DOI: 10.7860/JCDR/2025/76840.21205

Case Report

Ayurveda Section

Conservative Treatment of Medial Meniscus Tear Through Ayurveda: A Case Study

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ABSTRACT

Meniscal tears are common knee injuries caused by acute trauma in younger individuals and degenerative changes in older adults, often linked to osteoarthritis. The menisci play a crucial role in shock absorption, load distribution, and knee joint stability. In Ayurveda, meniscal tears can be correlated with *Sira Snayu Gata Vata* (vascular and ligamentous disorder). A 47-year-old male presented with pain, swelling, tenderness, and restricted movement in the right knee for six months. He was advised to undergo Magnetic Resonance Imaging (MRI) investigation by a physician, which revealed a medial meniscus tear in the right knee joint. In clinical examinations, the McMurray test, Apley grind test, and the bounce home test were positive. Ayurvedic treatments, including *Shodhan* (bio-purification) and *Shaman* (palliative) therapies, were administered as an alternative to corticosteroids, aimed at reducing potential complications. This study evaluates the effectiveness of Ayurvedic treatment and rehabilitation strategies in improving functional outcomes for meniscal tears. In cases of medial meniscus injury, meniscectomy is often performed surgically. This case study demonstrates significant improvement in the assessment parameters of medial meniscus tears with Ayurvedic treatment and rehabilitation therapies, highlighting their potential as a non-invasive therapeutic approach for meniscal injuries.

Keywords: Knee injury, Meniscectomy, Osteoarthritis, Rehabilitation, *Sira snayu gata vata*

CASE REPORT

A 47-year-old male patient presented with complaints of pain, swelling, tenderness, and limited range of motion in the right knee joint for six months. He had a history of falling from a bike six months prior. He was diagnosed with a medial meniscal tear of the right knee joint through an MRI report. He had taken diclofenac 100 mg but did not experience relief, prompting his admission to the Ayurvedic hospital for further treatment.

The patient had no history of hypertension, diabetes, thyroid dysfunction, tuberculosis, asthma, or other allergic illnesses; however, there was a history of a fall from a bike. Family and medical history were not significant. Personal history revealed a mixed diet, tea consumption, disturbed sleep, and regular bowel movements. There was no significant surgical history.

Examination of patient: The pulse rate was 78 beats per minute, indicating *Vata-Pitta* dominance. The frequency of micturition was 4-5 times per day, which was normal (*Samyak*). Bowel movements were regular and in a natural state (*Prakrita*). The tongue appeared clean (*Niraam*). The sound of speech was clear (*Shapasth*). The sense of touch was neutral, neither hot nor cold (*Anushnasheet*). Vision was normal (*Prakrita*). The body build was medium (*Madhyam*) [Table/Fig-1].

General examination: Upon general examination, blood pressure was 130/80 mmHg, respiratory rate was 16/min, pulse rate was 78/min, and temperature was 98.6°F, all within normal limits. The McMurray test, Apley grind test, and bounce home test were positive on knee examination. Medial Collateral Ligament (MCL) injury, Patellofemoral Pain Syndrome (PFPS), and plica syndrome were considered differential diagnoses for a medial meniscus tear. However, based on the MRI report, the final diagnosis confirmed a medial meniscus tear of the right knee joint.

The patient was admitted to the hospital to receive Ayurvedic treatments, applying *Vata vyadhi* treatment principles.

1. *Shodhan* treatment (bio-purification treatment)
2. *Shaman* treatment (curative treatment)

***Shodhan* treatment (bio-purification):** The treatment plan integrates Ayurvedic therapies with modern physiotherapy to provide a holistic approach to knee rehabilitation. The *Purva Karma* (pre-procedure) stage prepares the body with oil massage and medicated sudation made with boiling rice and milk. The *Pradhan Karma* (main procedure) phase focuses on detoxification through medicated enemas, nourishment, and pain management. Ayurvedic therapies were utilised to promote healing and mobility. This regimen was designed to reduce inflammation, improve joint function, and slow down the degenerative process [Table/Fig-2].

S. No.	Examination	Observation
1.	*Nadi* (Pulse rate)	78 times/minute, *Vata pitta*
2.	*Mutra* (Frequency of micturition)	4-5 times per day, *Samyak*
3.	*Mala* (Bowel)	Regular, *Prakrita*
4.	*Jihva* (Tongue)	*Niraam*
5.	*Shabda* (Sound)	*Shapasth*
6.	*Sparsha* (Touch)	*Anushnasheet*
7.	*Drik* (Vision)	*Prakrita*
8.	*Akriti* (Body built)	*Madhyam*

[Table/Fig-1]: *Ashthavidha Pariksha* (Eight folds of examinations).

S. No.	Procedure	Duration
1.	***Purva Karma* (pre-procedure):** Local *Snehan* with *Murivenna tail* Followed by *Shashtik shali pinda swedan* on the right knee	15 days
2.	**Pradhan Karma:** (main procedure) ***Anuvasan Basti:*** *Murivenna taila* (60 mL) ***Niruha Basti:*** *Panchtikta ksheer basti* (350 mL) ***Basti Pratyagaman kala:*** *Anuvasan basti:* avg. 8-9 hours (Retention time) Niruh basti: avg. 15-20 mintues • *Janu dhara* with *Dashmoola taila* on the right knee • *Janu basti* with *Murivenna taila* on the right knee	15 days
3.	*Upnah Swedan* on the right knee joint **Physiotherapy:** Transcutaneous Electrical Nerve Stimulation (TENS) Proprioceptive Neuromuscular Facilitation (PNF)	30 days

[Table/Fig-2]: *Shodhan Chikitsa* (bio-purification).

***Basti* ingredients (Medicated enema):** The table outlines the ingredients used in the oil enema and medicated enema, including honey, rock salt, oil, *Withania somnifera* (Ashwagandha), and fennel, along with a decoction made from a combination of five drugs mixed with milk [Table/Fig-3].

S. No.	Basti	Ingredients	Dose	Days
1	*Anuvasna basti* (oil enema)	*Murivenna taila*	60 mL	6 days
2	*Niruha basti* (medicated enema)	*Madhu* (Honey)- 40 mL *Saindhav Lavan* (Rock salt)- 10 gm *Murivenna taila* -50 mL *Shatpushpa churna*, *ashwagandha churna kalka* (paste)- 20 gm Cap *shilajeet* - 4 cap *Panchtikta bharad kwath* (decoction)- 100 mL Milk- 100 mL Total quantity =320 mL	320 mL	9 days

[Table/Fig-3]: *Basti Ingredients* (Medicated enema).

N= *Niruh basti* (Medicated enema)

A= *Anuvasan basti* (oil enema)

The provided table illustrates a pattern over 15 days, with "A" denoting *Anuvasan basti* (oil enema) and "N" denoting *Niruh basti* (medicated enema) in a specific sequence. Specifically, "A" Anuvasan basti (oil enema) is administered on Days 1, 4, 7, 10, 13, and 15, while "N" *Niruh basti* (medicated enema) is recorded on the remaining days [Table/Fig-4].

DISCUSSION

The prevalence of meniscal tears is approximately 12% to 14%, with an estimated incidence of 61 cases per 100,000 people [6]. Choosing the best course of treatment can be challenging and depends on several factors, including an understanding of the meniscus's vascularity, anatomical structure, and tear pattern. Evidence demonstrates the effectiveness of non-operative treatment, especially in the short term and in cases where osteoarthritis is present.

This case study is important because it supports Ayurvedic treatments, such as *Shaman* (curative) and *Shodhan* (bio-purification), which may help decrease reliance on harmful corticosteroids and reduce the risk of complications. Some previous studies, including their treatments and conclusions, are mentioned in [Table/Fig-7] with references [7-9]. In presenting this case study, a medicated enema and *Upanaha Swedana* (sudation) were primarily used, which were lacking in previous studies. This approach shows significant results in all assessment parameters [Table/Fig-6] concerning medial meniscus tears within two months.

Action of *Shodhan (bio-purification)* and *Shaman (curative)* treatment: *Murivenna* oil massage for ligament tears involves a combination of anti-inflammatory, analgesic, tissue-regenerating, and circulation-enhancing effects. By reducing inflammation, alleviating pain, promoting tissue repair, and improving mobility, *Murivenna* oil supports the healing process of ligament tears. It can serve as an effective adjunct treatment in Ayurvedic care for soft tissue injuries [10].

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15
A	N	N	A	N	N	A	N	N	A	N	N	A	N	A

[Table/Fig-4]: Sequences of enema.

***Shaman* treatment (curative treatment):** The table outlines an oral medication regimen designed to support musculoskeletal health or joint degeneration. The prescribed medications aim to reduce inflammation, improve bone strength, and support nerve function [Table/Fig-5].

S. No.	Medications (Orally)	Dose	Anupan & Frequency	Duration
1.	Cap Palsinuron	1 cap	Twice a day after food with water	2 months
2.	*Maharasnadi kwath*	20 mL	Twice a day before food with equal amount of water	2 months
3.	*Lakshadi Guggulu*	500 mg	2 tabs twice a day after food with water	2 months
5.	Cap *Gandha taila*	2 cap	Twice a day after food with milk	2 months

[Table/Fig-5]: *Shaman* treatment (curative treatment).

On follow-up after two months: On follow-up after two months, the table presented a comparative analysis of various clinical parameters before and after treatment, indicating significant improvement in the patient's condition, particularly in pain, joint function, and mobility [Table/Fig-6] [1-5].

S. No.	Parameters	Pre-treatment	Post-treatment
1.	Pain [4]	VAS -7	VAS -1
2.	Tenderness [5]	Present (Grade 3)	Absent (Grade 0)
3.	Swelling [5]	Present (Grade 3)	Absent (Grade 0)
4.	Range of movement [5]	Restricted flexion of right knee- Grade 3 Extension of right knee -Grade 2	Marked improved flexion of right knee- Grade 1 Extension of right knee - Grade 1
5.	Walking time (50 steps)	1 min	20 second
6.	McMurray test [1]	Positive	Negative
7.	Apley grind test [2]	Positive	Negative
8.	Bounce home test [3]	Positive	Negative

[Table/Fig-6]: Comparative analysis of various clinical parameters before and after treatment [1-5].
VAS: Visual analogue scale

Author name	Case description	Treatment	Conclusion
Meghna PP et al., [7]	A 22-year-old male presented complaints of pain and slight oedema in the right knee joint. He had a history of falls 2 months back.	*Lepana*, *jambirapinda swedan*, *tailadhara* along with *lakshadi guggulu* and orally ayurvedic drugs for 3 months.	Significant improvement in pain and oedema in the right knee joint
Ruparel SJ et al., [8]	A 38-year-old female came with pain and inflammation in her right knee joint with difficulty in walking for 5 years.	*Janu Basti* with *murivenna taila*, *gokshur guggulu*, *navjivan rasa*, *shatavari* powder orally for 30 days	Significant relief in pain, inflammation and Range of Motion (ROM) of the right knee joint
Pratap Shankar KM et al., [9]	Twenty cases diagnosed with knee ligament injuries ranging from partial to complex ones	*Dasamoola Kashaya Dhara*, *Lepana* with *Nagaradi choornam*, *Bandana* with *Murivenna* oil for 7 days *Rasnasaptaka kashaya Yogaraja Guggulu* for 3 months	There was statistically significant relief in KOOS and IKDC scores and improved joint stability
Present study	A 47-year-old male patient presented with complaints of pain, swelling, tenderness, and limited range of motion in the right knee joint for six months. He had a history of falling from a bike before six months.	Local *Snehan* (oleation) with *murivenna tail*, *Upnaha swedan*, medicated enema, *Janubasti* with *murivenna taila*, physiotherapy and oral ayurvedic medications for two months.	Patient show significant improvement in assessing parameters like pain, range of motion, and in assessing tests.

[Table/Fig-7]: Previous studies with treatment and conclusion of medial meniscus tear [7-9].

Shashtika Shali Pinda Sweda works through a combination of nourishing, anti-inflammatory, analgesic, and rejuvenating actions. It provides deep tissue nourishment, reduces pain and inflammation, improves circulation, and strengthens muscles and joints. By balancing *Vata* and *Pitta* doshas, enhancing tissue repair, and promoting overall joint and muscle health, it is an effective therapy for managing musculoskeletal and neurological conditions such as arthritis, ligament injuries, and muscle wasting [11].

***Panchatikta Ksheer Basti*:** This involves the administration of medicated milk (*Ksheer*) prepared with five bitter herbs (*Panchatikta*). *Panchatikta Ksheer Basti* (enema) works through a combination of detoxification, anti-inflammatory action, tissue nourishment, and immunomodulation. It is highly effective in addressing conditions involving inflammation, joint disorders, and tissue damage, such as ligament tears, arthritis, and autoimmune diseases. By nourishing and strengthening the tissues, improving joint lubrication, and pacifying the aggravated *Vata* and *Pitta* doshas (diseases), this therapy aids in the holistic recovery of injured or inflamed joints and ligaments [12].

***Janu Dhara*:** This involves the continuous pouring of medicated warm oil or herbal decoctions over the knee joint. It can help improve circulation in the knee area, reducing swelling, improving the range of motion in the knee joint, and alleviating fluid accumulation (such as effusion) in the joint, which often occurs after an Anterior Cruciate Ligament (ACL) tear [13].

***Janu Basti*:** In *Janu Basti* (knee joint), a dough ring is placed around the knee joint, and warm medicated oil or herbal decoctions are poured and retained within the ring for a certain period. *Janu Basti* works by reducing inflammation, alleviating pain, improving circulation, relaxing muscles, and promoting tissue healing, making it an effective supportive therapy for ligament injuries [14].

***Upanaha Swedana*:** *Upanaha Swedana* (sudation) acts through a combination of physical and chemical processes to promote healing in ligament tears. The improved blood flow and the presence of beneficial compounds from the herbs may stimulate the regeneration of damaged cells and tissues in the ligament, facilitating the healing process [15].

Cap Palsinuron: This supplement plays a supportive role in the healing of ligament tears by reducing inflammation, alleviating pain, relaxing muscles, and promoting tissue regeneration [16].

***Maharasnadi Kwath*:** This herbal formulation is believed to balance the Vata dosha, which is often associated with joint and ligament issues. Its multifaceted approach includes anti-inflammatory effects, pain relief, improved circulation, and nutrient supply, making it a valuable treatment in Ayurvedic practice for musculoskeletal injuries [17].

***Lakshadi Guggulu*:** This formulation functions through a combination of anti-inflammatory, analgesic, and rejuvenating properties, making it beneficial for managing ligament tears. Its ability to promote circulation, detoxification, and tissue regeneration contributes to its effectiveness in enhancing recovery from musculoskeletal injuries [18].

***Gandha Taila* caps:** These capsules are rich in essential oils and nutrients, providing nourishment to the ligaments and surrounding tissues, which supports their repair and regeneration [19].

Transcutaneous Electrical Nerve Stimulation (TENS) Physiotherapy: TENS is an effective physiotherapy modality for managing pain and facilitating rehabilitation in patients with ligament tears. By acting on multiple mechanisms, including pain modulation, muscle relaxation, and improved circulation, TENS supports the healing process and enhances functional recovery [20].

Proprioceptive Neuromuscular Facilitation (PNF) physiotherapy: This physiotherapy technique enhances recovery from ligament tears. By improving proprioception, facilitating muscle activation, and promoting flexibility and strength, PNF plays a critical role in restoring function and preventing re-injury [21].

CONCLUSION(S)

After two months of treatment, significant improvement in the patient's clinical condition was observed. The VAS demonstrated a reduction in the patient's pain levels. Additionally, the tests and assessment parameters used to evaluate the patient's diagnosis revealed considerable improvement. Therefore, this case study suggests that Ayurvedic treatment may be effective in managing medial meniscus tears in their early stages.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Nov 16, 2024
- Manual Googling: Feb 03, 2025
- iThenticate Software: Mar 18, 2025 (6%)

ETYMOLOGY: Author Origin

EMENDATIONS: 8

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Nov 15, 2024**
Date of Peer Review: **Jan 28, 2025**
Date of Acceptance: **Mar 20, 2025**
Date of Publishing: **Jul 01, 2025**