

Reviving Knee Function with Panchakarma Therapy: Case Report of a Meniscal Tear

Ayurveda Section

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ABSTRACT

The knee is the largest weight-bearing compound synovial joint, important for activities like sitting, walking, and running. Knee injuries significantly impact the quality of life regardless of age, gender, or occupation. This case report evaluates the effect of panchakarma therapies on the medial meniscal tear of the left knee. A 41-year-old female experienced left knee trauma, resulting in acute pain, swelling and tenderness after a sudden twist of the left leg while walking. Magnetic Resonance Imaging (MRI) revealed a grade III medial meniscus tear of the left knee. The patient had on-and-off episodes of knee pain and instability while walking, even after repeated sessions of physiotherapy treatment and Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). After three years, patient opted for panchakarma for complete recovery of the condition. She was treated with panchakarma therapies for the period of four months, which included Godhuma Upanaha, Sthanika Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila, Janu Basti with Murchita Tila taila and Nirgundi Taila, Erandmoola Niruha Basti, and Anuvasana Basti with Guggulu Tikthaka Ghrita in a Yoga Basti schedule and oral ayurvedic medication. After the panchakarma therapies, left knee pain reduced from Visual Analogue Scale (VAS) 5 to 0 along with improved range of movements, knee flexion from 60 degrees to 110 degrees and the MRI report showed normal medial meniscus. This case report highlights the efficacy of Panchakarma therapies by addressing doshic imbalances, reducing inflammation, and supporting tissue repair, thus providing comprehensive relief and complete recovery for a grade III meniscus tear.

Keywords: Janu sandhi, Knee MRI, Medial meniscal tear, Niruha Basti, Panchakarma

CASE REPORT

The 41-year-old female teacher had been experiencing pain and swelling in her left knee joint and occasional instability when walking for the past 3.9 years. An MRI revealed a grade III medial meniscus tear three years prior, accompanied by symptoms of swelling, pain, and difficulty walking. She chose physiotherapy over the advice of surgery, but it did not bring her any relief. Following a first session of seven-day ultrasound therapy and knee cap immobilisation in January 2018, the patient reported a 10% reduction in pain and in February 2018, the patient underwent a second session of ultrasound therapy and continued immobilisation, which further reduced pain by only 10%. Later, the patient discontinued physiotherapy because of a recurrence of pain, discomfort and walking difficulties. Patient has been regularly using knee cap and NSAIDs (Combiflam 500 mg SOS) for the last three years. Examining the left knee revealed grade 2 tenderness, warmth upon palpation, and oedema (++) coupled with a Visual Analogue Scale (VAS) of 5. The McMurray's test was positive and the flexion was possible till 60 degrees. The condition was further validated by a left knee MRI on December 29, 2018, which revealed a vertical hyperintensity in the medial meniscus's posterior horn, indicating a grade III rupture with arthritic changes.

Patient intervened with Godhuma Upanaha, Sthanika Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila, Janu Basti with Murchita Tila Taila and Nirgundi Taila, Erandamoola Niruha Basti was administered on Days 02 to 06 and Anuvasana Basti with Guggulu Tikthaka Ghrita was on the remaining days along an oral medicine regimen intended to assist musculoskeletal health as part of shamana treatment (curative treatment). The recommended drugs are intended to maintain nerve function, strengthen bones, and lessen inflammation [Table/Fig-1].

Follow-up and Outcome: Examination findings like Left knee pain, tenderness and flexion were assessed at different time points, which showed marked improvement, along with significant changes seen on MRI report, detailed in [Table/Fig-2].

Date	Interventions adopted																
2 nd June -8 th June 2022	1. Godhuma Upanaha Godhuma powder: 50 gm, Rasna choorna: 10 gm, Asthishrinkhala powder: 20 gm, Haridra choorna: 4 gm, Punarnava choorna: 4 gm, Saindhava: 3 gm, Kanji: 20 mL, Dhanwantara Taila: 20 mL 2. Sthanik Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila 3. Janu Basti with Murchita Tila Taila and Nirgundi Taila																
9 th June - 8 th July 2022	1. 15 mL of Panchatikakashaya twice a day before food with lukewarm water 2. 2 capsules (600 mg) of Gandha taila twice a day before food with milk 3. 500 mg of Kaishoraguggulu tablet thrice a day after food with lukewarm water																
15 th July - 24 th July 2022	1. Sthanika Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila 2. Janu Basti with Murchita Tila Taila and Ashwagandha Balalakshadi Taila																
10 th August - 10 th September 2022	1. 2 capsules (600 mg) of Gandha taila Once a day before food with milk 2. 15 mL of Panchatikakashaya twice a day before food with lukewarm water																
14 th September - 21 st September 2022	1. Godhuma Upnaha 2. Sthanik Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila 3. Janu Basti with Murchita Tila Taila and Nirgundi Taila 4. Erandamoola Niruha Basti: Yoga Basti (3 Niruha,5 Anuvasana) <table><tr><td>Day 1</td><td>Day 2</td><td>Day 3</td><td>Day 4</td><td>Day 5</td><td>Day 6</td><td>Day 7</td><td>Day 8</td></tr><tr><td>AB</td><td>NB</td><td>NB</td><td>NB</td><td>NB</td><td>NB</td><td>AB</td><td>AB</td></tr></table> <p>Honey: 60 mL Saindhav lavana: 5 gm Murchita Tila Taila - 60 mL Kalka: Yashtimadhu choorana - 5 gm, Rasna choorana - 5 gm, Vaishwanara choorana - 5 gm, Shatapushpa chooran - 5 gm (Total: 20 gm) Kashaya: Erandamoola Kwatha choorna - 55 gm, Triphala Kwatha Choornaan - 15 gm, Asanadi Kwatha Choornaan - 15 gm, Balamoola Choornaan - 15 gm (Total Quantity: 250 mL) Anuvasana Basti with Guggulu Tiktaka Ghrita- 50 mL</p>	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	AB	NB	NB	NB	NB	NB	AB	AB
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8										
AB	NB	NB	NB	NB	NB	AB	AB										

[Table/Fig-1]: Detailed therapeutic intervention at different time points.
NB = Niruha Basti (medicated enema); AB = Anuvasana Basti (oil enema)

Assessment parameters	1 st June 2022	9 th June 2022	8 th July 2022	24 th July 2022	10 th September 2022	21 st September 2022
Pain	VAS-6	VAS-2	VAS-2	VAS-0	VAS-0	VAS-0
Difficulty in walking	Present	Absent	Mild discomfort	Absent	Absent	Absent
Restricted movement of the left knee	Left knee flexion - 60°	Left knee flexion - 100°	Left knee flexion - 90°	Left knee flexion - 110°	Left knee flexion - 110°	Left knee flexion - 110°
Tenderness over the left knee	Grade 2	Grade 0	Grade 1	Grade 0	Grade 0	Grade 0
McMurray's test	Positive	Negative	Negative	Negative	Negative	Negative
MRI left knee joint	MRI of the left knee joint - A vertical hyperintensity in the posterior horn of the medial meniscus, suggestive of a grade III tear with changes of osteoarthritis. Dated 29/12/2018	-	-	-	-	MRI of left knee joint- Normal Medial Menisci reveal normal hypointensity. Dated 23/09/2022

[Table/Fig-2]: Comparative analysis of various clinical parameters before and after treatment, and on follow-ups.
VAS: Visual analogue scale

DISCUSSION

The knee joint, known as Jānu sandhi, is a Vaikalyakaramarma, meaning injury can lead to permanent incapacity, and a Sandhi marma, a crucial point in the lower limb. Acharya Sushruta classifies it as a sandhi marma, located at the junction of the leg (jangha) and thigh (uru). Damage here can cause lifelong weakness and lameness [1], categorised as bhagna, including sandhimukta and Kanda bhagna [2]. The posterior root attachment site of the medial meniscus is crucial for sustaining hoop stress, preventing extrusion, and preserving meniscus function. A posterior root tear of the medial meniscus can now be repaired using a variety of surgical procedures. Taking into account two elements, the first being that the posterior horn of the medial meniscus has a sufficient vascular supply and that the posterior root of the meniscus is an enthesis with great healing potential [3]. Initially, inflammation occurs as a protective response. Uncontrolled inflammation can lead

to post-traumatic stiffness, so it must be carefully managed for optimal functional recovery. Acharya Charaka describes Sandhigata Vata, characterised by shotha (swelling) and shula (pain) during movement [4]. Sushruta explains that Sandhivata involves joint disorganisation, leading to severe disability. Some recent studies, including their treatments and conclusions, are mentioned in [Table/Fig-3] [5-7]. In this case, the patient's pain, swelling, and restricted movement after injury were diagnosed as Agantuja sandhi vata and treated accordingly.

Godhuma Upanaha Sweda, a type of Swedana (sudation), induces hyperthermia to improve local blood and lymphatic circulation, enhance tissue metabolism, reduce inflammation, and relax muscles, thus alleviating pain and increasing transdermal drug delivery. The drugs used often contain alkaloids, which inhibit prostaglandins to reduce inflammation, and flavonoids, which have antioxidant effects. The lipoidal bond formed by taila (oil) in Upanaha aids in drug molecule

Author Name	Case description	Treatment	Conclusion
Pratap Shankar KM et al., [5]	Twenty cases diagnosed with knee ligament injuries ranging from partial to complex ones	Dasamoola Kashaya Dhara, Lepana with Nagaradichoornam, Bandana with Murivenna oil for 7 days Rasnasaptaka kashayaYogaraja Guggulu for 3 months	There was statistically significant relief in KOOS and IKDC scores and improved joint stability
Kapgate HS et al., [6]	A 58-year-old female patient presented with complaints of pain and swelling over left knee, difficulty while walking, and pain on sitting to standing position in the past 2 year.	Sthanika abhyanga with balataila followed by nadisweda with dashamoola Kashaya to the bilateral lower limb, Shashtikashalipindasweda, janubasti with chandanabalalakshadi and murivennataila. Jalukacharana (Alternate Day) and Jatamayadilepa over the left knee. Anuvasana Basti with Madhuyashtyaditaila, Mahasneha and Til taila 40 mL each Niruha Basti with Yashtvyadi Kshir (Kala Basti). Triphala Guggul, Capsule Abha, Panchatiktaghrutguggulu, Panchasakar Churn (3 gm) +Triphala Churn (2 gm), Mahasudarshan Churn (5 gm) +Vayasthapangan Churn (4 gm), Mahasneha (15 mL) + Goghurut (15 mL) for 4 months	Complete relief in knee pain, no radiating pain in the left knee joint.
Sharma M et al., [7]	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 for six months.	Local Snehan (oleation) with murivenna tail, Upnahaswedana, medicated enema, Janubasti with murivennataila, physiotherapy and oral ayurvedic medications for two months.	Patient show significant improvement in assessing parameters like pain, range of motion, and in assessing tests
Present study	The 41-year-old female teacher had been experiencing pain and swelling in her left knee joint and occasional instability when walking for the past 3.9 years. An MRI revealed a Grade III medial meniscus tear three years prior, accompanied by symptoms of swelling, pain, and difficulty walking.	Godhuma Upanaha, Sthanik Parisheka with Ashwagandha Balalakshadi Taila and Murivenna Taila, Janu Basti with Murchita Tila taila and Nirgundi Taila, Erandmoola Niruha Basti, and Anuvasana Basti with Guggulu Tikthaka Ghrita and oral ayurvedic medication for 4 months.	Patient showed marked improvement inparameters like pain, tenderness, range, knee flexion and in assessing tests along with normal MRI of left knee.

[Table/Fig-3]: Previous studies with treatment and conclusion of medial meniscus tear [5-7].

penetration through the skin [8]. Parisheka represents the rhythmic and systematic pouring of medicaments over specific body parts or the entire body surface for a stipulated time. In case of knee ligament injuries, tailadhara (pouring of medicated oils) improves 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 [9]. Janu Basti enhances local circulation and metabolism, facilitating the transfer of medicaments and nutrients to the knee while eliminating vitiated dosha and mala through the skin. Improved blood circulation helps the knee regain normal functional capacity and makes it a useful supportive treatment for damage to the meniscus/ligaments. Basti Karma (enema) is considered the Ardha chikitsa (half the treatment) of all diseases [10]. The process of Basti therapy involves absorption of the drug into the microcirculation of the gut, through the rectal mucosa and hemorrhoidal veins, leading to quicker systemic effects. Basti, especially niruhabasti (decoction enema), is beneficial in controlling Vata disorders. Erandamoola [11] has anti-inflammatory, analgesic, and laxative properties. Ellagic acid, chelubic acid, and corilagin are the main bioactive substances found in triphala that were discovered using LC-MS/MS. These results demonstrate the potential of triphalabioactive, especially chelic and ellagic acids, to efficiently inhibit PL and offer an obesity management approach [12], while asanadi Kashaya exhibits antioxidant, anti-diabetic (especially anti-amylase), and anti-inflammatory properties [13]. The plant Balamoola contains a variety of secondary metabolites, including flavonoids, fatty acids, alkaloids, and phytoecdysteroids, which exhibit a range of pharmacological actions. Scientific research has demonstrated the anti-inflammatory, antispasmodic, hypoglycaemic, hepatoprotective, and analgesic qualities of bala [14]. Guggulu Tiktaka ghrita, with its anti-inflammatory properties, kalpa with a synergistic combination of tiktarasatmakadravyas such as nimba, guduchi, vasa, patol, and kantakari (panchatikata) helps to lessen pain and swelling [15]. Gandha Taila capsules, which are high in nutrients and essential oils, nourish the ligaments and surrounding tissues, promoting their regeneration and repair and help to improve the strength of bones, joints and ligaments. It balances Vata and Pitta [16]. Panchatikta Kashyam mainly pacifies pitta. It also helps in reducing swelling and pain by virtue of its anti-inflammatory property [17]. The relief of pain may be due to the anti-inflammatory, analgesic, and nourishing effect of ingredients of kaishoraguggulu, such as Guggulu (Commiphora wightsii (Arn.) Bhandari), Guduchi [T. cordifolia (Willd.)], Haritaki (T. chebula Retz), Bibhitaka [Terminalia bellerica (Gaertn.) Roxb.], and Amalaki (Embolica officinalis L) [18].

CONCLUSION(S)

The patient experienced significant relief from pain, swelling, and restricted movement after undergoing Ayurveda treatments, including Upanaha Sweda, Janu Parisheka, Janu Basti, and Basti therapy. This case highlights the efficacy of panchakarma therapies and oral medications in the management of Grade III meniscal tears by addressing doshic imbalances, reducing inflammation, and supporting tissue repair, thus providing comprehensive relief and facilitating long-term recovery.

Strength of the study: Allopathic doctors frequently recommend surgery for ligamentous and meniscus tears, but not all patients can afford it, and surgical repair does not always result in a 100% improvement in the patient's signs and symptoms. In this case study, the patient benefited from internal medication and panchakarma treatment, which reduced pain and oedema and enhanced everyday activities with evidence of complete recovery of the meniscal tear in MRI. This could lead to the development of a novel meniscus tear treatment.

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