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AYURVEDIC MANAGEMENT OF ABHIGHATAJA SNAYUGATA VATA – A CASE STUDY

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ABSTRACT

Background*: Knee ligament injuries are among the most frequent musculoskeletal conditions resulting from high-velocity trauma, sports activities, and road-traffic accidents. Damage to structures such as the anterior cruciate ligament (ACL), medial collateral ligament (MCL), and meniscus can severely impair joint stability, mobility, and overall functional capacity. Although surgical reconstruction is a common therapeutic approach, it does not always guarantee complete biomechanical recovery and may be associated with postoperative stiffness, prolonged rehabilitation, and variable success rates. In Ayurveda, such traumatic injuries can be correlated with Abhighātaja Snāyugata Vāta, where Abhighata leads to vitiation of Vāta and Rakta affecting Snāyu, Sandhi, and Asthi, producing pain, swelling, stiffness, and restricted movement.*

Case History: *A 48-year-old male presented with pain, swelling, restricted movements of the right knee, and difficulty in walking for 5 months following a road-traffic accident. MRI revealed a partial tear of the ACL, PCL sprain, grade-3 medial meniscal tear, bone marrow edema, superficial MCL injury, and joint effusion. Treatment included Sthānika Taila Dhāra with Pinda Taila, Kṣīrabala Taila, Māṣha Taila, and Daśhaṅga Kumāri Upanāha for 7 days in 3 sittings, along with internal medications.*

Results: *The patient showed significant pain relief, restored mobility, improved gait, and negative stability tests, with VAS reducing from 6 to 0.*

Conclusion: *Ayurvedic Bahirparimarjana therapies combined with internal medication effectively managed a complex knee ligament and meniscal injury without surgical intervention. This case demonstrates the potential of Ayurveda as a safe, cost-effective, and non-invasive approach for treating ligament injuries and improving quality of life.*

KEYWORDS: *ACL injury, Snāyugata Vāta, Meniscal tear, Sthānika Taila Dhāra, Daśhāṅga Kumāri Upanāha, Abhighāta*

INTRODUCTION

Knee joint is one of the complex synovial joints of the body[1], enabling weight-bearing, locomotion, and coordinated functional movements, stabilized by a coordinated framework of ligaments, tendons, menisci, and surrounding musculature. Among these structures, the anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), medial collateral ligament (MCL), and menisci contribute significantly to joint stability. Due to increasing incidences of road-traffic accidents, sports injuries, and sudden rotational forces, ligament and meniscal injuries of the knee have become increasingly common. These injuries lead to pain, swelling, restricted movement, instability, and difficulty in performing routine activities, often affecting an individual's productivity and quality of life.

Conventional management often includes analgesics, physiotherapy, bracing, or surgical reconstruction. However, surgical procedures may involve high cost, postoperative stiffness, prolonged rehabilitation, and variable outcomes, leading many patients to seek conservative, non-invasive alternatives.

In Ayurveda, such ligament injuries can be correlated with Abhighātaja Snāyugata Vāta wherein abhighāta,[2] (trauma) results in vitiation of Vāta and Rakta localised in Snayu.

Snāyu [3] is described as a supportive fibrous tissue responsible for binding Māṃsa and Asthi, maintaining joint stability and alignment. When affected by vitiated Vāta— Laxana's such as Shūla, Shotha, Stabdhata, Kampa[4], and limited mobility manifest, closely resembling modern presentations of ACL, PCL, MCL, and meniscal injuries. Classical texts further explain that aggravated Vāta residing in Rikta Srotas produces symptoms like pain, stiffness, and functional impairment, making Snāyu injuries more challenging to treat than muscular or bony injuries.

For Snāyugata Vāta, Acharyas advocate treatment modalities such as Snehana, Swedana, Upanāha, Bandhana, and Mardana[5]. These therapies aim to pacify Vāta, and Rakta reduce inflammation, improve circulation, and strengthen peri-articular structures. When administered appropriately, they assist in relieving pain, restoring mobility, and improving joint stability without the need for surgical intervention.

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The present case report highlights the successful Ayurvedic management of a complex knee injury involving ACL sprain, PCL sprain, medial meniscal tear, and MCL injury. Through targeted Bahirparimarjana therapies and internal medications, significant improvement was observed in pain, swelling, range of motion, and functional mobility, demonstrating the potential of Ayurveda as a safe, effective, and conservative treatment approach for knee ligament injuries.

MATERIALS AND METHODS

Chief Complaints

- Pain and swelling in right knee since 5 months
- Restricted knee movements since 5 months
- Difficulty in walking and bending the knee joint.

History of Present Complaints

A 48-year-old male, was apparently healthy until five months ago when he met with a road traffic accident and fell from his bike onto his outstretched knees. He was conscious at the time of the incident, with no history of vomiting or external bleeding, though he experienced mild giddiness.

Following the fall, the patient developed pain, swelling, and restricted movements in his right knee. There was no external wound or bleeding from the affected area. The pain aggravated on sitting, walking, climbing stairs, and when the leg left hanging from the chair. The pain relieved in the supine position and with rest.

Due to the severity of pain and inability to walk, patient consulted nearby hospital there he was prescribed analgesics along with a knee brace. The patient was also advised to perform exercises of knee elevation up to 15 degrees.

Despite following the prescribed management, he experienced no significant relief and gradually developed stiffness of the right knee, with an inability to bend it. He also started experiencing shock-like sensations around the joint and felt difficulty in performing daily activities

Subsequently, an MRI of the right knee was advised, based on which surgical intervention was recommended. However, the patient refused surgery and opted for Ayurvedic management for better conservative care.

Examination

General examination:
Built: Medium
Weight:74kg
Height:167cm
BP:128/80 mmhg
Respiratory Rate:16cpm
No History of HTN/ DM /Asthma

Systemic Examination:
Central Nervous System: Conscious and Oriented.
Cardiovascular System: S1 & S2 heard, No added sounds.
Respiratory system: Normal Vescicular Breathing.

Knee Joint Examination

Inspection	
Gait	Limping Gait
Swelling	Present
Redness	Present
Scars/lessions/varicosities	Absent
Wound /contusion	Absent
Muscle wasting	Absent
Genu Varus	Absent
Genu Vulgus	Absent

Palpation	
Warmth	Present
Tenderness	Tenderness at lateral and medial joint line (Grade- 2)
Crepitus	Present (Grade – 2)
Bakers Cyst	Absent

Special Tests	
Patellar tap test	Negative
Posterior Drawer Test	Positive
Mc Murray Test	Positive
Appley's Compression test	Positive
Anterior Drawer Test	Positive
Latchman's Test	Positive

Treatment Adopted

Procedure	Dravya	Avadhi	Duration
Sthanika Taila Dhara	Pinda Taila[6] (2litre) Ksheerabala taila[7] (1litre) Masha Taila[8](1litre)	7 days (12/08/25)-18/08/25	20 Minutes
Dashanga kumari upanaha	Dashanga Lepa Churna[9] (30 grams) Kumari Swarasa (20 ml) Chincha Patra[10] Swarasa (20 ml) Egg white (2 eggs)	7 days (06-11-25-12/11/25)	Advised to keep for 12 hours

Taila Dhara: Sthanika Taila Dhara from thigh till of Right knee joint was done with Pinda Taila, Ksheerabala Taila, and Masha Taila followed by Mridhu Abhynga was done for 20 minutes for 7 days.

Dashanga Kumari Upanaha

Dashanga Lepa churna along with Chincha Patra Swarasa, Kumari Swarasa and egg white is mixed properly, the mixture is warmed in a hot water bath indirectly applied gently all over right knee joint then Bandhana is done with kora cloth

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Internal Medication	Dose	Gunakrma
Eranda Taila	2ml with hot water at night	Ushna, vatakahoahara,shophahara
Amrutadi Guggulu	2-2-2 (after food)	Kaphavattahara,Shophagna
Lakshadi Guggulu	1-0-1 (after food)	Tridoshahara, Asthidhatu Vardhana and Sandhanakarana
Triphala Guggulu	2-2-2 (after food)	Ushna, Ruksha, kapha vatahara, shophahara
Ashwagandha Churna	1tsf -0-0 with milk in the morning after food	Ushna Veerya, Vata shamana

Observation And Results

Observation made before, during and after the intervention are summarised in the following tables.

	Before treatment	**After first sitting (**7 days - 12/08/25-18/08/25)	**After second sitting** 7 days (06-11-25-12/11/25)
Pain	Vas -6	Vas – 4	Vas- 0
Tenderness	Grade 2 (wincing of face on pressure, At lateral and Medial Joint line)	Grade1(mild tenderness)	Grade0 (no tenderness
Swelling	Moderate (at supra patellar compartment)	Mild swelling	No swelling
Warmth	Grade 1(slight warmth)	Grade 0(No warmth)	Grade0 (no warmth)
Crepitus	Grade 2(coarse crepitus)	Grade 1(fine crepitus)	Grade 1(fine crepitus
Range of Movements			
Flexion	Painful & Restricted - limited to 30^0	Flexion Possible up to 90^0, with slight pain	Complete Flexion Possible, Pain Absent
Extension	Painful & Restricted-limited to 10^0	Extension Possible up to 4^o, Pain Absent	Complete extension Possible, Pain Absent
Internal Rotation And External Rotation	Possible with pain	Possible with slight pain	Possible without pain
Difficulty in Walking	Pain on standing and walking less distance (up to 300 meter)	Able to Stand wihout pain and can walk short distance distance (up to 400-500 meters)	Stands wihout pain and can walk long distance (up to 1-2 kilometers)
Special Tests			
Anterior Drawer Test	Positive	Negative	Negative
Posterior Drawer Test	Positive	Negative	Negative
Latchman's test	Positive	Negative	Negative
McMurray Test	Positive	Negative	Negative
Apley's Compression Test	Positive	Positive	Negative

INVESTIGATIONS: MRI OF RIGHT KNEE JOINT

Impression (before Treatment)

Partial tear of the anterior cruciate ligament with non-visualization of posterolateral bundle.

PCL sprain with mild buckling and PDFS hyperintensity at tibial attachment.

Complex high-grade (grade 3) tear of the posterior horn and body of the medial meniscus.

Bone marrow edema involving lateral femoral condyle, lateral and intercondylar natch of tibia, likely representing marrow contusion in view of trauma.

Tiny chip fracture along posterior cortex of medial tibial plateau with significant surrounding marrow edema.

Quadriceps tendinosis at the superior pole of the patella.

Significant joint effusion in patellofemoral and suprapatellar compartments with associated soft tissue edema.

Grade 1 injury of the superficial fibers of the MCL.

After Treatment

ACL upper third Mild tear.

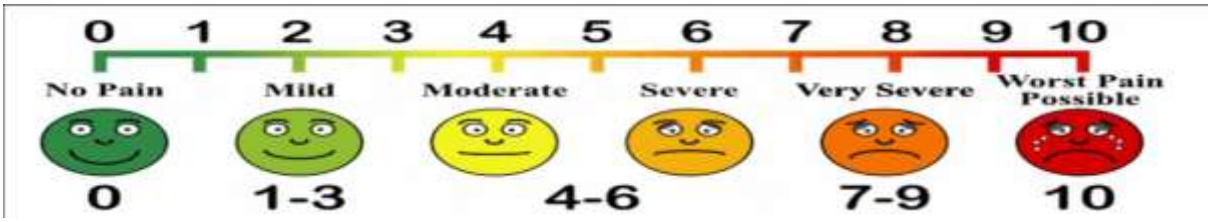
➤ Grade II complex tear in the posterior horn of medial meniscus.

➤ Mild Subchondral Marrow edema / contusion.

➤ Mild Knee joint effusion

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VISUAL ANALOGUE SCALE







DISCUSSION

Abhighātaja Snāyugata Vāta is a condition in which Abhighāta (sudden trauma) leads to the vitiation of Vāta and Rakta predominantly affecting the Snāyu, Sandhi, Asthi and Kandara around the Janusandhi. The impact of injury initiates Vāta + Raktādi Doṣa prakopa, resulting in Rasa–Raktādi Dhātu Duṣṭi, impairs the normal nourishment of the joint, producing Śhula, Sthambha , Śhotha , and Vedanāyukta Prasāra–Akuñchana (painful movements) which further disturbs the structural and functional integrity of the joint.

These pathological events closely resemble the clinical scenario of ligament and meniscal injuries, such as ACL, MCL and meniscal tears, where pain, swelling, instability, and restricted movement manifest immediately or progressively after trauma.

Acharya Sushruta advised use of Snehana, Upnaha, Bandhana, and Agnikarma. Here, Sthanika Tailadhara and Upnaha are selected due to the severity of Sankocha and Shoola in the Snayu. Sthanika Tailadhara, through Swedana, reduces Stabhadta and Vedana, provides Pitta Shamana, and improves Rakta Sanchara helping to reduce shotha. Upanaha acts as both vatahara and shothahara

Sthanika Tailadhara from Thigh to Right Knee joint.

Acharya Sushruta explains out of four Tiryaka Dhamani, each divides gradually hundred and thousand times thus become innumerable. These cover the body like network and their opening attached Romakupa. Through them only veeryas of Abhynaga, Pariseka, Avagaha ,Alepa enter into the body after undergoing Paka with Brajaka Pitta in twak[11].

Sushruta stated the properties of this procedure under the heading of Seka as, Shramagna (relieves fatigue), Anilahrit (pacifies Vata) Bhagna Sandhi Prasadaka (stabilizes the dislocated joints) and Rujapaha (relieves pain arised out of injury, burn etc).

Taila dhara serves as a lipoidal medium for the penetration of drug molecules by exerting an immediate anti-inflammatory effect through diffusion. Possibly some therapeutic components are released and absorbed through subcutaneous capillaries into systemic circulation acting upon the deeper tissues and expecting to reconstruct the damaged structures. Meniscus regeneration is an unsolved clinical challenge, despite this, the treatment protocol interpretation can be helpful in the proper and long-lasting functioning of these fibro-cartilaginous structures, preventing further damage.

The application of heat in different forms of Swedana promotes local circulation and metabolic activities and also opens the pores of the skin to permit transfer of medicaments and nutrients towards to needed sites and elimination of vitiated Doshas and Malas through skin.

Thus tailadhara serves as vatanubandhi pittasyaupakrama as it mainly helps to reduce Shula, Daha, Shotha and Sthmbha. In this present case Pinda Taila, Mahamsha Taila and ksheerabala taila were selected.

Pinda Taila

Reference	A.H. Vatarakta chikitsa,sahasrayoga
Veerya	Sheeta
Gunakarma	Pittavatahara,Rujapaha,Dahahara

Phytoconstituents and action

Manjistha(Rubia Cardifolia)	**Purpurine, Antraqwinones, saponins phenolic compounds**- anti inflammatory, detoxification of blood, analgescis, improves microcirculation,wound healing.
Sariva(Hemidesmus indicus)	**Ethanolic extract** – nociceptive reduce both neurological and inflammatory pain. **F stiterol** – Analgescis, anti inflammatory
Madhuchistha(Bee wax)	**Phenolic acids,terpenes, flavonoids** -anti microbial and anti-inflammatory wound healing properties.

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It is Rujāpaha Pittavatahara, Dahaharam its key ingredients—Mañjiṣṭhā (Rubia cordifolia) and Sārivā (Hemidesmus indicus)—possess Pitta-Shāmana, Rakta-Prasādana, and Śhothahara properties. These actions help regulate inflammatory changes occurring after ligament or meniscal trauma.

Modern studies also support this action. Research on the topical form of Pinda Taila demonstrates significant anti-inflammatory activity, comparable to standard diclofenac gel. This validates its ability to reduce inflammatory edema and pain after soft-tissue injuries.

The pharmacological actions of Pinda Taila—anti-inflammatory, analgesic, healing, and antimicrobial—directly address the pathophysiology of snayugata vata.

Ksheerabala Taila

Reference	Astanga Hridaya Vatarakta chikitsa
Veerya	Sheeta veerya
Gunakarma	Vatapittashamna, gurusnighda guna

Phytoconstituents and action

Bala (Sida Cardifolia)	**Hypaphorin –** anti inflammatory **Betaine –** protects tissue under stress and injury.

Khseerabala taila is vatapittashamana, Dhatunamaprabala – gives strength to muscles due to balya and brihamana properties. Prevents wear and tear of nervous and muscular tissues.

Mahamasha Taila

Reference	**Bhaisajya ratnavali**
Veerya	Ushna Brahmana Taila
Guna	Vatashamana,Balya Brahmana,Guru Snigdha guna

Phytoconstituents and action

Dashamoola	**Tannins,terpenoids,alkaloids-** analegics,effctiive in controlling edema

Mahamasha tail has key ingredients like Masha, Dashamoola, Ksheera, Ajamamsa

Its Guru, Ushna, Snigdha Guna does vata shamana and Shoolahara with its Ushna Veerya reduces stifness present in knee joint and aids in improving range of movements, with its guru Brihmana action imparts strength to muscles and ligaments of the knee joint.

Dashanga kumari upanaha

Mode of action of Dashanga Lepa Churna

The Dhatushoshaka property of Kashaya and the Tikta Rasa of most of the drugs in Dashanga Lepa act as Kapha Shotahara and Shoolahara, as many of the drugs possess Vedhanasthapaka properties and have Sheeta Virya. These properties act on the Raktavaha Srotas, reducing Shoola. The Kashaya, Tikta Rasa, and Sheeta Virya of most of the drugs also serve as Pitta Shamaka due to their Vrana Ropana properties.[12]

A study conducted using Thin Layer Chromatography of the methanolic extract of Dashanga Lepa on silica gel shows that Dashanga Lepa consists of numerous phytochemicals, including **flavonoids, tannins, phenolic compounds, alkaloids, and glycosides**. Flavonoids act as potent anti-inflammatory, antioxidant, and antimicrobial agents. **Terpenoid**s present in Dashanga Lepa inhibit diabetic signalling via the necrosis factor (NF-kB) system, thereby possessing beneficial therapeutic effects against inflammatory diseases.

Anti-inflammatory action might be due to inhibition of prostaglandins or due to reduction in nitric oxide production. This decreases endotoxins level in blood and reduce tissue/cellular response of mast cells and other substances which decrease synthesis of prostaglandins, histamine and other mediators.

Tannins, when used topically, exhibit analgesic properties by decreasing the synthesis of prostagladine.

Pharmacological Activity Kumari Swarsa

Kumari	Rasapanchaka
Rasa	Tikta,Madhura
Guna	Guru,Snigdha,Picchila
Veerya	Sheeta
Vipaka	Katu
Doshakarma	Tridoshagna

- It is tridhoshahara and functions as a potent Granthivibhedana, Raktapitta-shamana, Vishaghna, Twak-Roga-Prashamana, Krimighna, and Vranaropaka dravya. It contains a rich profile of bioactive phytochemicals that contribute to these therapeutic actions. One of its notable enzymes, Bradykinase, plays a significant role in alleviating excessive local inflammation when applied externally. Additionally, constituents such as salicylic acid, linolenic acid, and gibberellins demonstrate proven anti-inflammatory and tissue-soothing effects. The presence of lignin, though pharmacologically inert, enhances the transdermal absorption of active compounds by facilitating deeper penetration into underlying tissues.
- These properties make it supportive in the management of a ligament tear in the knee joint, where controlling inflammation, promoting circulation, and enhancing tissue regeneration are critical. Its Shothahara (anti-swelling) and Vranaropaka (wound-healing) actions may aid in reducing edema around the injured ligaments, while its Granthihara effect assists in preventing fibrotic adhesions during the healing process. Through its bioactive compounds, which modulate local inflammatory mediators and improve microcirculation, it may help create a favourable environment for collagen remodelling and ligament repair.

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Pharmacological Activity of Chincha Patra (Tamrindus indica)

Kumari	Rasapanchaka
Rasa	Amla
Guna	Ruksha
Veerya	Ushna veerya
Vipaka	Amla
Doshakarma	Vatakaphahara

Chincha patra is **Śhophaghna**—effective in reducing swelling, pain, and inflammatory responses—which directly supports the management of trauma-induced edema around injured ligaments.

Its **Raktadoṣahara** property assists in clearing local inflammatory metabolites, thereby improving circulation and facilitating tissue repair.
Phytochemical studies have revealed that chincha patra contain sterols and triterpenes, compounds well-recognized for their analgesic and anti-inflammatory properties.

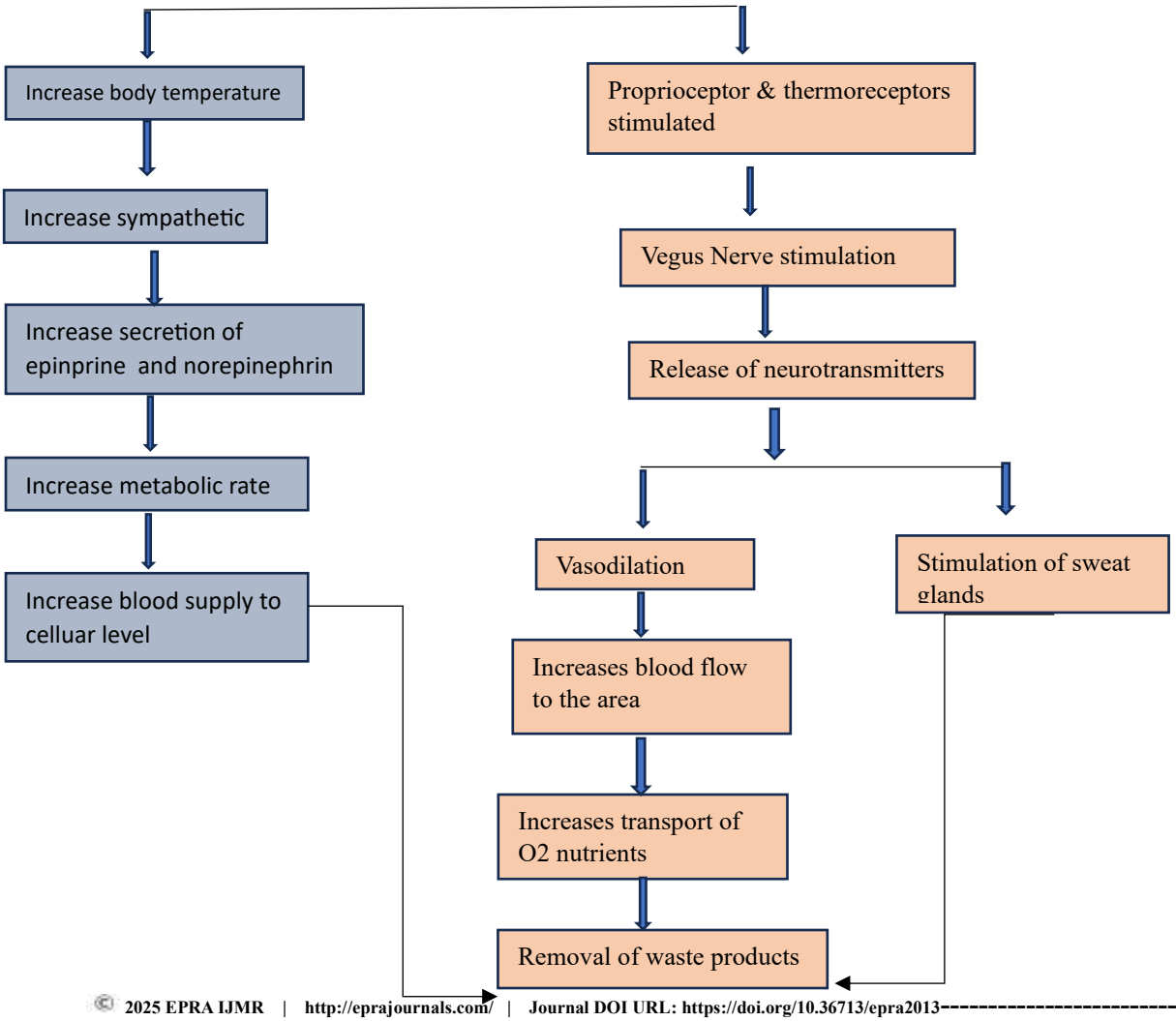
These bioactives help modulate inflammatory mediators released after ligament injury, thereby reducing pain intensity and local tenderness. Chincha patra also displays broad-spectrum antimicrobial activity[13], which is advantageous in preventing secondary infection in cases of open injury or associated soft-tissue compromise.

Overall, the combined actions—Vāta-Kaphahara, Shophaghna, Vedanāsthāpana (analgesic), Raktadoṣahara, and antimicrobial effects—make Chincha patra supportive in managing Snayugata Vata. It aids in relieving pain, reducing swelling, improving circulation, and creating a conducive environment for ligament healing and joint recovery.

Egg white
Egg whites provide easily absorbable, high-grade proteins containing essential amino acids that support new protein formation and help preserve muscle tissue. In addition, the lysozyme present in egg white offers natural antimicrobial effects, while inherent emulsifying properties of albumin contribute to improved stability and consistency of formulation[14].

Procedure Effect
The therapeutic efficacy of Sthānika Taila Dhāra is mediated through a combination of thermal effects, transdermal penetration, neurophysiological modulation, circulatory enhancement, and cellular biochemical responses occurring sequentially from the skin surface to deeper musculoskeletal tissues.

Sthanika Taila Dhara



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Drug Effect

The drugs present in —Pinda Taila, Kṣīrabala Taila, and Mahāmāṣa Taila—exert a combined Vāta-Shamana, Śhothahara, and Rujāpaha effect, which directly addresses the core pathology of Abhighātaja Snāyugata Vāta. Their Snigdha, Guru, and Bṛiṃhaṇa Guṇas aids in reducing stiffness, and restore lubrication within the Sandhi. Ingredients such as Mañjiṣṭhā, Sārivā, and Daśhamūla purify Rakta, improve microcirculation, and relieve traumatic swelling. Kṣīrabala and Mahāmāṣa Taila strengthen Snāyu, Māṃsa, and Asthi due to their Balya and Bṛiṃhaṇa actions, supporting ligament healing and joint stability. Dashanga Kumāri Upanāha further contributes Vāta-Kapha hara, Śhothahara, and Vranaropaṇa actions, reducing pain, inflammation, and promoting tissue regeneration. Together, these formulations pacify aggravated Vāta & restore normal movement, and facilitate repair of ligamentous structures affected by injury.

CONCLUSION

This case demonstrates that Ayurvedic management using Sthānika Taila Dhāra, Daśānga Kumāri Upanāha, and internal medicines effectively reduced pain, swelling, and stiffness, with complete restoration of knee function in complex ligament and meniscal injury. The Vāta-kapha-śāmaka, śothahara, rūjāpaha, bṛhmaṇa, and vranaropaṇa actions of the therapies helped in healing snāyu, sandhi, and asthi. The outcome highlights Bahirparimarjana Chikitsa as a safe, non-invasive, and cost-effective alternative for selected ligament injuries

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