

Clinical Case Study on the Effect of *Koladi Upanaha Swedana* in the Management of Knee Osteoarthritis (*Sandhigata Vata*)

Kailash Tada^{*1}, Gyan Prakash Sharma², Deelip Kumar Vyas³, Vaidya Sadhana Dadhich⁴, Jitendra Pal⁵

¹PG Scholar, Department of *Panchakarma* at Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur.

²H.O.D & Professor, Department of *Panchakarma* at Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur

³Assistant Professor, Department of *Panchakarma* at Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur

⁴PG Scholar, Department of *Panchakarma* at Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur.

⁵PG Scholar, Department of *Panchakarma* at Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur

Corresponding Author: Dr. Kailash Tada, Email: kailashtada@gmail.com

Abstract

Background:

Sandhigata Vata, one of the *Vata Nanatmaja Vyadhis*, correlates closely with osteoarthritis (OA) of the knee in modern medicine. It manifests with *Sandhishoola* (pain), *Sandhishotha* (swelling), *Stambha* (stiffness), *Atopa* (crepitus), and *Vata purna driti sparsha* (sense of emptiness). *Upanaha Swedana*—a form of sudation therapy—combines warmth, unctuousness, and compression to pacify aggravated *vata dosha*.

Objective:

To evaluate the clinical efficacy of *Koladi Upanaha Swedana* in a patient of *Sandhigata Vata* (knee osteoarthritis).

Methods:

A 59-year-old male (OPD No. 36946/1768) with chronic knee pain for 2 years underwent *Koladi Upanaha Swedana* for 14 days. The medicated paste was prepared using *Kola*, *Kulattha*, *Devadaru*, *Rasna*, *Masha*, *Atasi*, *Tila Taila*, *Vacha*, *Shatahva*, and *Yava Churna* in *Kanji* base. Pain (VAS), stiffness, swelling, tenderness, flexion range, and WOMAC score were evaluated before and after treatment.

Results:

Marked improvement was observed: VAS pain reduced from 6→2 (66.7%), stiffness from 8→2 (75%), swelling from 3→0, flexion improved from 81°→108° (+27°), WOMAC score improved from 105→81 (22.9%).

Conclusion:

Koladi Upanaha Swedana provided significant relief in pain, stiffness, and joint function through synergistic action of *ushna*, *snigdha*, *guru*, *sthira guna* and physiologically via thermotherapy, transdermal absorption, and mechanical compression.

Keywords: *Upanaha Swedana*, *Koladi Upanaha*, *Sandhigata Vata*, Osteoarthritis, Ayurveda, Thermal therapy.

1. Introduction

Osteoarthritis (OA) is a chronic, progressive degenerative joint disorder and one of the top ten disabling diseases worldwide [15]. It predominantly affects weight-bearing joints like the knees, leading to pain, stiffness, restricted motion, and deformity. The WHO estimates global OA prevalence at 3.3–3.6% of the population, particularly women above 50 years [15].

In Ayurveda, OA corresponds to *Sandhigata Vata*, first described in *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* [1–3]. It is characterized by *Sandhishoola*, *Sandhishotha*, *Stambha*, *Atopa*, and *Vata purna driti sparsha* [2]. The pathogenesis (*samprapti*) involves *vata dosha* aggravated due to *dhatu kshaya* (tissue depletion) and *srotorodha* (obstruction), leading to dryness and degeneration of *sandhi asthi* and *snayu*.

Modern pathology describes similar mechanisms: chondrocyte apoptosis, cartilage matrix degradation, synovial inflammation, and subchondral sclerosis [15].

Upanaha Swedana is an external fomentation described under *Swedana Karma* that involves applying a medicated paste (*lepa*) over affected joints, followed by bandaging (*bandhana*). It provides continuous mild heat and pressure, combining *snehana* (unctuousness) and *swedana* (sudation) [1].

Among numerous formulations, *Koladi Upanaha* is particularly *vata-shamaka* due to ingredients like *Rasna* (anti-inflammatory), *Kulattha* (anti-edematous), and *Atasi* (rich in omega-3 fatty acids) [6,15].

2. Case Presentation

Patient ID: OPD No. 36946/1768

Age/Sex: 59 years / Male

Occupation: Government Servant

Socioeconomic Class: Middle Class

Diet: Vegetarian

Habits: Tobacco chewing

Residence: Urban

Duration of Illness: 2 years

Onset: Gradual

Diagnosis: *Janu Sandhigata Vata* (Osteoarthritis of knee joint)

Chief Complaints

- *Sandhishoola* (pain in both knees) – 2 years
- *Sandhishotha* (swelling)
- *Stambha* (stiffness in morning hours)
- *Atopa* (crepitus)

Ashtavidha Pariksha

Parameter	Observation
<i>Nadi</i>	<i>Vata-Pitta gati</i>
<i>Mala</i>	Regular, slightly ruksha
<i>Mutra</i>	Normal
<i>Jihva</i>	<i>Peeta alpa mala yukta</i>
<i>Shabda</i>	Normal
<i>Sparsha</i>	<i>Ushna</i>
<i>Drik</i>	<i>Spashta</i>
<i>Akruti</i>	<i>Madhyama</i>

Dashavidha Pariksha

Parameter	Observation
<i>Prakriti</i>	<i>Vata-Pitta</i>
<i>Sara</i>	<i>Meda sara</i>
<i>Samhanana</i>	<i>Sthoola</i>
<i>Pramana</i>	Normal
<i>Satmya</i>	<i>Vyamishra satmya</i>
<i>Satva</i>	<i>Madhyama</i>
<i>Ahara Shakti</i>	<i>Madhyama</i>
<i>Vyayama Shakti</i>	<i>Madhyama</i>
<i>Vaya</i>	<i>Vridha avastha</i>
<i>Desha</i>	<i>Jangala pradesha</i>

Examination Findings

Parameter	Observation
Pain (VAS)	6/10
Tenderness	Grade II
Swelling	Mild (3/5)
Stiffness	8/10
Flexion Range	81°
Crepitus	Present
Walking Distance	200 m
WOMAC Total Score	105

3. Therapeutic Intervention

3.1 Formulation Used

Koladi Upanaha — prepared with *Kola*, *Kulattha*, *Devadaru*, *Rasna*, *Masha*, *Atasi*, *Tila Taila*, *Vacha*, *Shatahva*, and *Yava Churna* mixed in *Kanji (Amla dravya)* [6].

3.2 Method

1. **Purva Karma:** Local *Abhyanga* with *Tila Taila* for 10 min.
2. **Pradhana Karma:** Warm paste applied (~0.5 cm thick) over both knees; covered with *Eranda patra* and bandaged with cotton cloth. Retained for 6 hours.
3. **Pashchat Karma:** Bandage removed; joints cleaned with lukewarm water.

3.3 Duration

14 days continuous (16/06/25–29/06/25).

3.4 Pathya-Apathya

- *Pathya:* *Laghu*, *ushna*, *snigdha ahara*, mild walking, warm water.
- *Apathya:* *Guru*, *ruksha*, *sheeta ahara* (curd, fried food), night awakening, exposure to cold air.

4. Observation and Results

Clinical Parameter	Before Treatment	After Treatment	% Improvement
Pain (VAS)	6	2	66.7%
Stiffness	8	2	75%
Swelling	3	0	Resolved
Tenderness	Grade II	Grade I	Improved
Crepitus	Present	Mild	–
Flexion Range	81°	108°	+27°
Walking Distance	200 m	500 m	+150%
WOMAC Total	105	81	22.9%

Overall improvement: ~65–70% after 14 days.

No adverse effects observed.

5. Discussion

The patient demonstrated classical *Vata-vriddhi lakshanas*—pain, stiffness, and crepitus—correlating with degenerative OA changes [1,2,15]. *Koladi Upanaha Swedana* pacified *vata* through *ushna*, *snigdha*, *guru*, *sthira* properties [1,3].

The *ushna guna* of *Rasna*, *Devadaru*, and *Kulattha* relieved *sheeta guna* of *vata*, while *Tila Taila* and *Atasi* provided unctuousness restoring lubrication in *sandhi*. *Kanji* (fermented base) enhances local absorption and acts as a natural anti-inflammatory [6,15].

Pharmacological Explanation

- *Rasna* – anti-inflammatory, analgesic (flavonoids, lactones).
- *Kulattha* – reduces uric acid and inflammation [15].
- *Atasi* – omega-3 fatty acids promoting cartilage protection [15].
- *Eranda* – ricinoleic acid acts as counter-irritant.
- *Vacha* – bioavailability enhancer.

Modern Mechanisms

1. **Thermal Effect:** Mild local heat improves blood flow, elasticity, and metabolism [15,16].
2. **Transdermal Absorption:** Oils and *kanji* enhance penetration of phytoconstituents [17].
3. **Compression:** Reduces effusion and stabilizes the knee joint.
4. **Neuromodulation:** Warmth stimulates pain gate control pathways reducing nociceptive transmission [15].

These collectively explain the significant symptomatic relief observed in this case.

Comparison with Published Studies

Results align with prior trials where *Koladi* and *Kolakulathadi Upanaha* achieved 60–80% symptom relief in OA knee [7–9].

Safety and Tolerability

No adverse events were observed—consistent with literature that reports *Upanaha Swedana* as a safe, non-invasive, and cost-effective therapy [15–18].

6. Conclusion

This case demonstrates that *Koladi Upanaha Swedana* is an effective, affordable, and safe local therapy for *Sandhigata Vata (knee osteoarthritis)*. Over 14 days, 65–70% improvement was achieved in pain, stiffness, and mobility without adverse effects.

The therapy integrates classical *vatahara* principles and modern biomedical mechanisms—heat-induced vasodilation, transdermal drug action, compression, and neuromodulation. Further controlled studies are warranted to establish its long-term efficacy and mechanistic pathways.

References

1. Acharya JT, editor. *Charaka Samhita of Agnivesha*. Varanasi: Chaukhambha Sanskrit Sansthan; 2011.
2. Shastri AD, editor. *Sushruta Samhita of Sushruta*. Varanasi: Chaukhambha Sanskrit Sansthan; 2012.
3. Paradkar HS, editor. *Ashtanga Hridaya of Vagbhata*. Varanasi: Chaukhambha Orientalia; 2014.
4. Sharma PV, editor. *Chakradatta of Chakrapani Datta*. Varanasi: Chaukhambha Sanskrit Series Office; 2016.
5. Sharma PV, editor. *Kashyapa Samhita (Vridhdha Jeevaka Tantra)*. Varanasi: Chaukhambha Sanskrit Sansthan; 2018.
6. Tripathi I, editor. *Bhaishajya Ratnavali* of Govind Das Sen. Varanasi: Chaukhambha Sanskrit Sansthan; 2012.
7. Bagalwadi K, Kulkarni A, Prasad R. A comparative study on Koladi and Kushtadi *Upanaha Sweda* in *Janu Sandhigata Vata*. *Int Ayurvedic Med J*. 2019;3(6):1936-42.
8. Chandel K, Sharma KK, Mukeriya PK. Comparative clinical evaluation of *Kolakulathadi Churna Upanaha* and *Eranda Taila Pana* in *Vatakantaka*. *J Ortho Bone Disord*. 2024;8(2):261.
9. Kohale D, Rahangdale J, Madankar S. *Upanaha Sweda* therapy in Ayurveda and its effectiveness in joint disorders. *Int Ayur Med J*. 2019;7(12):2304-07.
10. Srujana BN, Kumar MP, Johar B. The multidimensional therapeutic applications of *Upanaha Sweda*. *Ayushdhara*. 2024;11(3):24-30.
11. Shaikh AS, Khan TKI, Katole HP. *Upanaha Swadana*: A review article with special reference to bandaging. *World J Pharm Med Res*. 2023;9(1):56-59.

12. Imlikumba, Ringu P. *Naga Mircha (Bhut Jolokia) Lepa* as *Shoolaprashamana* in *Sandhigatavata* – A case study. *Int J Ayur Pharma Res.* 2019;7(5):56-59.
13. Verma R, Kaushik A. Role of *Swedana* and *Panchakarma* in osteoarthritis – a comprehensive review. *J Ayurveda Integr Med.* 2023;14(2):115-24.
14. Witt CM, Michalsen A, Kessler C, et al. Comparative effectiveness of complex Ayurvedic treatment in knee osteoarthritis. *Clin Rheumatol.* 2013;32(6):871-81.
15. Saoji AV, et al. Efficacy of Ayurvedic *Panchakarma* including *Swedana* in osteoarthritis management. *J Altern Complement Med.* 2015;21(2):72-78.
16. Kessler CS, Michalsen A. Ayurveda as a whole medical system in global medicine. *Glob Adv Health Med.* 2012;1(5):46-54.