ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 17, Issue, 07, pp.33917-33919, July, 2025
DOI: https://doi.org/10.24941/ijcr.49274.07.2025

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

UTILITY OF PANCHAKARMA THERAPY IN THE MANAGEMENT OF LIGAMENTAL INJURY WITH SPECIAL REFERENCE TO KNEE JOINT – A CASE STUDY ON JANU BASTI WITH MAHANARAYAN TAILA

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ARTICLE INFO

Article History:
Received09th March, 2025
Received in revised form
21st April, 2025
Accepted 19th May, 2025
Publishedonline30th July ,2025

Keywords:

Janu Basti, Ligamental Injury, *Mahanarayan Taila, Nadi Sweda, Panchakarma.*

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ABSTRACT

Ligament injuries, particularly around the knee joint, are frequently observed in both athletes and the general population. Among these, the medial collateral ligament (MCL) is the most commonly affected. Most MCL injuries do not require surgery and can be effectively managed in primary care settings. Conventional treatments typically include pain relief medications, physical therapy, or surgical procedures when necessary. In contrast, Panchakarma therapy - specifically *Janu Basti*- presents a non-invasive Ayurvedic alternative. This case study explores the therapeutic potential of *Janu Basti* with *Mahanarayan Taila* in treating an MCL injury. The intervention proved to be a safe and effective Ayurvedic method, resulting in notable pain relief, enhanced joint flexibility, and an overall improvement in the patient's quality of life.

Citation: Dr. Jinesh Kumar Jain and Dr. Chaitanya Vaidya. 2025. "Utility of panchakarma therapy in the management of ligamental injury with special reference to knee joint – a case study on janu basti with mahanarayan taila.". *International Journal of Current Research, 17, (07), 33917-33919.*

INTRODUCTION

The knee joint, one of the most burdened joints in the body, must balance the contrasting demands of stability and mobility. Various anatomical structures including the tibial and fibular collateral ligaments, oblique and arcuate popliteal ligaments, ligamentum patellae, and the cruciate ligaments work collectively to maintain its stability. This stability largely relies on the quadriceps femoris muscle and the collateral ligaments. With the rising incidence of accidents and sports-related trauma, injuries to the knee ligaments are becoming increasingly common, particularly affecting the anterior cruciate ligament (ACL), medial collateral ligament (MCL), and meniscus. The MCL is the primary stabilizing structure on the medial aspect of the knee, offering crucial resistance against valgus stress during flexion, as well as controlling both internal and external rotational forces. Injuries to the medial collateral ligament are the most prevalent among knee ligament injuries.Injury typically results from a valgus force applied to a flexed knee, though more severe MCL injuriesespecially those resulting from high-impact traumamay involve additional forces and complex injury patterns. Most MCL injuries do not require surgery and can be effectively managed by primary care providers or sports medicine professionals. Proper bracing and carefully selected physiotherapy are vital for ensuring swift recovery and optimal outcomes. However, injuries such as cruciate ligament tears, meniscal damage, or osteochondral defects often necessitate surgical intervention and must be promptly diagnosed. *Panchakarma* offers a holistic approach to health, functioning as a promotive, preventive, curative, and rehabilitative therapy. According to Acharya Charaka, disorders controlled solely by palliative (*Samshamana*) measures may recur, while those eliminated through purificatory (*Samshodhana*) therapies are less likely to return. In cases of ligament injuries, Ayurvedic management involves therapies such as *Abhyanga* (therapeutic oil massage), *Swedana* (sudation), and internal herbal formulations. Treatment strategies typically integrate both external Panchakarma procedures like *Snehana* and *Swedana* with internal medicines to reduce inflammation and pain and to support tissue regeneration. Key Ayurvedic therapies include *Janu Basti* (localized oil pooling over the knee), *Lepana* (application of herbal pastes), and *Basti* (medicated enemas). *Janu Basti*, adapted from *Shiro Basti*, involves external oleation and fomentation. The oleation process helps to alleviate the dryness (*Ruksha Guna*) attributed to Vata, while the sudation mitigates coldness (*Sheeta Guna*), effectively relieving stiffness (*Stambha*) and heaviness (*Gaurava*).

Internal medications typically include herbs with analgesic (*Vedanasthapak*), nervine tonic (*Nadibalya*), and anti-inflammatory (*Shothahara*) properties. Nutritional support focuses on calcium-rich foods with sweet (*Madhura*) and sour (*Amla*) tastes. In the rehabilitation phase, strengthening exercisesparticularly targeting the quadricepsare recommended to restore joint function.

Patient Information: A 34-year-old male sports instructor reported to the Panchakarma OPD with complaints of pain, swelling, and stiffness in his right knee joint, along with difficulty in walking and squatting. The symptoms began 15 days ago following a twisting injury sustained while playing football.

History

- **Past History:** No known chronic illnesses
- **Injury History:** Sudden twisting of the right knee during sports, followed by swelling, pain, and restricted movement

Investigations

- MRI: Grade I-II Medial Collateral Ligament sprain
- No bony involvement or meniscal tear

Clinical Findings

- **Local Examination**

- Swelling present
- Tenderness over the medial aspect of the knee
- **Range of motion:** Flexion limited, extension painful
- **Ayurvedic Diagnosis:** *Sandhi-Marma-Ghata (SnayuAbhighata) – Vatadhikya Lakshana*
- **Prakriti:** Vata-Pitta
- **Agni:** Mandagni
- **Nidana:** Agantuj - Abhighata (trauma)

Treatment Protocol

Panchakarma Procedure – Janu Basti

- **Oil Used:** *Mahanarayan Taila*
- **Duration:** 7 consecutive days
- **Timing:** 30 minutes per session
- **Methodology:**
- A dough ring prepared from black gram flour was placed over the knee joint.
- Warm *Mahanarayan Taila* was poured into the ring and kept at a lukewarm temperature throughout the procedure.
- This was followed by gentle local massage and *Nadi Swedana* (localized steam fomentation).

Observations from the Study

- **Oil Quantity:** For the first three days of *Janu Basti* therapy, a minimum of 75–100 ml of oil was required. Fresh oil was then used for the remaining four days. On average, each patient needed approximately 200–250 ml of oil over the full seven-day course.
- **Amount of Masha (Black Gram):** The procedure used around 200–250 grams of *Masha* for the first three days, with fresh dough prepared for the subsequent four days. In total, about half a kilogram of *Masha* was required per patient for the entire treatment duration.
- **Height of the Janu Basti Reservoir:** The dough ring used for forming the oil reservoir around the knee measured approximately 3–4 *Angula* (fingerbreadths) in height.
- **Oil Temperature:** Lukewarm oil maintained at a temperature of 40–42°C was generally well tolerated by most patients.
- **Duration of Procedure:** The therapy was administered for 30 minutes, twice dailyfor seven consecutive days.

Clinical Observations

Parameter	Day 1	Day 7
Pain (VAS Scale 0–10)	8	2
Swelling	Present	Reduced
Tenderness	Severe	Mild
Range of Motion	Limited	Improved
Difficulty in Walking	Severe	Minimal
Stiffness (Morning)	Present	Absent

DISCUSSION

The administration of *Janu Basti* using *Mahanarayan Taila* resulted in marked relief from pain and inflammation, attributed to the oil's *Snigdha* (unctuous), *Ushna* (warm), and *Vata-pacifying* properties. The combined effects of *Snehana* (oleation) and *Swedana* (sudation) softened the ligaments and improved local circulation, effectively reducing stiffness and swelling in the knee joint.

Therapeutic Action of *Mahanarayan Taila* During *Janu Basti*

***Vata*-Pacifying and Lubricating Action:** The pathology of ligament injuries often involves vitiation of *Vata Dosha*, which has qualities opposite to those of *Mahanarayan Taila*. This oil possesses characteristics akin to *Kapha Dosha* and counters the drying and rough nature of *Vata*. The localized depletion of *Kapha* due to invading *Vata* is addressed by the nourishing and stabilizing qualities of the oil, contributing to the breakdown of the disease process (*Samprapti Vighatana*). The *Ushna*, *Snigdha*, and *Vata-Kapha Shamana* properties of *Mahanarayan Taila* alleviate joint dryness, reduce stiffness, and relieve pain by enhancing circulation and improving joint lubrication through targeted heat application.

Cleansing of Channels (*Srotas Shodhana*) and Enhanced Circulation: The gentle heat from the therapy facilitates deeper absorption of nutrients and improves microcirculation. This action helps clear *Ama* (metabolic toxins), which are often implicated in joint inflammation and restricted movement.

Relief from Pain (*Shoola*) and Swelling (*Shotha*): Key herbs in *Mahanarayan Taila*, including *Ashwagandha*, *Bala*, *Shatavari*, and *Dashamoola*, possess anti-inflammatory, analgesic, and regenerative properties. The synergistic effect of external *Snehana* and *Swedana* accelerates tissue repair in ligamentous structures. Pain (*Shoola*), a predominant symptom in most patients, is addressed effectively due to the opposite nature of the oil's qualities (*Snigdha*, *Guru*, *Ushna*) to those of

Vata. These qualities mitigate the dryness (*Ruksha*) and coldness (*Sheeta*) associated with *Vata*, thereby reducing joint stiffness (*Stabdhata*) and discomfort. The applied warmth not only pacifies the aggravated doshas but also helps in digesting the morbid *Dushyas* responsible for swelling (*Shotha*), thereby improving joint flexibility (*Sandhi Gati*) and increasing the range of motion.

Strengthening of Musculoskeletal Structures: Repeated application of *Mahanarayan Taila* nourishes the tissues of the joint, enhances flexibility, and slows cartilage degeneration by restoring *Ojas* (vital energy) and *Bala* (strength) of the knee joint.

Procedural Benefits: Massage during the procedure exerts a significant influence on the skin and lymphatic system, aiding in the drainage of excess tissue fluids and detoxification. By improving lymphatic and blood circulation, the therapy supports the removal of toxins and revitalization of tissues. The heat generated through friction and oil application promotes vitality without causing toxin accumulation. Additionally, the inherent properties (*Gunas*) of the oil contribute significantly to symptom relief and functional improvement.

CONCLUSION

This case study highlighted that *Janu Basti* using *Mahanarayan Taila* is a safe, effective, and non-invasive Ayurvedic therapy for the management of knee ligament injuries. The treatment led to notable pain relief, improved joint mobility, and better overall quality of life. However, larger-scale clinical trials are needed to develop standardized treatment protocols.

RECOMMENDATIONS

- Use in early recovery phases of Grade I–II ligament injuries
- Combine with oral Rasayana therapy for ligament strengthening
- Avoid exertion and support with gentle physiotherapy

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