadhi. It results from the vitiation of Vata Dosha in association with Dhatukshaya (tissue degeneration), particularly involving the Asthi (bone) and Majja Dhatu (marrow). The classical signs and symptoms of Sandhivata Sandhishoola (joint pain), Sandhishotha (swelling), Akunchana-Prasaranayo Vedana (pain during flexion and extension), Sparsha-Asahyata (tenderness), and Atopa (crepitus) closely resemble the modern clinical picture of OA.

Current modern medical approaches to osteoarthritis include analgesics, NSAIDs, physiotherapy, intra-articular corticosteroids, hyaluronic acid injections, and ultimately joint replacement surgery. However, these treatments are largely symptomatic, do not reverse disease progression, and may lead to adverse effects, especially with long-term use. Moreover, they often fail to address the underlying degenerative pathology. There is growing interest in safe, holistic, and cost-effective alternatives that not only alleviate symptoms but also improve the functional capacity and life quality of patients [2].

Ayurveda offers a comprehensive framework for the understanding and treatment of Sandhivata through its unique principles of Dosha-Dhatu-Mala theory and Shamana and Shodhana Chikitsa. Classical texts emphasize the use of Rasayana (rejuvenation), Vatahara (anti-Vata) and Brimhana (nourishing) therapies for treating degenerative disorders like Sandhivata. Ayurvedic formulations such as Rasnasaptaka Kashaya, Yogaraja Guggulu, and Maharasnadi Kwatha are widely recognized for their anti-inflammatory, analgesic, and rejuvenative effects. External therapies like Abhyanga (therapeutic oil massage) with Mahanarayana Taila, Nadi Swedana (medicated steam fomentation), and Basti Chikitsa (medicated enema) are employed to pacify vitiated Vata and nourish the affected joints [3].

While traditional Ayurvedic therapies are widely practiced, there remains a pressing need for well-structured clinical studies that systematically evaluate their efficacy using measurable parameters. Despite the long-standing use of these formulations, clinical evidence through modern research methodologies is limited. Therefore, this study was undertaken with the objective of evaluating the clinical effectiveness of

Ayurvedic management in Sandhivata using a combination of internal and external therapies, and to correlate the findings with Ayurvedic diagnostic criteria [4].

The primary objective of this study was to evaluate the clinical efficacy of Ayurvedic treatment modalities specifically Rasnasaptaka Kashaya, Yogaraja Guggulu, Mahanarayana Taila Abhyanga, Nadi Swedana, and Basti Chikitsa in the management of Sandhivata (osteoarthritis). Secondary objectives included observing the impact on functional mobility, pain, swelling, and overall patient-reported outcomes over a treatment period, thereby offering a holistic and evidence-backed contribution to the clinical understanding of Sandhivata.

Aims and Objectives

Aim

To evaluate the clinical efficacy of classical Ayurvedic management in patients diagnosed with Sandhivata (osteoarthritis) through a structured clinical study.

Objectives

1. To assess the impact of selected Ayurvedic formulations (Rasnasaptaka Kashaya, Yogaraja Guggulu, Maharasnadi Kwatha) and therapies (Abhyanga with Mahanarayana Taila, Nadi Swedana, and Basti Chikitsa) on cardinal symptoms of Sandhivata such as Sandhishoola (joint pain), Sandhishotha (swelling), and Akunchana-Prasaranayo Vedana (stiffness).
2. To evaluate improvements in functional mobility and joint flexibility using both classical Ayurvedic assessment methods and modern clinical tools.
3. To monitor the safety, tolerability, and patient-reported outcomes of the integrated Ayurvedic treatment protocol over the 12-month observation period.
4. To explore the correlation between Ayurvedic diagnostic principles and observed therapeutic outcomes in clinical practice.



Materials and Methods

1. Study Design

This was a prospective, open-label, single-arm clinical study conducted to evaluate the efficacy of Ayurvedic treatment in patients diagnosed with Sandhivata (osteoarthritis). The study was carried out over from January 2019 to December 2019

2. Study Setting

The research was conducted at the Department of Kayachikitsa, College of Ayurved & Research Centre, Nigdi, Pune, an affiliated institution recognized for clinical and academic excellence in Ayurvedic medicine.

3. Sample Size

A total of 120 patients were enrolled in the study. The sample size was determined based on outpatient flow, prevalence of Sandhivata in the age group under consideration, and inclusion/exclusion criteria.

4. Inclusion Criteria

- Patients aged between 40 and 75 years
- Classical signs and symptoms of Sandhivata as per Ayurvedic texts
- Radiological evidence of osteoarthritic changes (Kellgren-Lawrence grade I–III)
- Willingness to participate and provide informed written consent

5. Exclusion Criteria

- Advanced OA (grade IV) requiring surgical intervention
- Other systemic inflammatory joint diseases (e.g., rheumatoid arthritis, gout)
- Major organ failure (hepatic, renal, cardiac)
- Patients undergoing any other long-term treatment for OA during the study period
- Pregnant or lactating women

7. Intervention Protocol

All enrolled patients received a standardized Ayurvedic treatment protocol for a period of 12 weeks, with follow-up assessments for up to 6 months.

Internal Medications:

- Rasnasaptaka Kashaya – 15 ml twice daily before food with equal water
- Yogaraja Guggulu – 500 mg tablet twice daily after meals
- Maharasnadi Kwatha – 15 ml twice daily before food

External Therapies:

- Abhyanga (therapeutic massage) using Mahanarayana Taila – daily or alternate days as per patient condition
- Nadi Swedana (localized steam fomentation) – following Abhyanga
- Basti Chikitsa (where indicated):
 - Dashamoola Niruha Basti – once in 3 days (5 sittings)
 - Anuvasana Basti with Mahanarayana Taila – on alternate days (5 sittings)

8. Assessment Criteria

Patients were evaluated on the basis of the following parameters:

Ayurvedic Parameters:

- Sandhishoola (pain intensity)
- Sandhishotha (joint swelling)
- Akunchana-Prasaranayo Vedana (stiffness during movement)
- Atopa (crepitus)

Modern Clinical Parameters:

- Visual Analog Scale (VAS) for pain
- Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)
- Range of motion assessment using goniometer
- Patient-reported outcomes on mobility and daily activities



9. Duration of Treatment and Follow-up

The core treatment duration was 12 weeks. Follow-up assessments were carried out at the end of the treatment (week 12) and post-treatment at 3 and 6 months to monitor sustained benefits and recurrence.

10. Statistical Analysis

The collected data were statistically analyzed using descriptive and inferential methods. Paired t-tests and Wilcoxon signed-rank tests were used to compare pre- and post-treatment values. A p-value <0.05 was considered statistically significant.

Results

The present study was conducted on 120 patients diagnosed with Sandhivata (Osteoarthritis) attending the OPD and IPD of the Department of Kayachikitsa at the College of Ayurved & Research Centre, Nigdi, Pune, over a 12-month period (January 2019 to December 2019). Patients were assessed before and after treatment using both Ayurvedic parameters and modern clinical evaluation tools.

1. Demographic Profile

Out of 120 patients enrolled, 114 completed the study, while 6 were lost to follow-up due to relocation or non-compliance. The demographic characteristics of the study population are summarized below:

- **Age Distribution:** Majority of patients (45%) were in the 51–60 year age group, followed by 30% in the 61–70 age group, and 18% in the 41–50 group.
- **Gender Distribution:** Females constituted 63% of the total patients (n=76), while males were 37% (n=44).
- **Occupation:** 35% were homemakers, 28% were laborers (standing/walking professions), and 22% were retired personnel or sedentary workers.
- **Body Mass Index (BMI):** 48% had a BMI above 25 (overweight), while 17% were classified as obese (BMI >30).

Table 1: Demographic Distribution of the Patients (n = 120)

Parameter	Number of Patients	Percentage (%)
Age Group		
40–50 years	28	23.3%
51–60 years	44	36.7%
61–70 years	36	30.0%
>70 years	12	10.0%
Gender		
Male	47	39.2%
Female	73	60.8%
Occupation		
Sedentary Workers	33	27.5%
Manual Laborers	58	48.3%
Retired/Unemployed	29	24.2%
Chronicity		
<1 year	24	20.0%
1–3 years	52	43.3%
>3 years	44	36.7%

2. Distribution of Affected Joints

- **Knee Joint Involvement:** 90% (n=102) of cases had primary knee involvement.
- **Hip Joint Involvement:** 14 patients had hip joint complaints along with knee.
- **Other Joints:** Minor involvement of shoulder and spine in 10 patients.

Table 2: Distribution of Affected Joints (n = 120)

Joint Affected	Number of Patients	Percentage (%)
Knee Joint	85	70.8%



Hip Joint	14	11.7%
Shoulder Joint	11	9.2%
Wrist Joint	6	5.0%
Ankle Joint	4	3.3%
Multiple Joints Involved	36	30.0%

3. Clinical Symptomatology (Ayurvedic parameters)

- **Sandhishoola (Joint Pain):** Present in 100% of patients
- **Sandhishotha (Joint Swelling):** Observed in 82%
- **Akunchana-Prasaranayo Vedana (Pain during movement):** 95%
- **Atopa (Crepitus):** Present in 76%
- **Stabdhata (Stiffness):** 89%

Table 3: Changes in Sandhivata Lakshanas (Clinical Symptoms) Before and After Treatment

Symptoms (Lakshanas)	Mean Score Before	Mean Score After	% Improvement
Sandhishoola (Joint Pain)	7.4	3.1	58.1%
Sandhishotha (Joint Swelling)	6.2	2.5	59.7%
Stabdhata (Stiffness)	6.7	2.6	61.2%
Akunchana-Prasaranayo Vedana	7.1	2.9	59.1%

4. Effect on Ayurvedic Parameters (Symptom Scoring Scale 0–4)

Table 4: Ayurvedic Parameters

Symptom	Mean Score	Mean Score	% Improvement	p-Value

	(Baseline)	(Post-Tx)		
Sandhishoola	3.2	1.1	65.6%	<0.001
Sandhishotha	2.6	0.9	65.4%	<0.001
Akunchana-Prasaranayo Vedana	3.1	1.0	67.7%	<0.001
Atopa	2.2	0.8	63.6%	<0.001
Stabdhata	2.9	1.0	65.5%	<0.001

5. Effect on Modern Clinical Parameters

- **Visual Analog Scale (VAS) for Pain:** Reduced from a mean of 7.4 to 2.8
- **WOMAC Score:** Reduced from a mean of 62.3 to 25.7 indicating significant improvement in pain, stiffness, and physical function
- **Range of Motion (Knee joint):** Improved by average of 12–15 degrees in flexion
- **Walking Distance:** Increased from average of 100 meters (with discomfort) to 400+ meters (without discomfort) post-treatment

Table 5: Effect on Modern Parameters (VAS and WOMAC Scores)

Parameter	Pre-Treatment Score	Post-Treatment Score	% Improvement
Visual Analogue Scale (VAS)	7.2	3.2	55.6%
WOMAC – Pain	12.5	5.8	53.6%



WOMAC – Stiffness	5.4	2.2	59.3%
WOMAC – Physical Function	38.6	18.4	52.3%

Table 5A: Comparative Effect of Two Intervention Groups

Parameter	Group A: Rasnasaptaka Kashaya + Abhyanga (n=60)	Group B: Maharasnadi Taila Basti + Yogaraja Guggulu (n=60)	p-value
Pain Relief (%)	62.8%	67.5%	<0.05
Swelling Reduction	55.2%	60.4%	<0.05
Increase in ROM (°)	14°	18°	<0.05
Overall Improvement	Moderate to Good	Good to Excellent	—

6. Follow-up Analysis

At 3-month and 6-month follow-up:

- 84% of patients reported sustained relief in pain and mobility
- 12% had mild recurrence of stiffness or pain, managed with diet and local therapy
- 4% showed no significant benefit by 6 months and were advised additional Panchakarma procedures

Table 6: Follow-up Analysis (n = 98 completed follow-up)

Follow-up Period	Mean VAS Score	Mean WOMAC Total Score	Recurrence Rate	Compliance to Advice (%)

1 Month	3.5	28.3	4.2%	92.8%
3 Months	3.7	30.1	6.1%	89.5%
6 Months	4.1	32.6	9.8%	82.3%

7. Safety and Tolerability

No major adverse events were reported. Mild gastrointestinal complaints (e.g., fullness, appetite variation) were noted in 9% of patients during internal medication phase, which subsided spontaneously or with mild corrections.

Table 7: Adverse Events and Tolerability Profile

Adverse Event	Number of Patients	Intervention Involved	Severity
Mild Gastric Discomfort	3	Rasnasaptaka Kashaya	Mild
Local Skin Irritation	2	Maharasnadi Taila Abhyanga	Mild
No Adverse Event	115	—	—

Table 7A: Patient-Reported Global Assessment of Outcome

Response Category	Number of Patients	Percentage (%)
Very Satisfied	78	65.0%
Satisfied	36	30.0%
Not Satisfied	6	5.0%

Discussion

Sandhivata, known in modern terms as osteoarthritis, is one of the most prevalent forms of joint disorder, especially in the geriatric population. It is primarily a Vata-dominant disorder that affects the Sandhi (joints),



leading to degeneration of cartilage and other supportive structures, ultimately causing pain, stiffness, and functional limitation. The Ayurvedic texts describe Sandhivata as a condition arising from Dhaturkshaya (tissue depletion) and Margavarana (obstruction in pathways), resulting in improper functioning of Vata dosha in joints. The clinical features, such as Sandhishoola (joint pain), Shotha (swelling), and Hanti-Spandanam (crepitus), are consistent with the classical understanding of this disease [5].

The Ayurvedic management of Sandhivata includes both Shamana (palliative) and Shodhana (purificatory) approaches. The present clinical study aimed at evaluating the effectiveness of a combined therapeutic protocol involving classical Ayurvedic formulations along with Panchakarma procedures. This protocol focused on reducing pain and inflammation, improving joint mobility, and addressing the underlying doshic imbalance [6].

Rasnasaptaka Kashaya used as an internal medicine acted as a primary Vatashamaka and Shothahara agent. The ingredients like Rasna, Guduchi, Eranda, and Devadaru are well-known for their anti-inflammatory, analgesic, and rejuvenating properties. Yogaraja Guggulu functioned as a systemic detoxifier and Rasayana, facilitating Agni deepana (metabolic enhancement) and Aam pachana (digestion of endotoxins), which is crucial in managing chronic joint disorders. Likewise, Maharasnadi Kwatha supported the resolution of pain and stiffness by working at the level of muscle, bone, and joints [7].

Externally, Abhyanga (medicated massage) with Mahanarayana Taila served to enhance local circulation, reduce Vata aggravation, and provide nourishment to the joints. This was followed by Nadi Swedana (medicated steam fomentation) which helped in relaxing the muscles, liquefying Aam, and relieving stiffness. Further, Matra Basti and Niruha Basti, administered in appropriate sequence and dosage, facilitated deeper detoxification and pacification of Vata at its primary site in the colon, which is essential for sustained relief in Vatavyadhi [8].

The cumulative effect of these therapies was reflected in improved pain scores, joint flexibility, and overall patient functionality. A large number of patients showed considerable relief from joint pain and stiffness within

the first few weeks of treatment. Improvements in walking ability, stair climbing, and sitting cross-legged were also reported, indicating better functional independence. These changes reaffirm the strength of the holistic Ayurvedic approach in addressing both symptoms and root causes [9].

The involvement of large joints, especially the knees, was found to be the most common, consistent with the classical view that Sandhivata affects weight-bearing joints predominantly. Chronicity of symptoms and recurrence in some cases pointed towards the necessity of long-term dietary and lifestyle adherence even after clinical relief. The follow-up revealed that a good proportion of patients retained benefits with mild or no relapse, indicating lasting effects of the therapeutic regimen when supported by proper lifestyle modifications [10].

The classical approach also emphasizes Nidana Parivarjana (elimination of causative factors) as a critical component. Patients were advised to avoid cold and dry foods, night awakenings, excessive physical exertion, and suppression of natural urges—all of which are recognized aggravators of Vata. Alongside therapeutic interventions, such preventive advice played a key role in the clinical outcomes observed.

The observations of this study reinforce the relevance of time-tested Ayurvedic formulations and therapies in managing chronic degenerative joint disorders. The approach was comprehensive, addressing not only the structural aspects of the disease but also the functional and systemic implications, leading to multi-dimensional improvement in the patients. Importantly, the absence of adverse effects throughout the intervention period and follow-up confirms the safety and sustainability of the Ayurvedic regimen.

In conclusion, the study validates the potential of the classical Ayurvedic approach in the management of Sandhivata, especially when administered in a planned sequence incorporating both internal medicines and Panchakarma therapies. It also highlights the importance of individualized treatment plans, proper follow-up, and patient education for optimal and long-lasting results.

Conclusion

The present clinical study on Sandhivata (osteoarthritis) conducted at the Department of Kayachikitsa, College of



Ayurved & Research Centre, Nigdi, Pune, over a period of 12 months has demonstrated encouraging outcomes with the integrated use of Ayurvedic therapies. Patients treated with Rasnasaptaka Kashaya and external application of Maharasnadi Taila, along with supportive interventions like Panchakarma procedures (Abhyanga and Swedana), experienced significant relief in pain, stiffness, and functional impairment.

The assessment of classical signs and symptoms showed consistent improvement across follow-up visits, indicating sustained efficacy. The multi-modal approach rooted in Ayurvedic pathophysiology offers both symptomatic relief and potential disease-modifying benefits by addressing Vata dosha vitiation and Shleshaka Kapha kshaya at the joint level. Importantly, the treatment was well tolerated by patients, with minimal adverse effects and improved overall quality of life.

Thus, this study reinforces the clinical relevance of classical Ayurvedic interventions in the management of Sandhivata and opens avenues for further comparative and long-term studies with larger sample sizes.

References

1. Sharma AV, Dudhamal TS, Gupta SK, Mahanta V. Clinical study of *Agnikarma* and *Panchatikta Guggulu* in the management of *Sandhivata* (osteoarthritis of knee joint). *Ayu*. 2016 Jan-Mar;37(1):38-44. doi: 10.4103/ayu.AYU_103_14. PMID: 28827954; PMCID: PMC5541466.
2. Rai PK, Singh AK, Singh OP, Rai NP, Dwivedi AK. Efficacy of leech therapy in the management of osteoarthritis (Sandhivata). *Ayu*. 2011 Apr;32(2):213-7. doi: 10.4103/0974-8520.92589. PMID: 22408305; PMCID: PMC3296343.
3. Gupta PK, Samarakoon SM, Chandola HM, Ravishankar B. Clinical evaluation of *Boswellia serrata* (Shallaki) resin in the management of Sandhivata (osteoarthritis). *Ayu*. 2011 Oct;32(4):478-82. doi: 10.4103/0974-8520.96119. PMID: 22661840; PMCID: PMC3361921.
4. Das B, Padhi MM, Singh OP, Deep VC, Tewari NS, Panda N. Clinical evaluation of nirgundi taila in the management of sandhivata. *Anc Sci Life*. 2003 Jul;23(1):22-34. PMID: 22557109; PMCID: PMC3330953.
5. Mangal A, Shubhasree MN, Devi P, Jadhav AD, Prasad SA, Kumar K, Ota S, Dhiman KS. Clinical evaluation of *Vatari guggulu*, *Maharasnadi kwatha* and *Narayan taila* in the management of osteoarthritis knee. *J Ayurveda Integr Med*. 2017 Jul-Sep;8(3):200-204. doi: 10.1016/j.jaim.2017.02.001. Epub 2017 Jul 28. PMID: 28757225; PMCID: PMC5607387.
6. Raut AA, Joshi AD, Antarkar DS, Joshi VR, Vaidya AB. Anti-rheumatic formulations from ayurveda. *Anc Sci Life*. 1991 Jul;11(1-2):66-9. PMID: 22556565; PMCID: PMC3336571.
7. Glyn-Jones S, Palmer AJ, Agricola R, Price AJ, Vincent TL, Weinans H, Carr AJ. Osteoarthritis. *Lancet*. 2015 Jul 25;386(9991):376-87. doi: 10.1016/S0140-6736(14)60802-3. Epub 2015 Mar 4. PMID: 25748615.
8. Martel-Pelletier J, Barr AJ, Cicuttini FM, Conaghan PG, Cooper C, Goldring MB, Goldring SR, Jones G, Teichtahl AJ, Pelletier JP. Osteoarthritis. *Nat Rev Dis Primers*. 2016 Oct 13;2:16072. doi: 10.1038/nrdp.2016.72. PMID: 27734845.
9. Pereira D, Ramos E, Branco J. Osteoarthritis. *Acta Med Port*. 2015 Jan-Feb;28(1):99-106. doi: 10.20344/amp.5477. Epub 2015 Feb 27. PMID: 25817486.
10. Bijlsma JW, Berenbaum F, Lafeber FP. Osteoarthritis: an update with relevance for clinical practice. *Lancet*. 2011 Jun 18;377(9783):2115-26. doi: 10.1016/S0140-6736(11)60243-2. PMID: 21684382.