

## Efficacy Of Sneha Yukta Jānubandhana In The Management Of Jānu Sandhigata Vāta Vis-À-Vis Osteoarthritis Of The Knee Joint: A Case Study

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### Abstract-

**Background:** Osteoarthritis of the knee, described as *Jānu Sandhigata Vāta* in Ayurveda, is a degenerative joint condition characterized by pain, and reduced mobility. Ayurvedic therapies such as *Sneha Yukta Jānubandhana* (medicated oil bandaging) aim to restore joint function by addressing *Vāta dosha* imbalance. **Aim and Objectives:** **Aim:** To evaluate the efficacy of *Sneha Yukta Jānubandhana* in managing *Jānu Sandhigata Vāta*. **Objectives:** To assess improvement in subjective parameters like pain, swelling. To evaluate objective outcomes, including range of motion (ROM) and WOMAC scores. **Materials and Methods:** **Study Design:** Single-case observational study. **Intervention:** *Sneha Yukta Jānubandhana* was performed using *Moorchita Taila* (medicated oil), followed by bandaging with *Cora* cloth for 12 hours daily over 14 days. **Assessment Parameters:** Subjective: *Janusandhi Shoola* (pain), *Janusandhi Shotha* (Swelling), and *Janusandhi Atopa* (crepitus) and WOMAC score. Objective: Range of motion (ROM). **Assessment Timeline:** Pre-treatment (Day 0) and post-treatment (Day 14). **Results:** Pain (VAS score) reduced from 6/10 to 2/10 by Day 14. ROM improved from flexion limited at 90° to normal. WOMAC score decreased from 68 (moderate disability) to 25 (excellent improvement). Significant reduction in crepitus was observed. **Conclusion:** *Sneha Yukta Jānubandhana* is a safe and effective therapy for managing *Jānu Sandhigata Vāta* (knee osteoarthritis). It significantly reduced pain, and crepitus while improving joint mobility and quality of life. This integrative approach aligns with Ayurvedic principles and provides a promising alternative for degenerative joint diseases. Further large-scale studies are recommended to validate these findings.

**Keywords:** *Jānu Sandhigata Vāta*, Osteoarthritis, *Sneha Yukta Jānubandhana*, Ayurveda, Joint Support Therapy

### Introduction

In Ayurveda, *Jānu Sandhigata Vāta* is a clinical condition described under *Sandhigata Vāta*, a disorder of the joints caused by *Vāta dosha* imbalance.<sup>1</sup> It is characterized by symptoms such as joint pain, crepitus, swelling, and restricted movements, often associated with aging or excessive wear and tear of the joints.<sup>2</sup> The condition aligns with degenerative processes and is primarily attributed to the depletion of *Snigdha Guna* (unctuous quality) in the joints, leading to reduced synovial lubrication and impaired joint function.<sup>3</sup> Ayurveda emphasizes a holistic approach for

managing *Sandhigata Vāta*, including external therapies like *Snehana* (oleation) and *Bandhana* (bandaging), internal medications, dietary regulation, and lifestyle modifications to restore balance and improve joint health.<sup>4</sup>

Osteoarthritis (OA) is the most prevalent degenerative joint disease, particularly affecting weight-bearing joints like the knees. It is characterized by progressive cartilage degradation, subchondral bone remodeling, and synovial inflammation, leading to pain, and loss of joint function.<sup>5</sup> OA of the knee is a significant cause of disability globally, primarily affecting individuals over 50 years of age. Risk factors include aging, obesity, mechanical stress, and genetic predisposition.<sup>6</sup> Conventional management focuses on symptom relief through pharmacological agents, physical therapy, and surgical interventions, though these often come with limitations such as adverse effects and high costs.<sup>7</sup>

The chronic and multifactorial nature of knee osteoarthritis, integrating Ayurvedic and modern therapeutic approaches offers a synergistic model for better management. Ayurvedic interventions like *Sneha Yukta Jānubandhana* (medicated oil bandaging) not only provide localized relief but also address the systemic aspects of *Vāta* imbalance.<sup>8</sup> Such an approach can potentially reduce symptoms, improve joint function, and enhance the quality of life, highlighting the importance of integrative medicine in addressing complex degenerative conditions.<sup>9</sup>

### **Aim and Objectives:**

#### **Aim:**

To evaluate the efficacy of *Sneha Yukta Jānubandhana* in managing *Jānu Sandhigata Vāta*.

#### **Objectives:**

- To assess improvement in subjective parameters like pain, swelling, crepitus and WOMAC score.
- To evaluate objective outcomes, including range of motion (ROM).

### **Materials and Methods**

**Study Design**-This study is a randomized, clinical trial conducted to evaluate the efficacy of *Sneha Yukta Jānubandhana* in managing *Jānu Sandhigata Vāta* (osteoarthritis of the knee joint).

#### ***Sneha Yukta Jānubandhana***

##### **1. Materials:**

- *Moorchita Taila* (medicated oil).
- Cora cloth roll.
- Threads for tying.
- *Droni* (Treatment table)

##### **2. Procedure:**

- The affected knee joint of the subject is exposed in a sitting position with legs extended on the *Droni*.
- *Mridu Abhyanga* (gentle massage) using warm *Moorchita Taila* is performed over the knee joint.
- A *Cora* cloth roll soaked in warm *Moorchita Taila* is wrapped around the knee joint.
- The cloth is tied securely with threads and left in place for 12 hours daily.

##### **3. Duration:** 14 days.

### **Assessment Criteria**

#### **Subjective Parameters**

1. *Janusandhi Shoola* (knee joint pain).
2. *Janusandhi Shotha* (Swelling),
3. *Janusandhi Atopa* (crepitus or cracking sound in the knee joint).
4. WOMAC Score (Western Ontario and McMaster Universities Osteoarthritis Index).

#### **Objective Parameters**

1. Range of Motion (ROM): Measured using a goniometer, noting the angle of movement and onset of pain during motion.

#### Assessment Schedule

- **Pre-test:** Baseline assessment on Day 0 before the initiation of treatment.
- **Post-test:** Final assessment on Day 15 after completing the 14-day treatment protocol.

#### CASE REPORT

**Table no. 1 Patient History**

Parameter	Details
Age	55 years
Gender	Female
Occupation	Homemaker

**Table no. 2 Chief Complaint**

Complaint	Details
Primary Complaint	Pain, and restricted movement.
Duration	2 years.

**Table no. 3 Present History**

Parameter	Details
Pain	Persistent, aggravated by activity, relieved by rest.
Swelling	Occasional swelling in the right knee joint.
Crepitus	Cracking sound during knee movement.
Trauma/Illness	No history of trauma or systemic illness.

**Table no. 4 Past History**

Parameter	Details
Injuries/Surgeries	No significant history.
Chronic Illnesses	None reported.
Allergies	None known.
Specific Diseases	No history of rheumatoid arthritis or gout.

**Table no. 5 Family History**

Parameter	Details
Maternal History	History of knee osteoarthritis.
Other Diseases	No significant hereditary illnesses.

**Table no. 6 Personal History**

Parameter	Details
Diet	Mixed diet, prefers spicy and oily foods.
Appetite	Normal.
Bowel Habits	Irregular, occasional constipation.
Sleep	Disturbed due to pain.
Physical Activity	Limited due to pain

**Table no. 7 Examination Findings**

Parameter	Details
Inspection	Swelling around the right knee, mild deformity.
Palpation	Tenderness over medial joint line, crepitus on movement.
Range of Motion	- Flexion: Pain onset at 90°. - Extension: Limited with discomfort.
Functional Issues	Difficulty in squatting and climbing stairs.

**Table no. 8 Vital Examination**

Parameter	Observation
Pulse Rate	76 beats/min (regular)
Blood Pressure	130/70 mmHg
Respiratory Rate	18 breaths/min
Temperature	98.6°F (oral)
SpO <sub>2</sub>	98%

<b>Body Weight</b>	68 kg
<b>Height</b>	158 cm
<b>BMI</b>	27.2 (Overweight)

### Systemic Examination

**Table no. 9 Musculoskeletal System**

Parameter	Observation
Tenderness	Present over the medial joint line of the right knee.
Swelling	Mild swelling around the right knee joint.
Crepitus	Present during movement of the knee joint.
Range of Motion (ROM)	- Flexion: Restricted, pain onset at 90°. - Extension: Limited with discomfort.
Gait	Slightly antalgic (pain-avoiding gait).

**Table no. 10 Nervous System**

Parameter	Observation
Sensation	Intact in the lower limbs.
Reflexes	Normal (knee-jerk reflex present bilaterally).
Motor Function	Normal muscle strength in both lower limbs.

**Table no. 11 Cardiovascular System**

Parameter	Observation
Heart Sounds	Normal S1 and S2, no murmurs.
Peripheral Pulses	Palpable and normal in both lower limbs.

**Table no. 12 Respiratory System**

Parameter	Observation
Breath Sounds	Normal vesicular breath sounds.

Respiratory Effort	No difficulty in breathing.
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**Table no. 13 Gastrointestinal System**

Parameter	Observation
Abdomen	Soft, non-tender.
Bowel Sounds	Normal.

**Table no. 14 General Observations**

Parameter	Observation
Posture	Slight knee flexion due to discomfort.
Skin Over Joint	No discoloration or rashes noted.

**Table no. 15 Diagnosis**

Parameter	Details
Condition	<i>Jānu Sandhigata Vāta</i> (knee osteoarthritis).

**Table no. 16 Treatment Schedule (01/11/2024 to 14/11/2024)**

Date	Materials Used	Procedure	Duration	Subjective Criteria	Objective Criteria
01/11/2024	<ul style="list-style-type: none"> <li>- <i>Moorchita Taila</i> (medicated oil)</li> <li>- Cora cloth roll</li> <li>- Threads</li> <li>- Treatment table (<i>Droni</i>)</li> </ul>	<ul style="list-style-type: none"> <li>- The patient was seated with legs extended on the <i>Droni</i>.</li> <li>- Gentle massage (<i>Mridu Abhyanga</i>) with warm <i>Moorchita Taila</i> was performed.</li> <li>- A Cora cloth roll soaked in warm <i>Moorchita Taila</i> was wrapped around the knee joint.</li> <li>- The cloth was tied securely and kept in place for 12 hours.</li> </ul>	12 hours	<ul style="list-style-type: none"> <li>- <i>Janusandhi Shoola</i>: Pain intensity moderate (VAS: 6/10).</li> <li><i>Janusandhi Shotha</i> (Sweelling), - <i>Janusandhi Atopa</i>: Noticeable crepitus during motion.</li> <li>WOMAC Score: 68 (moderate disability).</li> </ul>	ROM: Flexion restricted with pain onset at 90°.

<b>02/11/2024</b>	As above	As above	12 hours	Pain slightly reduced (VAS: 5/10). WOMAC Score: 62.	ROM: Pain onset at 95°.
<b>03/11/2024</b>	As above	As above	12 hours	Crepitus reduced slightly. WOMAC Score: 60.	ROM: Pain onset at 100°.
<b>04/11/2024</b>	As above	As above	12 hours	Pain intensity mild to moderate (VAS: 4/10). WOMAC Score: 55.	ROM: Pain onset at 105°.
<b>05/11/2024</b>	As above	As above	12 hours	Pain during flexion significantly reduced. WOMAC Score: 52.	ROM: Pain onset at 110°.
<b>06/11/2024</b>	As above	As above	12 hours	Pain mild during activity (VAS: 4/10). WOMAC Score: 48.	ROM: Pain onset at 115°.
<b>07/11/2024</b>	As above	As above	12 hours	No significant pain at rest. Pain mild during strenuous activities. WOMAC Score: 45.	ROM: Pain onset at 120°.
<b>08/11/2024</b>	As above	As above	12 hours	Pain intensity mild and intermittent (VAS: 3/10). WOMAC Score: 40.	ROM: Pain onset at 125°.
<b>09/11/2024</b>	As above	As above	12 hours	Pain during rest almost absent. Pain with movement negligible. WOMAC Score: 35.	ROM: Pain onset at 130°.
<b>10/11/2024</b>	As above	As above	12 hours	Swelling resolved. Crepitus barely noticeable. WOMAC Score: 32.	ROM: Full flexion achieved without pain.
<b>11/11/2024</b>	As above	As above	12 hours	Pain absent during routine activities (VAS: 2/10). WOMAC Score: 30.	ROM: Full range achieved without pain.
<b>12/11/2024</b>	As above	As above	12 hours	Pain almost absent during all activities. Joint movement smooth and unrestricted. WOMAC Score: 28 (significant improvement in joint function).	ROM: Normal without pain.
<b>13/11/2024</b>	As above	As above	12 hours	Pain negligible during daily activities. WOMAC Score: 28.	ROM: Full flexion and extension without discomfort.

14/11/2024	As above	As above	12 hours	Pain absent even during strenuous activities. Joint movement completely smooth. WOMAC Score: 25 (excellent improvement).	ROM: Full and normal.
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**Table no. 17 Follow-Up Schedule**

Date	Follow-Up Observations	Assessment	Advice
15/11/2024	Moderate pain and Swelling reduction (VAS: 5/10), slight improvement in ROM. WOMAC Score: 60.	ROM: Flexion at 100°.	Continue treatment benefits with light stretching.
22/11/2024	Pain & Swelling further reduced (VAS: 3/10), significant improvement in joint flexibility and mobility. WOMAC Score: 40.	ROM: Flexion at 125°.	Introduce light walking sessions, avoid heavy strain.
30/11/2024	Pain and swelling nearly absent (VAS: 2/10), no crepitus, and normal ROM achieved. WOMAC Score: 28.	ROM: Normal.	Reinforce lifestyle modifications and regular exercise.

## Discussion

The current study evaluated the efficacy of *Sneha Yukta Jānubandhana* in the management of *Jānu Sandhigata Vāta* vis-à-vis knee osteoarthritis over a 14-day treatment period. The results demonstrated significant improvement in both subjective symptoms and objective parameters, showcasing the effectiveness of this integrative approach.<sup>10</sup> From an Ayurvedic perspective, *Jānu Sandhigata Vāta* arises due to *Vāta* dosha aggravation, resulting in joint dryness, degeneration, and pain. The use of *Sneha Yukta Jānubandhana* addresses this imbalance by providing localized *Snigdha Guna* (unctuousness) through medicated oil (*Moorchita Taila*), which nourishes the joint, improves lubrication, and alleviates pain. Additionally, *Mridu Abhyanga* enhances blood circulation, and promotes mobility. The application of a warm *Cora* cloth roll ensures sustained therapeutic warmth, further pacifying *Vāta* dosha and improving tissue function.<sup>11</sup>

The study's findings align with the principles of modern orthopedics as well. Knee osteoarthritis is characterized by cartilage degeneration, synovial inflammation, and reduced joint lubrication. The use of medicated oil as part of *Jānubandhana* provides an external substitute for synovial fluid, enhancing joint lubrication and reducing friction during movement. Furthermore, the treatment's twelve-hour duration allowed for prolonged therapeutic action, resulting in significant pain relief and improved joint flexibility.<sup>12</sup>

The subjective parameters (*Janusandhi Shoola*, *Janusandhi Shotha*, *Janusandhi Atopa* and WOMAC Score) showed marked improvement, with VAS scores decreasing from 6/10 on Day 1 to 2/10 on Day 14. Objective assessments, including ROM, also reflected a progressive recovery, with normal joint function achieved by the end of the treatment period. These outcomes validate the synergistic action of *Moorchita Taila* and external bandaging in reducing inflammation, enhancing mobility, and promoting overall joint health.<sup>13</sup>

The study is not without limitations. Being a single-case observational study, the findings cannot be generalized. A larger sample size with a controlled design could provide more robust evidence for the efficacy of this treatment modality. Additionally, a longer follow-up period would help assess the sustainability of the therapeutic outcomes.<sup>14</sup>

## Results

The study demonstrated significant improvements in the management of *Jānu Sandhigata Vāta* (knee osteoarthritis)



using *Sneha Yukta Jānubandhana*. The results are summarized below based on subjective and objective assessments conducted over the 14-day treatment period:

### Subjective Findings

#### 1. Pain Reduction (*Janusandhi Shoola*)

- Initial pain intensity was reported as moderate to severe, with a Visual Analogue Scale (VAS) score of 6/10 on Day 1.
- By Day 14, the VAS score had reduced to 2/10, indicating significant relief from pain.

#### 2. Crepitus (*Janusandhi Atopa*)

- A noticeable cracking sound during knee movement was present initially.
- By Day 14, crepitus was minimal to absent, indicating improved joint lubrication.

#### 3. Swelling (*Janusandhi Shotha*)

- Mild swelling around the knee joint was observed at the start of treatment.
- By Day 14, swelling was completely resolved.

#### 4. WOMAC Score

- The initial WOMAC score was 68, reflecting moderate to severe disability.
- By Day 14, the WOMAC score had decreased to 25, indicating excellent improvement in joint function and daily activities.

### Objective Findings

#### 1. Range of Motion (ROM)

- On Day 1, flexion was restricted, with pain onset at 90°.
- By Day 14, normal flexion and extension were achieved without any pain, indicating restored joint mobility.

### Overall Findings

- Patients experienced a **65% reduction in pain intensity** based on VAS scores.
- ROM improved significantly, with flexion increasing from 90° to normal by Day 14.
- Quality of life improved, as reflected in the substantial decrease in WOMAC scores.

### Conclusion

The study highlights the efficacy of *Sneha Yukta Jānubandhana* in the management of *Jānu Sandhigata Vāta* (knee osteoarthritis). The integrative approach, involving the application of medicated oil (*Moorchita Taila*) and external bandaging, demonstrated significant improvement in both subjective symptoms, such as pain, swelling, crepitus, WOMAC score and objective parameters, including range of motion (ROM). By addressing the underlying *Vāta* dosha imbalance through localized *Snigdha Guna* (unctuousness) and promoting joint lubrication, *Sneha Yukta Jānubandhana* provided marked relief from pain, enhanced joint mobility, and improved the patient's quality of life. The results, with VAS scores reducing from 6/10 to 2/10 and WOMAC scores improving from 68 to 25, underscore the therapeutic potential of this treatment modality in managing degenerative joint conditions effectively. This study concludes that *Sneha Yukta Jānubandhana* is a promising, safe, and effective therapy for managing *Jānu Sandhigata Vāta* or knee osteoarthritis. However, further studies with larger sample sizes and long-term follow-ups are recommended to substantiate these findings and explore the sustained benefits of this treatment approach.

### CONFLICT OF INTEREST – NIL

### SOURCE OF SUPPORT –NONE

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