


SMBT | AYURVED COLLEGE
& HOSPITAL



A National Seminar on,
**Asthi - Sandhi
Chikitsā Vijñānīyaṃ**
Healing with Ancient Therapy and Marma Chikitsa
Organised by **Shalyatantra Department**
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1- EFFECT OF AGNIKARMA IN THE MANAGEMENT OF KATIGRAHA – A CASE STUDY

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ABSTRACT

Katigraha is a condition in which Vata, either alone or associated with Ama, gets localized in the Kati pradeśa, producing pain, stiffness, and restricted range of movements. In clinical practice, low back pain has become a major health concern and is experienced by most individuals at least once in their lifetime. The prevalence of low back pain in India is nearly 60% of the general population, and its incidence is increasing at an alarming rate. In the present era, various medical and surgical interventions such as NSAIDs, steroids, muscle relaxants, glucocorticoids, analgesics, discectomy, and lumbar laminectomy are available for the management of low back pain. However, these modalities are often expensive, time-consuming, and associated with adverse effects, and they do not always provide a permanent cure. Agnikarma is an Anuśastrakarma described by Suśruta for the management of various clinical conditions. One of its prime indications is *Atyugra ruja* caused by Vata. Due to its *Tikṣṇa* and *Uṣṇa guṇa*, Agnikarma pacifies Vata, relieves pain, provides quick results, and is a cost-effective treatment modality widely recommended in musculoskeletal disorders. Classical texts mention that diseases treated with Agnikarma have minimal chances of recurrence. In this case study, a 41-year-old male patient reported to the OPD on 25/11/2025 with complaints of severe pain, stiffness in the low back region, and restricted movements for the past four months, with no associated co-morbidities. Agnikarma was performed using a Panchaloha śalākā at the most tender points in the lumbar region. The patient showed marked improvement in pain and stiffness within a couple of hours and moderate improvement in lumbar spine mobility.

KEYWORDS

Katigraha, Agnikarma, Panchaloha śalākā, Low back pain, Lumbar spine mobility

INTRODUCTION

Changes in human lifestyle have created several disharmonies in the biological system. The advancement of professional and social commitments has led to a predominantly sedentary lifestyle, improper sitting postures, continuous or excessive physical exertion, and jerky movements during travel and sports activities. These factors exert excessive stress on the spinal structures and play a significant role in the development of low back pain. In addition, progressive disorders involving the pelvis and adjacent structures further contribute to this condition. Consequently, low back pain has emerged as a significant threat to the working population.

Low back pain is characterized by dull or sharp pain in the lumbar region, often associated with stiffness. This pain restricts movement, reduces work capacity, diminishes the quality of daily life, and transforms routine activities into a source of distress. The prevalence of low back pain in India is estimated to be nearly 60% of the general population, with a steadily increasing incidence. It affects both males and females equally and is commonly observed in individuals between 25 and 60 years of age.

The term *Katigraha* is derived from two words—*Kati* and *Graha*. *Kati* originates from the root “katīn,” meaning a specific part of the body (*śarīra avayava viśeṣa*). According to *Amarakośa*, *Kati* refers to the region of the body covered by garments (*katau vastravarāṇau*). *Graha* is derived from the root “graha upādāne,” meaning holding or grasping, which implies stiffness or restriction. Thus, *Katigraha* denotes a pathological condition of the lower back characterized by pain, stiffness, and restricted movements.

In Ayurvedic classics, *Katigraha* is described as both an *Anubandha* and *Anubandhya vyādhi*. Its etiopathogenesis suggests a predominance of Vata doṣa. When *Śuddha* or *Sāma Vata* localizes in the *Kati pradeśa*, it produces symptoms such as *rujā* (pain) and *stabdhata* (stiffness), leading to the manifestation of *Katigraha*.

In contemporary medical practice, several pharmacological and surgical interventions—including NSAIDs, steroids, muscle relaxants, glucocorticoids, analgesics, discectomy, and lumbar laminectomy—are employed for the management of low back pain. Despite their availability, these treatments often fail to provide lasting relief and are associated with significant side effects and economic burden.

Agnikarma is an Anuśastrakarma elaborately described by Suśruta for various painful conditions, particularly those caused by Vata. The *Tikṣṇa* and *Uṣṇa* properties of Agnikarma help in pacifying Vata, alleviating pain, and producing rapid therapeutic effects. It is considered a cost-effective and efficient treatment modality for musculoskeletal disorders. Classical references state that diseases treated by Agnikarma rarely recur.

In the present study, an innovated Agnikarma probe made of Panchaloha—Copper (40%), Iron (30%), Zinc (10%), Silver (10%), and Tin (10%)—was utilized. This probe is capable of producing both superficial and deep therapeutic burns and retains heat for a longer duration, making the procedure easier to perform within a shorter time frame.

MATERIALS AND METHODS :

A 41-year-old male patient with an average build presented to the OPD of the Department of Shalya Tantra, AAMCH Palakkad, on 25/11/2025 with chief complaints of severe low back pain, stiffness, and restricted movements for the past four months. There was no history of associated co-morbidities.

On clinical examination, the patient exhibited an antalgic gait. He was unable to stand, sit, or maintain the same posture for more than 10 minutes due to severe low back pain. Straight Leg Raising (SLR) test was positive at 40 degrees for both lower limbs, while Lasegue's sign was negative. His vital parameters were within normal limits, with a blood pressure of 130/80 mmHg, pulse rate of 78/min, body weight of 70 kg, and height of 5.9 feet.

Routine hematological and urine investigations were within normal limits. Serological tests for HIV, HBsAg, and VDRL were negative. Plain X-ray of the lumbosacral spine revealed mild reduction of intervertebral disc space between the L4 and L5 vertebral bodies.

Clinical Examination :

	Right	Left
SLR	40°	40°
Braggard's test	-ve	-ve
Coin pick test	- positive	
Doorbell sign	- positive at L4 , L5 , S1 level	
Lumbar spine mobility test :		
Flexion	- 40°	
Extension	- 10°	
Lateral flexion	- 15°	
Rotation	- 20°	

Method of Agnikarma

After proper counseling, written informed consent was obtained from the patient. The most tender points in and around the L4, L5, and S1 vertebral regions were identified and marked using a skin marker. The area was aseptically cleaned with spirit. The Agnikarma probe was heated until red hot using an LPG gas burner.

Agnikarma was performed in a *Bindu* pattern, with eight therapeutic points applied over the marked area, maintaining a distance of approximately 0.5 cm between each point. The red-hot probe was applied at the marked sites until *Samyak Twak Dagdha* was achieved.

Immediately after completion of the procedure, *Kumari Swarasa* (Aloe vera pulp) was applied over the burnt areas to soothe the tissue. After one minute, the area was gently cleaned, and *Shatadhauta Ghrita* was applied locally.

METHOD OF GRADING

1. Pain – VAS score



2. Stiffness

- Grade 0 – No stiffness
- Grade 1 – Mild stiffness
- Grade 2 - Moderate stiffness
- Grade 3 – Severe stiffness

3. Tenderness

- Grade 0 – No tenderness
- Grade 1 – Patient says it is paining
- Grade 2 - Patient winces
- Grade 3 – Patient winces and withdraws the part

Grade 4 – Patient does not allow touching the part

4.SLR

Grade 0 – 70° - 90°

Grade 1 – 50° - 69°

Grade 2 - 49° - 30°

Grade 3 - $\leq 29^\circ$

5.Lumbar spine mobility using Goniometer

a)Flexion

Grade 0 – 80° or above

Grade 1 – 79° - 60°

Grade 2 - 59° - 40°

Grade 3 - $\leq 39^\circ$

b)Extension

Grade 0 – 30° or above

Grade 1 – 29° - 20°

Grade 2 - 19° - 10°

Grade 3 - $\leq 9^\circ$

c)Lateral Flexion

Grade 0 – 35° or above

Grade 1 – 34° - 25°

Grade 2 - 24° - 15°

Grade 3 - $\leq 14^\circ$

d)Rotation

Grade 0 – 45° or above

Grade 1 – 44° - 35°

Grade 2 - 34° - 25°

Grade 3 - $\leq 24^\circ$

RESULTS :

Clinical findings on Day 1 (AT):

	Right	Left
SLR	60 °	60 °
Braggard's test	-ve	-ve
Doorbell sign	- slight tenderness at L4 , L5 , S1 level	

Lumbar spine mobility test :

- Flexion - 70°
- Extension - 25°
- Lateral flexion - 25°
- Rotation - 35°

ASSESSMENT AND FOLLOW UP

GRADING						
CRITERIA	DAY 1 (BT)	DAY 1 (AT)	DAY 3	DAY 5	DAY 7	DAY 21
STIFFNESS	2	1	1	1	0	0
PAIN	3	2	2	2	1	1
TENDERNESS	3	3	2	2	2	1
SLR	2	1	1	1	1	0
FLEXION	2	1	1	1	0	1
EXTENSION	2	1	2	1	1	1
LEFT LATERAL FLEXION	2	1	2	2	1	1
RIGHT LATERAL FLEXION	2	1	2	2	1	1
LEFT SPINAL ROTATION	3	1	2	1	0	0
RIGHT SPINAL ROTATION	3	1	2	1	0	0

On the same day following Agnikarma, the patient showed marked improvement in symptoms such as pain and stiffness, along with noticeable improvement in the range of lumbar movements. After one week of treatment, stiffness had almost completely subsided, and the intensity of pain was significantly reduced.

DISCUSSION

Probable Mode of Action of Agnikarma

Agnikarma is described in Ayurveda as an effective therapeutic modality for *Vātaja* and *Kaphaja vyādhi*, as its *Uṣṇa guṇa* acts antagonistically to the cold and heavy qualities of Vata and Kapha doṣa. According to Ayurvedic principles, each *Dhātu* possesses its own *Dhātvagni*, and impairment of this metabolic fire leads to the manifestation of disease. In Katigraha, Agnikarma provides controlled external heat, thereby enhancing *Dhātvagni*, facilitating digestion of aggravated Doṣas, and restoring normal physiological balance.

From a contemporary scientific perspective, local thermotherapy is known to increase tissue metabolism, which may aid in the elimination of accumulated metabolic waste products and toxins. The application of heat may stimulate the lateral spinothalamic tract, leading to activation of descending pain inhibitory pathways and the release of endogenous opioid peptides. These peptides bind to opioid receptors at the substantia gelatinosa of the spinal cord, resulting in presynaptic inhibition of substance P release and subsequent blockade of pain transmission. This mechanism explains the immediate and sustained analgesic effect observed following Agnikarma.

CONCLUSION

This case report demonstrates that Agnikarma is a potent, safe, and effective therapeutic modality in the management of Katigraha. The procedure resulted in significant relief from pain and stiffness, along with improvement in lumbar mobility. No adverse effects were observed during or after the treatment, indicating that Agnikarma is a well-tolerated and reliable intervention for this condition.

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2- AYURVEDIC AGNIKARMA (PARA-SURGICAL TREATMENT) MODALITIES FOR MUSCULOSKELETAL DISORDERS

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ABSTRACT-

In Ayurveda, the term “pain” is associated with Ruja, arising from the imbalance of Vata. Heat therapy for different ailments is documented in Ancient Ayurveda texts. Ayurveda encompasses various treatment methods as outlined by Acharyas, with Agnikarma (heat therapy) being one of them. Acharya Sushruta has detailed the application of Agnikarma in multiple conditions including Granthi (tumor), Arsha (hemorrhoids), Bhagandar (fistula), Arbuda (tumor), Shlipad (filariasis), Antra Vrana (internal injury), and Nadi Vrana (sinuses). Various materials utilized include Pippali (Piper longum), Aja Shakrut (goat excreta), Godanta (gypsum), Shara (arrow), Shalakra (metal rod), Kshaudra (honey), Guda (jaggery), and Sneha (oil/fat) for delivering Agnikarma to different body regions like skin, muscles, blood vessels, and ligaments. Since Agnikarma is a parasurgical technique, Acharya Charak did not include it in a distinct chapter, but rather mentioned it as a treatment option within various Vatavyadhis (neuro-musculoskeletal disorders) like Gridhrasi (sciatica). If drugs like non-steroidal anti-inflammatory medications, typically utilized for alleviating pain in musculoskeletal conditions, are taken for extended periods, they may lead to possible side effects on the body; therefore, there is a growing necessity to seek a safer alternative for this purpose. This article seeks to explore the studies on Agnikarma associated with musculoskeletal disorders to determine its impact on musculoskeletal pain

KEYWORDS: Agnikarma, pain, par surgical, Ruja.

INTRODUCTION

Pain is the fundamental feature of most of the musculoskeletal disorders. Pain is the factor for which patient generally methods a doctor. Pain is defined as “an unpleasant sensory and emotional involvement, which is generally associated with actual or potential tissue damage.”[1] It can affect the quality of life; hence, its preventive measure is of prime importance in health care. In Sushrut Samhita, the word pain is mentioned as Ruja.[2] There are different treatment modalities in Ayurveda, which are described by Acharyas, Agnikarma is one among them. As it is a par surgical procedure, Acharya Charak has not described Agnikarma in separate chapter but has described it as one of the treatment measures in different Vatavyadh is suchasGridhrasi.[3]

Agnikarma is the application of heat directly or indirectly to the affected part by using different materials. According to Sushruta, if Agnikarma is used in such diseases, there will be less chances of their recurrence and it will be successful in curing the diseases, which are incurable by drugs and surgery.[4] The present

review is aimed at analyzing the role of Agnikarma in pain of various musculoskeletal disorders.

THE AYURVEDIC BASIS OF AGNIKARMA

1. Philosophical and Dosha Basis

According to Ayurveda, the human body is governed by three doshas: Vata, Pitta, and Kapha. Pain (known as Shoola) is primarily caused by the aggravation or imbalance of Vata dosha, which governs movement, nerve impulses, and sensory function. Secondary involvement of Kapha (causing stiffness or heaviness) and Ama (toxins or undigested metabolic waste) often contributes to chronicity and inflammation. Agnikarma acts through the following Ayurvedic mechanisms.

- Vata Shamana (Pacification of Vata): The penetrating and heat-producing nature (Teekshna and Ushna guna) of Agnikarma helps calm aggravated Vata.
- Srotoshodhana (Channel Cleansing): Heat clears blockages in the srotas (microchannels) that carry nutrients and nerve impulses.
- Ama Pachana (Detoxification): It helps digest local toxins (Ama) that accumulate in joints and muscles.
- Swedana Karma (Sudation Effect): The localized heat promotes sweating, which relieves stiffness and heaviness caused by Kapha.
- Rakta Stambhana (Hemostasis): In surgical settings, Agnikarma is also used for cauterization and controlling bleeding.

Classification of Agnikarma According to dravya used

- 1) Snigda Agnikarma: performed by madhu, gritha and taila. It is used in treatment of diseases situated in sira, snayu, sandhi and asthi.
- 2) Ruksha Agnikarma: performed by Pipali, kshara, shalaka and godanta. It is used in treatment of diseases situated in twaka and mansa dhatu.

- According to the site
 - 1) Local: It is used in kadamu and Arsha
 - 2) Systemic: It is used in Visuchika and Gridhrasi.
- According to Akrti
 - 1) Valay: Circular shape
 - 2) Bindu: Dot like shape
 - 3) Vilekha: Different shapes according to direction of lines
 - 4) Pratisaran: No specific shape
 - 5) Ardhachandra: Crescent shape
 - 6) Swastika: shape of swastika yantra
 - 7) Ashtapada: specific shape containing eight limbs in different directions.[5]

Materials used for Agnikarma

- Metallic and other materials: Panchadhatu shalaka made of Tamra, loha, Yasada, Rajata and

Vanga.

- Plant origin: Pipali, Yashtimadhu, Haridra, Sneha and Taila
- Animal origin: Ajasakrit, Godanta.[7]

Indications

- Agnikarma is indicated in vata and kapha related diseases.
- It is used in treatment of diseases like arsha, bhagandar, arbuda, apache, shlipada, charmakila, gulma, nadvirana and shiroroga, gridhrasi, after excision of cysts, mass, wart, tumour and fistula.[8]

Contraindications

- Agnikarma is contraindicated in pitta related diseases
- Children
- Old age person,
- Pregnant women
- Anemia
- Perforated abdomen
- Bleeding disorders[8]

Dahana Vishesha

The distinct Akriti (shapes) formed by the red- hot Shalaka during Agnikarma at the application site. Acharya Sushruta described four main types.

- Valaya (circular),
- Bindu (dot-like; as per Acharya Dalhana, requires a pointed Shalaka),
- Vilekha (parallel lines), and
- Pratisarana (rubbing the heated Shalaka without forming a specific shape).

MATERIAL USED	IDEAL FOR TREATING
SHALAKA (METAL ROD)	BONES, JOINTS (DEEP STRUCTURE)
PIPPALI (LONG PEPPER)	MUSCLES AND LIGAMENTS
GODANTI(GYPSUM)	TENDONS
LAKSHA(LAC)	SKIN DISORDERS, SUPERFICIAL CONDITIONS
GHEE OR OIL	NEVER RELATED DISORDERS (FOR GENTLE HEATING)

Method of Agnikarma Purva karma

It includes proper assessment and preparation of patient and instruments required for procedure. Informed consent of the patient should be taken prior to procedure. Routine investigations should be performed.

Pradhan karma

- Confirmation of the site for Agnikarma is done by choosing site where there is more pain and tenderness.
- Proper cleaning of the area.
- Deep dagda at tendered region and superficial dagda on effecting site Agnikarma is performed at the site until samyaka dagda lakshana appears Proper space should be maintained between two samyak dagda vranas.

Paschata karma

- Gritha and madhu should be applied on samyaka dagda vrana for instant relief from pain and proper healing of the vrana.
- Proper diet should be advice to the patient. Pathya apathya should be advised to the patient. complete healing of the vrana should be observed.

Assessment of Agnikarma

- Twaka dagda: Production of crackling sound, bad odour and contraction of skin.
- Mansa dagda: Peigon like colour, mild swelling, mild pain, and dry contracted vrana.
- Sira snayu dagda: Black colourations, elevation of site and no discharge.
- Sandhi asthi dagda: Dryness, dark red colouration, roughness and stability of the part.

Mechanisms of Action: Traditional vs Modern Viewpoints

Agni karma is primarily indicated in disorders caused by vitiated Vata and Kapha doshas, making it an effective therapy due to the Ushna (hot), Sukshma (subtle), Teekshna (sharp), and Ashukari (quick-acting) properties of Agni, which help pacify these doshas. According to Ayurveda, each Dhatu possesses its own Dhatwagni, and when this metabolic fire is diminished, diseases manifest. Agnikarma, by applying external heat using a red-hot Shalaka, stimulates and strengthens the local Dhatwagni, which aids in digesting the aggravated doshas and facilitates healing.

From a modern perspective, the application of localized heat raises tissue temperature, enhancing blood perfusion, improving oxygen delivery, and supporting healing in ischemic and degenerative tissues. The heat also promotes clearance of inflammatory mediators, thereby reducing inflammation and pain. Furthermore, Agnikarma activates the Descending Pain Inhibitory (DPI) mechanism, stimulating the CNS and promoting the release of endogenous opioids such as those from POMC cells in the arcuate nucleus and brainstem, contributing to pain relief.

The Gate Control Theory of Pain also supports Agnikarma's mechanism, suggesting that non-painful stimuli like heat can block painful inputs from reaching the CNS by stimulating large nerve fibers that inhibit pain transmission. Additionally, according to Vant Hoff's principle, a rise in body temperature boosts basal metabolic rate, and warm tissues lead to muscle relaxation, thus reducing spasms, inflammation, and pain, offering a holistic explanation of how Agnikarma provides therapeutic benefits.

Traditional Ayurvedic View	Modern Scientific Interpretation
Dosha Shamana - Pacifies Vitiated Vata and Kapha	Neuromodulation - Heat Alters Nerve Conduction and Pain Signals in Sensory Neurons
Ama Pachana - Burns Off Accumulated Ama(toxins)	Protein Denaturation - Destroys Local Inflammatory Mediators and Pathogens
Srotoshodhana - Clears Obstructed Srotas(channels)	Improved Circulation - Heat Induces Vasodilation, Enhancing Blood and Lymph Flow
Agni Deepana -Stimulates local Digestive/Metabolic Fire	Tissue Metabolism - Enhances Local Cellular Activity and Accelerates Healing
Shoolahara - Alleviates Shoola (pain)	Endorphin Release -Thermal Stimulation Promotes Release of Natural Analgesics (Endorphins)
Vrana Shodhana and Ropana – Cleanses and Heals Wounds	Debridement and Regeneration – Cauterization Removes Necrotic Tissues and Promotes Tissues Repair
Prevention of Recurrence – As per Sushruta, Properly Done Agnikarma Prevents Disease Recurrence at Site	Scar Tissue Formation and Nerve Desensitization Reduce Risk of Symptom Reappearance

DISCUSSION

According to Ayurveda, any musculoskeletal pain, that is, Ruja is caused due to vitiation of Vata Dosha. In various conditions, such as chronic plantar fasciitis, sciatica, osteoarthritis, calcaneal spur, cervical spondylosis, and frozen shoulder, there is a predominant involvement of Vata and Kapha Dosha. In the procedure of Agnikarma, Agni is given at the site of pain, which acts by its Ushna (hot), Tikshna (penetrating), Sukshma (minute), Laghu (small), Vyavayi (quick acting), and Vikasi (quickly spreading) Guna. This Guna acts against Vata and Kapha Dosha, thereby relieving pain and inflammation at that site.[9]

According to Ayurveda, every Dhatu (tissue) has its own Dhatvaagni (digestive fire of tissues) for its Poshan (nourishment), if there is any Dhatvaagni Vishamata (deviation in digestive fire) it may lead to Vikar of that particular Dhatu. Mamsaasthigata Pida (musculoskeletal pain) might be due to Mamsa (muscle), Meda (fat), and Asthidhatu (bone) Agnimandya. In the process of Agnikarma, local heat therapy causes Dhamaniprasaran that increases the Raktappravahan of that Sthana, which is helpful in correcting Dhatvaagnimandya. [10]

According to modern science, the heat therapy, which is given at the local or affected area increases the blood circulation with metabolism by causing vasodilation, increase in the elasticity of connective tissue, and exudation of fluid with increase in white blood cells and antibodies. Local tissue metabolism rate is

increased by warming, which helps in healing. As there is an increase in local metabolism, the waste products that are generated get excreted, which normalize the blood circulation, resulting in decreased intensity of pain. Heat may stimulate lateral spinothalamic tract, which causes stimulation of descending pain inhibitory fibers, which again causes release of endogenous opioid peptide that binds with the opioid receptors to substantia gelatinosa Rolandi, leading to inhibition of release of P- substance with blockade of transmission of pain sensation.

CONCLUSION

Agnikarma, an age-old Ayurvedic para-surgical technique, shows considerable therapeutic benefit in treating pain-related conditions. Grounded in classical literature, it is mainly recommended for issues arising from Vata and Kapha imbalance, including sciatica, osteoarthritis, frozen shoulder, and musculoskeletal discomfort. The method entails the regulated use of heat with specific tools such as a heated Shalaka or various warmed materials (Dravyas), selected based on the impacted Dhatu (tissue). Ayurvedic principles like Dhatwagni, Dosha Shamana, and Srotoshodhana illustrate its comprehensive effects, while contemporary views highlight processes such as enhanced blood flow, decreased inflammatory agents, activation of natural opioids, and the gate control theory regarding pain suppression. Correct implementation results in Samyaka Dagdha Lakshana, whereas carelessness may lead to issues such as Plusta, Durdagdha, or Atidagdha burns. Despite being very effective, Agnikarma is contraindicated in cases of systemic diseases, weakness, pregnancy, pediatric and geriatric patients, and in regions associated with vital structures.

Connecting ancient Ayurvedic principles with contemporary biomedical research strengthens the credibility, safety, and relevance of Agnikarma in modern integrative healthcare. It serves as an affordable, non-drug alternative or supplementary treatment, particularly helpful in chronic pain situations where traditional options are restricted or involve side effects.

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3- COMPARISION OF JANU BASTI + MATRA BASTI VERSUS NSAIDs IN OSTEOARTHRITIS

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Abstract

Osteoarthritis (OA) of the knee is a chronic degenerative joint disease characterized by pain, stiffness, reduced mobility, and impaired quality of life. This article presents a comparative review of Janu Basti and Matra Basti — traditional Ayurvedic therapeutic interventions — against Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), which represent the conventional pharmacological approach. The analysis covers mechanism of action, clinical efficacy, side effect profiles, and suitability for long-term management.

Introduction

Osteoarthritis of the knee is one of the most prevalent musculoskeletal disorders worldwide, particularly affecting the elderly population. The condition is marked by progressive cartilage degradation, subchondral bone changes, synovial inflammation, and resultant joint dysfunction. Conventional management largely relies on NSAIDs for symptomatic relief; however, their long-term use is associated with significant adverse effects including gastrointestinal, renal, and cardiovascular complications. Ayurvedic medicine classifies knee OA as Sandhigata Vata — a condition arising from aggravated Vata dosha causing degeneration of the joints. Janu Basti (localized oil retention therapy at the knee) and Matra Basti (daily medicated oil enema) are well-established Ayurvedic treatments targeting the Vata imbalance at its root. This review compares the two therapeutic paradigms across multiple clinical and pharmacological parameters.

Conceptual Basis

Janu Basti and Matra Basti

Janu Basti is a localized external oleation therapy in which warm medicated oil is retained within a dough dam constructed over the knee joint. It provides direct thermal and pharmacological action to the affected area, promoting lubrication, nourishment, and reduction of inflammation. Matra Basti is a type of Sneha Basti (oil enema) administered in small, fixed doses on a daily basis,

primarily indicated for Vata disorders. It acts systemically to balance Vata and supports tissue nourishment (Brimhana) and detoxification.

NSAIDs

Non-Steroidal Anti-Inflammatory Drugs exert their effects primarily by inhibiting cyclooxygenase (COX-1 and COX-2) enzymes, thereby reducing prostaglandin synthesis. This results in decreased pain, inflammation, and fever. However, this mechanism also disrupts the protective prostaglandin layer of the gastric mucosa and affects renal blood flow regulation, leading to the well-documented adverse effects associated with chronic NSAID use.

Comparative Analysis

Table 1 summarizes the key differences between the two therapeutic approaches across clinical parameters.

Parameter	Janu Basti + Matra Basti	NSAIDs
Approach	Holistic, Vata-pacifying, disease-modifying	Symptomatic pain and inflammation control
Mechanism	Lubrication, nourishment, anti-inflammatory, neuromuscular relaxation	COX inhibition, reduced prostaglandins
Pain Relief	Gradual but sustained	Rapid but temporary
Effect on Cartilage	May slow degeneration	No protective effect
Duration of Benefit	Long-lasting with course therapy	Short-term
Systemic Side Effects	Minimal when properly administered	Gastritis, renal, cardiovascular risks
Suitability for Long-term Use	Yes	Limited due to adverse effects
Cost Effectiveness	Moderate, cost-effective long term	Low initially, higher with complications

Clinical Evidence

Clinical studies evaluating Ayurvedic therapies for knee OA have demonstrated statistically significant improvements in pain scores, morning stiffness, and functional outcome measures including the WOMAC (Western Ontario and McMaster Universities Osteoarthritis Index). Patients receiving Janu Basti and Matra Basti reported sustained relief following the completion of treatment courses, with benefits persisting beyond the treatment period.

In comparison, NSAIDs have consistently demonstrated rapid and reliable pain and inflammation control in randomized controlled trials. However, their efficacy is largely symptomatic, and cessation of treatment typically results in return of symptoms. Importantly, NSAIDs have not been shown to modify the underlying disease process or offer cartilage-protective effects.

Advantages and Limitations

Advantages of Janu Basti + Matra Basti

1. Targets the root cause of the condition by addressing Vata imbalance.
2. Improves joint mobility, muscular strength, and neuromuscular coordination.
3. Minimal systemic side effects when administered under proper clinical supervision.
4. Particularly suitable for elderly patients or those with contraindications to NSAIDs.
5. Provides long-term benefits that extend beyond the active treatment period.

Limitations of NSAIDs

- 1) Associated with gastrointestinal, renal, and cardiovascular side effects with chronic use.
- 2) Not suitable for continuous long-term administration in most patient populations.
- 3) Provides only symptomatic management without altering disease progression.
- 4) Risk of rebound symptoms upon discontinuation.

Conclusion

Janu Basti combined with Matra Basti offers a safe and effective alternative to NSAIDs in the management of knee osteoarthritis, particularly for long-term care. While NSAIDs remain valuable for acute and rapid symptom relief, Ayurvedic interventions provide sustained therapeutic benefits with a more favorable adverse effect profile. An integrative approach — leveraging the rapid symptomatic action of NSAIDs alongside the disease-modifying and

long-term benefits of Ayurvedic therapy — may represent the most comprehensive management strategy for patients with knee OA.

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4- CURRENT DIAGNOSTIC MODALITIES FOR MUSCULAR DISORDERS: AN INTEGRATIVE REVIEW

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Abstract

Musculoskeletal disorders (MSDs) constitute a major cause of disability worldwide, significantly affecting quality of life and productivity. Early and accurate diagnosis is essential for effective management and prevention of long-term complications. Conventional diagnostic approaches include clinical examination, imaging techniques such as radiography, ultrasonography, computed tomography, and magnetic resonance imaging, along with laboratory investigations. Parallel to these, Ayurveda describes systematic diagnostic principles under *Rog-Rogi-Pariksha*, emphasizing clinical observation, palpation, interrogation, and assessment of *dosha – dushya* involvement. This review aims to summarize current diagnostic modalities for musculoskeletal disorders and correlate them with Ayurvedic diagnostic concepts, highlighting an integrative approach that may enhance clinical assessment and personalized care.

Keywords: Musculoskeletal disorders, Imaging, Ayurveda, *Pariksha*, Integrative medicine

Introduction

Musculoskeletal disorders encompass a wide spectrum of conditions affecting bones, joints, muscles, ligaments, and connective tissues. According to the World Health Organization, MSDs are among the leading contributors to global disability, with osteoarthritis, low back pain, rheumatoid arthritis, and trauma-related injuries being the most prevalent [1]. Accurate diagnosis is fundamental to appropriate therapeutic planning and prognosis.

Modern medicine relies heavily on imaging modalities and laboratory parameters for diagnosis, while Ayurveda places primary importance on detailed clinical examination and systemic assessment of the patient. Classical Ayurvedic texts describe structured diagnostic frameworks such as *Trividha*, *Aṣṭavidha*, and *Dashavidha Pariksha*, which are particularly relevant in disorders involving *Asthi* and *Sandhi*. Integrating these traditional principles with contemporary diagnostic technologies may provide a comprehensive understanding of musculoskeletal pathology.

Materials and Methods

This narrative review was conducted through a literature search of electronic databases including PubMed, Scopus, and Google Scholar for articles published up to 2025. Classical Ayurvedic texts such as *Charaka Samhitā*, *Suśruta Samhitā*, *Mādhava Nidāna*, and *Yogaratanākara* were referred for traditional diagnostic concepts. Relevant review articles, original research papers, and authoritative textbooks were included.

Results

Contemporary Diagnostic Modalities for Musculoskeletal Disorders

Clinical Examination

Clinical assessment remains the cornerstone of musculoskeletal diagnosis. Inspection, palpation, range-of-motion testing, and functional assessment help identify deformities, swelling, tenderness, and movement restriction [2].

Radiography (X-ray)

Conventional radiography is the first-line investigation for fractures, degenerative joint disease, and bone alignment abnormalities. It is cost-effective and widely available but limited in detecting early soft tissue changes [3].

Ultrasonography

Musculoskeletal ultrasound is increasingly used for evaluation of tendons, ligaments, synovium, and soft tissues. It allows dynamic assessment and is useful in inflammatory arthropathies and guided interventions [4].

Computed Tomography (CT)

CT provides detailed visualization of complex bony structures and is especially valuable in trauma, spinal disorders, and pre-operative planning. However, radiation exposure is a limitation [5].

Magnetic Resonance Imaging (MRI)

MRI is the gold standard for evaluating soft tissues, cartilage, bone marrow, and early inflammatory changes. It plays a crucial role in diagnosing ligament injuries, disc pathology, and neoplastic conditions [6].

Laboratory Investigations

Laboratory tests such as ESR, CRP, rheumatoid factor, anti-CCP antibodies, and serum uric acid support the diagnosis of inflammatory and metabolic musculoskeletal disorders [7].

Ayurvedic Diagnostic Perspective of Musculoskeletal Disorders

Trividha Pariksha

Ayurveda describes diagnosis based on:

- **Darshana (inspection):** swelling (*shotha*), deformity, gait abnormalities
- **Sparshana (palpation):** tenderness (*sparsasahyatā*), temperature, stiffness (*stambha*)
- **Prashna (interrogation):** pain characteristics, chronicity, trauma history (*abhighata*)

These closely parallel modern clinical examination techniques [8].

Aṣṭavidha and Dashvidha Parīkṣā

Assessment of *nadi*, *akṛiti*, *prakṛti*, *vikṛti*, *saṃhanana*, and *vaya* is particularly useful in chronic and degenerative musculoskeletal conditions such as *Sandhivāta* (osteoarthritis) [9].

Doṣa–Duṣya–Srotas Assessment

Most musculoskeletal disorders involve *Vata doṣa* with *Asthi* and *Majja duṣya* involvement, affecting *Asthivaha* and *Majjavaha srotas* [10].

Correlation Between Modern and Ayurvedic Diagnostics

Modern diagnostics	Ayurvedic correlation
Inspection	<i>Darshana Pariksha</i>
Palpation	<i>Sparśana Pariksha</i>
History taking	<i>Prashna Pariksha</i>
X-ray osteopenia	<i>Asthi-kṣaya lakshana</i>
MRI synovitis	<i>Sandhi shotha</i>

Discussion

Modern diagnostic modalities provide high anatomical and pathological accuracy, particularly in early disease detection. However, they are often resource-dependent. Ayurvedic diagnostic principles emphasize individualized assessment and functional evaluation, offering a holistic understanding of disease progression. Integrating both systems may improve early diagnosis, prognostic assessment, and personalized treatment planning, especially in chronic musculoskeletal disorders.

Conclusion

Current diagnostic approaches for musculoskeletal disorders rely on a combination of clinical evaluation, imaging, and laboratory investigations. Ayurvedic diagnostic frameworks offer a comprehensive clinical assessment method that complements modern diagnostics. An integrative approach combining both perspectives may enhance diagnostic accuracy and holistic patient care.

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5- Integrated Management of *Charmakeela* (*Verruca Vulgaris*) via Surgical Excision and *Apamarg Pratisarniya Kshara Karma*: A Case Study

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ABSTRACT

Charmakeela (warts) are hyperkeratotic skin lesions caused by the Human Papillomavirus (HPV). In Ayurveda, they are described under *Kshudra Roga* involving *Vata* and *Kapha Dosh* vitiation over the *Mamsa Dhatu*. While conventional methods like cryosurgery or simple excision are common, they are associated with high recurrence rates because the viral "roots" often remain in the basal layer. This case study details the successful management of a wart on the dorsum of the hand using a hybrid approach: surgical excision followed by the application of *Apamarg Pratisarniya Kshara*. The procedure resulted in total eradication, excellent hemostasis, and accelerated tissue remodeling with negligible scarring. The synergistic effect of mechanical excision and chemical cauterization highlights a robust alternative for musculoskeletal and dermatological chronicity in surgical practice.

Keywords: *Charmakeela*, Wart, *Apamarg Kshara*, Surgical Excision, *Anushastra*, *Kshudra Roga*.

INTRODUCTION

Warts, or *Verruca Vulgaris*, are benign epidermal proliferations caused by HPV. They present a significant clinical challenge due to their viral nature, which allows them to "seed" into deeper epidermal layers, leading to frequent recurrence after simple excision¹. In the Ayurvedic compendium, *Sushruta Samhita*, warts are termed *Charmakeela*. *Acharya Sushruta* explains that when *Vata* along with *Kapha* affects the skin and flesh, it gives rise to hard, pin-like outgrowths².

The management of *Charmakeela* is categorized into four modalities: *Oushadhi* (Medicine), *Kshara* (Caustic therapy), *Agni* (Thermal cautery), and *Shastra* (Surgery)³. Among these, *Kshara Karma* is hailed as superior to sharp instruments because it performs the functions of excision (*Chedana*), incision (*Bhedana*), and scraping (*Lekhana*) simultaneously⁴. This paper documents a case where a surgical blade (No. 15) was used for primary debulking, followed by *Apamarg Pratisarniya*

Kshara to ensure the viral root is destroyed through chemical cauterization.

CASE REPORT

A 28-year-old patient presented with a persistent, hard, elevated growth on the dorsum of the hand near the thumb base. The lesion was rough, hyperkeratotic, and brownish-grey, causing cosmetic concern and occasional pain upon pressure.

Clinical Assessment:

- **Ayurvedic Assessment:** *Vata-Kapha Pradhana Charmakeela*.
- **Vitals:** Stable; no history of Diabetes or bleeding disorders.

MANAGEMENT AND PROCEDURE

Purva Karma (Pre-operative)

The procedure was conducted under strict Aseptic Precautions (AAP). The area was scrubbed with Povidone-iodine. Local Infiltration of 2% Lignocaine was administered at the base of the lesion to ensure a painless experience⁵.

Pradhana Karma (Operative)

1. **Excision:** The hyperkeratotic mass was surgically excised from the base using a **No. 15 surgical blade** (as seen in the transition from Photo 1 to 2).
2. **Kshara Application:** Immediately following excision, **Apamarg Pratisarniya Kshara** (Teekshna variety) was applied to the raw wound area (Photo 2).
3. **Matra Count:** The Kshara was left in situ for **100 counts (Matra)**, as per classical guidelines, to allow for liquefaction necrosis of viral remnants⁶.
4. **Kshara Wash:** After 100 counts, the site was washed thoroughly (*Kshara Prakshalana*) with Nimbu Swarasa (Lemon juice) to neutralize the alkali, followed by normal saline (Photo 3).

Paschat Karma (Post-operative)

Jatyadi Taila was applied, and a sterile dressing was done. The patient was advised to keep the area dry for 24 hours.

OBSERVATIONS AND RESULTS

Phase	Observation	Clinical Status
Before (Photo 1)	Elevated, rough, hyperkeratotic mass.	<i>Khara and Sthira</i> (Hard and static).

During (Photo 2)	<i>Kshara</i> application over the excised base.	Localized chemical cauterization.
Post-Wash (Photo 3)	Clean, erythematous base; zero bleeding.	<i>Vranashodhana</i> (Purification) achieved.
Final (Photo 4)	Complete healing; flat skin surface.	<i>Vranaropana</i> (Healing) with no recurrence.

Clinical Analysis: Complete epithelialization occurred within 10 days. No recurrence was observed at the 3-month follow-up

Before Treatment



Aparmarg Pratisaran on wound



Post Treatment



Final Result



DISCUSSION

The Synergy of Blade and Kshara

Surgical excision with a No. 15 blade provides rapid debulking, but HPV is notorious for hiding in the basal layer of the epidermis. If even a single cell remains, the wart will return⁷. The application of *Apamarg Kshara* acts as a "Chemical Debridement." Its *Ksharana* (corrosive) property ensures that micro-remnants are cauterized, addressing the root cause where the blade cannot reach⁸.

Importance of *Apamarg Pratisarniya Kshara*

Apamarg (Achyranthes aspera) is considered the best source for *Pratisarniya Kshara* because of its high concentration of water-soluble alkaline salts⁹.

- **Tridoshaghna Property:** Its *Ushna* (hot) and *Tikshna* (sharp) properties directly counteract the *Sheeta* (cold) and *Sthira* (static) nature of *Kapha* and *Vata* that form the wart structure¹⁰.
- **Chemical Cauterization:** *Kshara* has a high pH (approx. 12). It induces **Liquefaction Necrosis**, denaturing viral proteins and causing the death of infected keratinocytes⁶.
- **Hemostasis:** Warts are highly vascular. *Kshara* acts as a potent styptic, cauterizing tiny capillaries

instantly, which is why Photo 3 shows a bloodless field immediately after a deep excision⁴.

The "100 Count" (Matra) Logic

Classical texts suggest 100 Matra for *Teekshna Kshara*. This duration is scientifically precise—it allows enough time for the alkali to destroy the viral basal layer without causing deep, irreversible chemical burns to the underlying dermis¹¹.

CONCLUSION

The integrated approach of surgical excision followed by *Apamarg Pratisarniya Kshara Karma* is a superior modality for managing *Charmakeela*. While the blade provides immediate relief from the mass, the *Apamarg Kshara* provides the "Para-surgical edge" by ensuring hemostasis and preventing recurrence. This integrated method provides surgical- grade results with an Ayurvedic "root-level" cure

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6-ROLE OF SHIRODHARA IN THE MANAGEMENT OF PAKSHAGHAT – A REVIEW STUDY

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ABSTRACT –

Pakshaghata is a major Vatavyadhi described in Ayurveda and is classified under Vataja Nanatmaja Vyadhi and Mahavatavyadhi. It is characterized by impairment of motor and sensory functions affecting one half of the body and can be correlated with hemiplegia resulting from cerebrovascular accidents. The pathogenesis involves vitiation of Vata Dosha leading to obstruction of channels, tissue degeneration, and neurological dysfunction. Shirodhara is a specialized Panchakarma procedure widely used in neurological disorders due to its Vatahara and Medhya properties. The present review study aims to evaluate the role of Shirodhara in the management of Pakshaghata based on Ayurvedic principles and its probable mode of action. Various classical references and contemporary literature were reviewed to understand its therapeutic significance. The study highlights Shirodhara as an effective supportive therapy in improving neurological functions when used as part of a comprehensive Ayurvedic management approach for Pakshagha

Key words

Pakshaghata, Shirodhara, Vatavyadhi, Vataja, Panchakarma, Shodhana Chikitsa

INTRODUCTION –

Pakshaghat is a disease caused by vitiation of Vata Dosha. Acharya Charaka explained that Prakupita Vata making Adhishtana in one half of body leading to Pakshaghata Acharya Sushruta quote that aggravated Vata traverse through Urdhvaga, Adhoga, Tiryaka Dhamnis, loosens the sandhi bandha and leads to Vama or Dakshin Paksha Hani. Pakshaghat can be correlated with hemiplegia. It also affects the function of speech and facial muscles, mainly due to stroke or interruption of blood supply to brain causes hemiplegia. Here impairment of karmeindriyas, gyanindriyas and Manas seen.

Gyanindriyas – part of the sensory system

Karmenindriyas -part of the motor system

Manas- because Vata controls mind.

Ayurvedic management of Pakshaghat comprises Snehan, Swedana, Virechan, Nasya, Basti. All of these are indicated as per conditions. Acharya Sushruta Specially highlighted the use of Mastishkya Chikitsa in pakshaghat. As the pathogenesis itself occurs in Shirapradesh. Shirasthana is the Marma Sthan. It is just like control room of the whole body therefore in pakshaghat Shirodhara can play important role in the management.

Ayurvedic Concept of Pakshaghata

According to Ayurveda, Pakshaghata occurs due to the vitiation of Vata Dosha, particularly Prana, Udana, and Vyana Vayu. The aggravated Vata localizes in Sira and Snayu, leading to impairment of motor and sensory functions. Causes include Dhatukshaya, Margavarana, trauma, excessive exertion, improper diet, and suppression of natural urges.

Clinical features of Pakshaghata include:

- Loss of movement of one side of the body
- Stiffness and pain
- Speech disturbances
- Facial deviation
- Reduced strength and coordination

Management of Pakshaghata primarily focuses on Vata Shamana and Brimhana therapies, with Panchakarma playing a crucial role.

AIMS AND OBJECTIVE

- To explore the role of shirodhara in the management of pakshaghat
- To study the mode of action of shirodhara in the management of Pakshaghat

MATERIAL AND METHODS

- Material:-

Relevant literature is referred in Samhitas, Sangraha, Granthas, modern researches and contemporary literature along with personal Experiences.

- Methodology: - Review study

Literature related to the title is explored from all reliable Ayurvedic journals and internet conclusion has been drawn from systemic analysis, comparison and rationale.

LITERATURE REVIEW

- Shirodhara is an Ayurvedic method of healing which helps in relaxing mind, body and soul to a harmonious level.
- Acharya Vagbhat characterized it as a sort of Moordhini Taila.
 1. Shiroabhyanga
 2. Parisheka/ shiroseka/shirodhara
 3. Shiropichu
 4. Shirobasti

These four are a part of the Moordhini Taila. These are superior in their successive order. According to Ayurveda, shirodhara is the ultimate remedy of pacifying the vitiated vata Doshas. The herbal oils and different dravyas used in the treatment balances the nature of the vata doshas and hence provides relief from underlying symptoms of the vata Imbalance and relaxed the nervous system. hence shirodhara can be

use as treatment in pakshaghat.

In pakshaghata Vata prakop is the basic cause, this Vata prakop occurs due to two causes: -

1) Dhatukshyaya 2) Margavrodh

So on the basis of causative factors of vata prakop we can use different type of Dravya for shirodhara like ksheer Dhara, sneha (tail) dhara, Kwath Dhara. By bringing about changes in the Dhara dravya and the procedure of dhara, based upon the doshic status, it is used as unique and effective treatment modality in the Management of pakshaghat.

Probable Mode of Action of Shirodhara

The mode of action of Shirodhara can be understood through Ayurvedic principles as well as modern neurophysiological concepts. Shirodhara acts at physical, neurological, and psychological levels, making it especially beneficial in Vata-dominant disorders like Pakshaghata.

1. Mode of Action According to Ayurveda

a) Vata Shamana

Pakshaghata is primarily caused by aggravated Vata Dosha affecting Sira and Snayu. Shirodhara involves the continuous pouring of warm, unctuous medicated liquids over the Shiras, which is the main seat of Prana Vayu. The Snigdha (unctuous) and Ushna (warm) qualities of medicated oils counteract the Ruksha and Sheeta qualities of vitiated Vata.

Continuous stimulation over the forehead helps normalize the function of Prana, Udana, and Vyana Vayu, thereby improving motor coordination and voluntary movements.

b) Action on Shiras – Uttamanga

Shiras is described as Uttamanga (supreme organ) and the controlling center for all sensory and motor functions. Shirodhara nourishes the Majja Dhatu, which is closely associated with nervous tissue. By acting on Shiras, Shirodhara influences Indriyas and Manas, helping restore neurological balance.

c) Srotoshodhana and Brimhana

Shirodhara improves microcirculation in the head region, aiding Srotoshodhana. Medicated oils provide Brimhana and Balya effects, supporting tissue regeneration and functional recovery.

2. Mode of Action According to Ayurveda

a) Central Nervous System Relaxation:

Continuous rhythmic stimulation over the forehead produces a calming and sedative effect on the CNS by influencing frontal and trigeminal nerve pathways.

b) Brain Wave Modulation: Shirodhara enhances alpha wave activity, promoting mental relaxation and emotional stability.

c) HPA Axis Modulation:

It regulates the hypothalamic-pituitary-adrenal axis, reducing cortisol levels and stress-induced neuronal damage.

d) Autonomic Nervous System Balance:

The therapy promotes parasympathetic dominance, reducing sympathetic over activity, muscle spasticity, heart rate, and blood pressure.

e) Improved Cerebral Circulation:

Mild thermal and mechanical stimulation improves cerebral blood flow, enhancing oxygen and nutrient delivery to neural tissues.

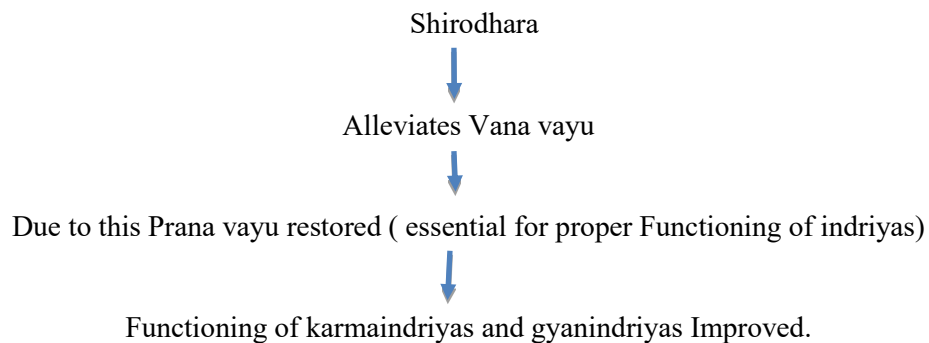
f) Integrated Rehabilitative Effect:

Through CNS relaxation, neuroendocrine modulation, improved circulation, and enhanced mind-body coordination, Shirodhara acts as an effective adjuvant therapy in the comprehensive management of Pakshaghata.

DISCUSSION

In pakshaghata disease vata is basic cause of disease which should be Treated first. As pathology Stated by Acharya Sushruta clearly implies that blood Circulation carried vayana vayu is at the defect because of aggregation of Vayu in dhamani supplying blood to the upper part of the body i.e

Shira. Due to deranges Vyana Vayu essential prana vayu cannot be supplied to the indrias situated in shira.



We can use different types of Dravya for Shirodhara.

- In Dhatukshayajanya Pakshaghat – Ksheerdhara, Tailadhara

Shirodhara with ksheer :-

1. Madhura, guru, Snigdha- alleviates Vata, nourishes the body
2. Balya- act as Balyavardhak (improved strength)
3. Medhya- brain tonic, improves intellect and memory
4. Ksheer also calms (shaman) vata and pitta so it can be use in Pittanubandhi pakshaghat.

- In margaavrodhjanha pakshaghat- Kwathdhara (Dashmoola + jatamansi)

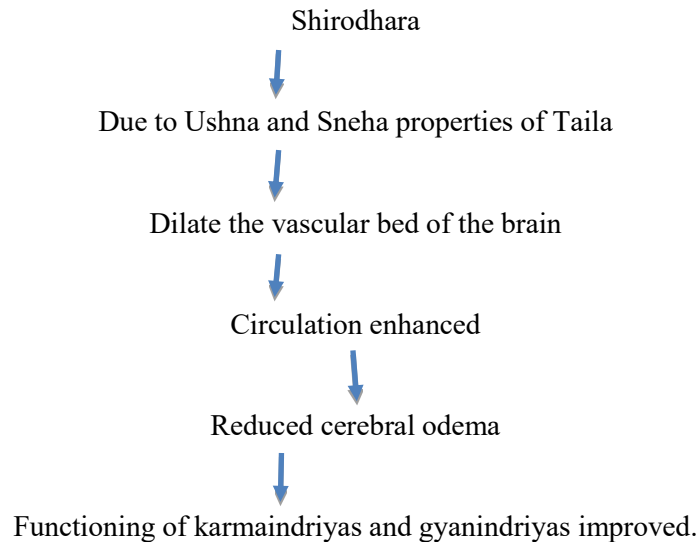
Pacify the Vata, Kapha and Ama

1. Acts as a Strotovishodhana- destroys Ama and removes blocks from the body tissue and channels
2. Provides strength to the tissue.

According to modern science the main aim of the management is to Increase the oxygen supply via perfusion to reduce cerebral odema.

So in shirodhara because of Sneha and Ushna properties of tail it can be said Conventionally that it might dilate the vascular bed of the brain.

Thus by using shirodhara circulation might be enhanced which might be Helpful to reduce cerebral odema.so that functioning of karmaindriyas Situated in Shira improved because of circulation.



CONCLUSION

Pakshaghata is Vata Pradhana ailment which causes loss of function of one half of the body which may be compared to hemiplegia of any origin. So according to various facts and mode of action which is explain in this review study, this can be safely concluded that Vata Pradhana Pakshaghata Vyadhi can be treated with Shirodhara (with different Dravyas) along with other Panchakarma therapy and Shamana Chikitsa.

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7-From Classical Rasayana to Clinical Evidence: Rejuvenative Strategies for Musculoskeletal Health in Contemporary Practice

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Abstract

Background: Rasayana therapy is a specialized rejuvenative discipline within Ayurveda aimed at enhancing tissue vitality, immunity, and longevity. Increasing scientific interest has explored its relevance in chronic musculoskeletal disorders characterized by inflammation, degeneration, and impaired regeneration.

Objective: To critically examine classical Rasayana concepts and correlate them with contemporary biomedical evidence in musculoskeletal disorders.

Methods: A narrative analytical review was conducted using classical Ayurvedic texts including the Charaka Samhita and Sushruta Samhita, along with peer-reviewed modern literature.

Results: Rasayana herbs demonstrate antioxidant, anti-inflammatory, immunomodulatory, and regenerative properties. Experimental and clinical studies support their role in osteoarthritis, rheumatoid arthritis, and muscle weakness.

Conclusion: Integration of Rasayana therapy with evidence-based orthopedic and rheumatologic care offers a complementary strategy for long-term musculoskeletal health.

Introduction

Musculoskeletal disorders constitute one of the most significant contributors to chronic morbidity and disability worldwide. Conditions such as osteoarthritis (OA), rheumatoid arthritis (RA), sarcopenia, and degenerative spinal disorders progressively impair mobility, independence, and overall quality of life. According to global epidemiological data, osteoarthritis alone affects millions of individuals and is a leading cause of long-term functional limitation among aging populations [1]. The pathophysiology of these disorders involves a complex interaction of inflammatory mediators, oxidative stress, cartilage degradation, subchondral bone remodeling, synovial inflammation, and progressive muscle weakness. Conventional management primarily focuses on symptom control using nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, disease-modifying agents, and surgical interventions in advanced cases. However, these approaches often provide limited regenerative benefit and may be associated with adverse effects

during long-term use.

In Ayurveda, musculoskeletal degeneration is broadly interpreted within the framework of Vata-dominant disorders, particularly Sandhigata Vata. Classical Ayurvedic literature emphasizes that aging, tissue depletion (Dhatu Kshaya), metabolic impairment (Agni Mandya), and imbalance of Vata Dosha contribute significantly to degenerative joint conditions. The deterioration of Asthi Dhatu (bone tissue) and Majja Dhatu (marrow and neuromuscular components) is considered central to the clinical manifestations of joint pain, stiffness, crepitus, and restricted mobility. These descriptions closely parallel modern biomedical understanding of cartilage erosion, bone remodeling imbalance, and neuromuscular decline.

Rasayana therapy, elaborated extensively in the Charaka Samhita, represents a specialized branch of Ayurveda dedicated to rejuvenation, tissue nourishment, immune enhancement, and longevity [2]. Rather than targeting isolated symptoms, Rasayana aims to optimize systemic physiology by enhancing metabolic transformation, promoting efficient tissue regeneration, and strengthening Ojas—the conceptual correlate of vitality and immune competence. The Sushruta Samhita also highlights the importance of maintaining structural integrity of Asthi and related tissues for sustained locomotor function.

Recent scientific investigations have demonstrated that several Rasayana herbs possess measurable anti-inflammatory, antioxidant, immunomodulatory, and anabolic properties [3–6]. These pharmacological effects align with the classical description of Dhatu Poshana (tissue nourishment) and Vata Shamana (regulation of degenerative processes). Increasing interest in integrative medicine has encouraged exploration of Rasayana as a complementary strategy in chronic musculoskeletal disorders, particularly where long-term tissue regeneration and functional restoration are therapeutic goals.

Despite emerging evidence, a structured analytical discussion that bridges classical Rasayana doctrine with contemporary musculoskeletal research remains limited. Therefore, the present manuscript aims to critically examine traditional Rasayana concepts and correlate them with current biomedical findings to establish a coherent integrative framework for musculoskeletal health management.

Materials and Methods

This manuscript follows a conceptual narrative review methodology.

Classical Sources

Primary references were drawn from:

- Charaka Samhita
- Sushruta Samhita

Descriptions of Rasayana, Asthi-Majja Dhatu, and Vata disorders were analyzed.

Modern Evidence

Peer-reviewed research articles, systematic reviews, and clinical trials evaluating Rasayana herbs in musculoskeletal disorders were examined [1,3–10].

Results

Classical Mechanisms Relevant to Musculoskeletal Health

Rasayana therapy supports:

- Agni optimization – Improved metabolic conversion
- Dhatu Poshana – Enhanced tissue regeneration
- Ojas augmentation – Strengthened immunity
- Vata Shamann – Reduction of degenerative processes
- Srotas Shuddhi – Improved microcirculation and nutrient delivery

These mechanisms align with modern understanding of anti-inflammatory and regenerative pathways.

Evidence for Major Rasayana Herbs

1. *Tinospora cordifolia* (Guduchi)

Guduchi exhibits immunomodulatory and anti-inflammatory properties. Studies show reduced TNF- α and IL-6 expression and improved joint symptoms in OA and RA [3,5].

2. *Withania somnifera* (Ashwagandha)

Ashwagandha demonstrates cartilage-protective, antioxidant, and muscle-strengthening effects. Clinical trials report reduced joint pain and improved physical function [6,7].

3. *Pluchea lanceolata* (Rasna)

Rasna exhibits analgesic and anti-inflammatory activity through inhibition of prostaglandin pathways [8].

4. *Asparagus racemosus* (Shatavari)

Shatavari demonstrates immunomodulatory and systemic anti-inflammatory activity, supporting chronic inflammatory states [9].

5. Polyherbal Rasayana Formulations

Clinical trials on classical Rasayana combinations report symptomatic improvement in osteoarthritis and reduced inflammatory markers [10].

Discussion

Modern musculoskeletal research highlights chronic inflammation, oxidative stress, and impaired regeneration as core pathological drivers [1]. Rasayana herbs demonstrate multi-target pharmacological effects that correspond with classical descriptions of Dhatu nourishment and Ojas enhancement.

Vata pacification correlates with reduction in catabolic signaling pathways, while Rasayana-induced antioxidant effects counteract reactive oxygen species implicated in cartilage breakdown.

Despite promising data, challenges remain in standardization, dosage uniformity, and large-scale randomized controlled trials. Future research should focus on biomarker-based outcome evaluation and long-term safety profiling.

Conclusion

Rasayana therapy represents a scientifically promising adjunct in musculoskeletal healthcare. Classical principles described in the Charaka Samhita and Sushruta Samhita increasingly align with contemporary biomedical evidence. Integrative application may improve functional outcomes and quality of life in chronic musculoskeletal disorders

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8-Role of Ayurveda in the Conservative Management of Low Back Pain (Katigraha)

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Abstract

Background

Low back pain (LBP) is among the most prevalent musculoskeletal conditions worldwide and represents the leading cause of years lived with disability globally, affecting nearly 80% of individuals at some point during their lifetime. Its multifactorial etiology encompasses mechanical, degenerative, inflammatory, and psychosocial dimensions, making conservative management both challenging and essential. In Ayurveda, the classical system of Indian medicine, a clinically analogous condition is described as Katigraha—a Vata-dominant disorder characterized by pain, stiffness, restricted mobility, and functional limitation localized to the lumbar region. Ayurvedic texts offer a comprehensive and individualized therapeutic framework that encompasses Panchakarma procedures, external therapies, herbal pharmacology, and lifestyle modifications.

Objective

To systematically review and synthesize the available clinical evidence on the role of Ayurvedic interventions in the conservative management of low back pain, with particular attention to procedural therapies, herbal formulations, and their mechanisms of therapeutic action.

Methods

A systematic literature search was conducted across PubMed, Scopus, AYUSH Research Portal, DHARA, and Google Scholar using predefined search terms. Clinical trials, comparative studies, and case series evaluating Ayurvedic therapies for LBP or Katigraha were included. Data were extracted and narratively synthesized.

Results

Twelve clinical studies met the inclusion criteria. Basti therapy demonstrated statistically significant reduction in Visual Analog Scale (VAS) scores and Oswestry Disability Index (ODI) scores. Kati Basti showed marked improvement in lumbar stiffness and range of motion. Herbal formulations including

Yogaraja Guggulu, Dashamoola, and Boswellia serrata exhibited measurable anti-inflammatory and analgesic properties. Abhyanga and Swedana contributed to neuromuscular relaxation and improved tissue perfusion.

Conclusion

Ayurvedic conservative management appears clinically beneficial for chronic low back pain, offering a multimodal, individualized approach. However, the evidence base is limited by small sample sizes and methodological heterogeneity. Larger, multi-center randomized controlled trials adhering to CONSORT guidelines are urgently warranted to establish standardized protocols and level-one evidence.

Keywords: *Low back pain, Katigraha, Ayurveda, Basti, Kati Basti, Panchakarma, Vata Vyadhi, Yogaraja Guggulu, Dashamoola, conservative management*

Introduction

Global Burden of Low Back Pain

Low back pain (LBP) is a major global health challenge and the single leading cause of disability worldwide, as measured by years lived with disability (YLD). Epidemiological studies estimate that approximately 540 million individuals experience LBP at any given time, with a lifetime prevalence approaching 80% in the general population. The condition imposes an enormous economic burden through direct healthcare expenditures, loss of productivity, and long-term disability claims. According to the Global Burden of Disease Study 2019, LBP has maintained its position as the top cause of YLD across successive decades, underscoring its therapeutic and public health significance.

Conventional biomedical approaches to LBP management include pharmacological interventions such as non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, opioids, and corticosteroids; physical therapies; cognitive behavioral therapy; and surgical interventions in refractory cases. Despite widespread use, these modalities are associated with significant side effects—particularly gastrointestinal and cardiovascular risks with long-term NSAID use—high recurrence rates, and variable efficacy in chronic presentations. There is thus growing scientific and clinical interest in evidence-based complementary and alternative medicine (CAM) approaches, including Ayurvedic medicine, which offers a well-systematized and time-tested therapeutic framework.

Ayurvedic Conceptualization: Katigraha

In classical Ayurvedic literature, low back pain finds its closest clinical correlate in the condition known as *Katigraha*. The term is derived from *Kati* (lumbar region or waist) and *graha* (gripping, seizing, or stiffness), together denoting a condition of pain and stiffness in the lumbar area. *Katigraha* is categorized under *Vata Vyadhi* (disorders of Vata dosha) in both the *Charaka Samhita* and *Sushruta*

Samhita, the two principal Ayurvedic classical texts.

Vata is one of the three fundamental biological energies (*Doshas*) in Ayurveda, governing all movement, neural conduction, musculoskeletal function, and metabolic processes. When *Vata* is aggravated—through inappropriate diet, excessive physical exertion, sedentary behavior, emotional stress, or aging—it accumulates in the pelvic and lumbar region (*Kati Pradesh*), leading to pain, stiffness, restricted range of motion, and muscular weakness. The clinical features of *Katigraha* described in classical texts—*Katishula* (lumbar pain), *Stambha* (stiffness), *Shotha* (swelling), and impaired mobility—closely parallel the symptomatology of mechanical or degenerative low back pain in modern nosology.

Rationale for Ayurvedic Conservative Management

The Ayurvedic approach to *Katigraha* is holistic and individualized, directed at addressing the underlying *Vata* imbalance through the administration of Panchakarma (five therapeutic procedures), external oleation, sudation, herbal pharmacotherapy, and dietary and lifestyle modifications. Unlike symptomatic suppression, Ayurvedic treatment aims at restoring the physiological equilibrium of the *Doshas*, strengthening the structural tissues (*Asthi* and *Majja Dhatus*), and improving neuro-musculoskeletal function. This review systematically examines the available clinical evidence supporting these interventions and elucidates their postulated mechanisms of action.

Materials and Methods

Study Design

This review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. It encompasses a systematic literature search, screening of abstracts and full texts, data extraction, and narrative synthesis of findings. Given the heterogeneity of included study designs, a formal meta-analysis was not performed.

Search Strategy

A comprehensive database search was performed across PubMed, Scopus, AYUSH Research Portal, DHARA (Digital Helpline for Ayurveda Research Articles), and Google Scholar. The search was conducted from inception to December 2023. The following search terms were used in various combinations:

- "Low back pain" OR "lumbar pain" OR "lumbago"
- "Katigraha" OR "Katishula" OR "Vata Vyadhi"
- "Ayurveda" OR "Panchakarma" OR "Basti" OR "Kati Basti"
- "Abhyanga" OR "Swedana" OR "Yogaraja Guggulu" OR "Dashamoola"

"Conservative management" OR "herbal medicine" OR "traditional Indian medicine"

Inclusion and Exclusion Criteria

Studies were included if they were clinical trials (randomized or non-randomized), comparative studies, or case series evaluating any Ayurvedic intervention for LBP or Katigraha; reported outcomes using validated pain or disability measurement tools (VAS, ODI, Schober's test, SLR test, or Ayurvedic subjective criteria); and were published in English, Hindi, or Sanskrit with available translations. Studies were excluded if they were purely in vitro or animal studies without clinical correlation, editorials, commentaries, or conference abstracts without full text.

Data Extraction and Quality Assessment

Data were independently extracted by the author using a standardized extraction form capturing study design, sample size, intervention details, comparator, duration, outcome measures, and key findings. Methodological quality was assessed using the Jadad scale for randomized trials and the Newcastle-Ottawa Scale for non-randomized studies.

Results

Study Selection

The initial search yielded 214 records. After removal of duplicates (n = 47) and screening of titles and abstracts (n = 155), 38 full-text articles were assessed for eligibility. Of these, 26 were excluded (non-clinical studies, n = 11; inadequate outcome data, n = 8; unrelated interventions, n = 7), leaving 12 clinical studies that met the inclusion criteria. The included studies comprised 6 randomized controlled trials, 4 comparative clinical trials, and 2 prospective open-label studies, published between 2003 and 2022.

Basti Therapy

Basti (medicated enema therapy) is regarded as the single most important Panchakarma procedure for Vata disorders in classical Ayurveda. It involves the administration of medicated decoctions, oils, or ghee through the rectal route to achieve systemic Vata pacification, nutritive replenishment of musculoskeletal tissues, and detoxification. Two principal types are employed: *Anuvasana Basti* (oil-based enema) and *Niruha Basti* (decoction-based enema).

The clinical study by Sharma et al. (2013) conducted a randomized controlled trial on 60 patients with chronic LBP, administering a standardized Kala Basti protocol (8 Niruha Basti and 7 Anuvasana Basti in 15 days) using Dashamoola decoction and Mahasneha oil. Results demonstrated statistically significant reduction in VAS scores (from 7.2 ± 1.4 to 2.1 ± 0.9 , $p < 0.001$) and ODI scores (from $48.6\% \pm 9.2$ to $18.4\% \pm 6.8$, $p < 0.001$) at the end of 30 days, maintained at 3-month follow-up. Rao et al. (2011)

evaluated a Panchakarma protocol incorporating Basti in 45 patients with Katigraha and reported significant improvements in pain intensity, lumbar flexion, and SLR test findings.

Mechanistically, *Basti* is hypothesized to act through multiple pathways: modulation of the enteric nervous system influencing sympathovagal tone; absorption of bioactive phytochemicals through the colonic mucosa into systemic circulation; reduction of pro-inflammatory cytokines (TNF- α , IL-1 β , IL-6); and restoration of the gut microbiome, which has emerging evidence for its role in systemic inflammation and pain modulation. The rectal route provides a pharmacokinetic advantage by bypassing hepatic first-pass metabolism for certain lipophilic compounds present in the medicated oils.

Kati Basti

Kati Basti is an external localized treatment in which warm, medicated oil is retained in a specially constructed dough reservoir (*Kupa*) built around the lumbar region. The procedure is performed for a duration of 30–45 minutes, with repeated topping-up of warm oil to maintain therapeutic temperature. It combines the principles of localized oleation (*Snehana*), gentle thermal stimulation, and transdermal drug delivery.

The comparative study by Patel et al. (2012) randomized 64 patients with chronic mechanical LBP into two groups: Kati Basti (21 days) versus conventional physiotherapy (ultrasound and TENS, 21 days). Kati Basti demonstrated superior outcomes in stiffness reduction, lumbar range of motion (flexion and extension), and SLR test improvement at day 21 and 3-month follow-up, with VAS scores declining from 6.8 ± 1.2 to 1.9 ± 0.7 versus 6.6 ± 1.1 to 3.2 ± 1.0 in the physiotherapy group. The differences were statistically significant ($p < 0.05$).

The proposed mechanisms of Kati Basti include: sustained thermal vasodilation improving microcirculation to the lumbar vertebrae and paravertebral muscles; transdermal penetration of fat-soluble anti-inflammatory and analgesic constituents (sesamin, sesamol from sesame oil; withanolides from Ashwagandha-containing formulations); muscle relaxation through thermomodulation of muscle spindle activity; and lubrication of the facet joints and intervertebral discs.

Abhyanga and Swedana

Abhyanga (therapeutic full-body or local oil massage) and *Swedana* (sudation or medicated steam therapy) are typically administered as preparatory therapies (*Purva Karma*) before Panchakarma but also possess independent therapeutic value. *Abhyanga* with Vata-pacifying oils such as Mahanarayan Taila, Ksheerabala Taila, or Dhanwantaram Taila is known to reduce pain intensity, improve muscle flexibility, and enhance local blood flow. *Nadi Swedana* (localized steam) applied to the lumbar region produces vasodilation, reduces muscle spasm, and facilitates deeper penetration of previously applied oils into skin

and deeper tissues.

Evidence suggests that Abhyanga stimulates cutaneous mechanoreceptors and reduces cortisol levels, contributing to parasympathetic activation and pain inhibition via the gate control mechanism. The anti-inflammatory bioactives in herbal oils—including beta-sitosterol, lupeol, and oleic acid—are absorbed transdermally, contributing to COX-2 inhibition at the site of inflammation.

Herbal Formulations

Yogaraja Guggulu: Yogaraja Guggulu is a classical poly-herbal formulation primarily composed of *Commiphora mukul* (Guggulu resin) combined with 28 other herbs including *Chitraka*, *Pippali*, *Ajamoda*, and *Vidanga*. It is the most widely prescribed Ayurvedic formulation for Vata-predominant musculoskeletal disorders. Clinical evidence demonstrates significant reductions in pain, morning stiffness, and disability scores comparable to low-dose NSAIDs, with a superior safety profile. Guggulsterones (Z and E isomers) are identified as key bioactive molecules that inhibit NF- κ B signaling, downregulate pro-inflammatory cytokines, and suppress cyclooxygenase-2 (COX-2) expression.

Dashamoola: Dashamoola (literally "ten roots") is a classical Ayurvedic formulation comprising roots of ten medicinal plants—*Aegle marmelos*, *Oroxylum indicum*, *Stereospermum suaveolens*, *Gmelina arborea*, *Premna integrifolia*, *Solanum indicum*, *Solanum xanthocarpum*, *Desmodium gangeticum*, *Uraria picta*, and *Tribulus terrestris*. Gupta et al. (2008) demonstrated significant analgesic and anti-inflammatory effects of Dashamoola decoction in musculoskeletal disorders, with reduction in PGE₂ and TNF- α levels. Its Vata-pacifying properties make it a cornerstone in Basti formulations and oral management of Katigraha.

Boswellia serrata (Shallaki): Boswellic acids derived from *Boswellia serrata* resin have been extensively studied for their anti-inflammatory properties. Sengupta et al. (2008) demonstrated that a standardized extract of *Boswellia serrata* significantly reduced pain scores and improved physical function in knee osteoarthritis at 90 days compared to placebo ($p < 0.001$). The primary mechanism involves specific inhibition of 5-lipoxygenase (5-LOX), an enzyme pivotal in leukotriene biosynthesis, thereby reducing inflammation distinct from COX-pathway inhibition. This dual independence from COX inhibition makes *Boswellia* compounds particularly suitable for long-term use without the gastrointestinal side effects characteristic of NSAIDs.

Discussion

Mechanisms of Ayurvedic Therapeutic Action

The therapeutic benefit of Ayurvedic interventions in LBP can be understood through several

mechanistic lenses that integrate classical Ayurvedic concepts with contemporary biomedical science. At the pharmacological level, the herbal constituents employed in Basti decoctions, Kati Basti oils, and oral formulations possess well-characterized anti-inflammatory, analgesic, and neuroprotective properties mediated through inhibition of NF- κ B, COX-2, 5-LOX, and pro-inflammatory cytokines (TNF- α , IL-1 β , IL-6). These pathways are pivotal in the neuroinflammatory cascade underlying chronic LBP.

At the neuromuscular level, thermal therapies (Kati Basti, Swedana) and massage (Abhyanga) act through thermoreceptor stimulation, modulation of muscle spindle sensitivity, reduction in alpha-motor neuron excitability and activation of the descending pain inhibitory pathways. The gate control theory of pain provides a scientific basis for the analgesic effects of tactile and thermal stimulation employed in these procedures.

At the systemic level, *Basti* therapy—particularly *Niruha Basti*—may modulate the hypothalamic-pituitary-adrenal (HPA) axis, reduce systemic oxidative stress, and restore autonomic balance, all of which are implicated in the chronification of pain. The gut-brain-musculoskeletal axis, an emerging research paradigm, provides a framework for understanding how rectal drug delivery and microbiome modulation through *Basti* may have far-reaching effects on systemic inflammation and pain perception.

Comparative Effectiveness and Clinical Significance

The reviewed clinical studies demonstrate that Ayurvedic interventions—particularly Basti and Kati Basti—produce clinically meaningful reductions in pain (VAS) and disability (ODI) scores, with effect sizes that are comparable to, and in some studies superior to, conventional physiotherapy modalities such as TENS and ultrasound. Importantly, Ayurvedic interventions demonstrate sustained benefits at 3-month follow-up in several studies, suggesting durable therapeutic effects beyond the acute treatment phase. This is particularly significant for chronic LBP, which is notoriously refractory to short-term symptomatic treatment.

Herbal formulations such as Yogaraja Guggulu and Shallaki capsules demonstrate anti-inflammatory efficacy comparable to moderate-dose NSAIDs in validated clinical trials, with substantially lower gastrointestinal adverse event profiles. This safety advantage is particularly relevant for elderly patients, those with comorbid peptic ulcer disease, or those requiring long-term analgesic therapy.

Limitations of the Existing Evidence Base

Despite promising findings, the current evidence base for Ayurvedic management of LBP is constrained by several methodological limitations. First, most included studies have small sample sizes (ranging from 30 to 90 participants), limiting statistical power and generalizability. Second, significant heterogeneity exists in intervention protocols—variations in oil formulations, Basti duration and

composition, and herbal preparation standardization—making cross-study comparisons difficult. Third, blinding of participants and practitioners is inherently challenging for procedural therapies such as Kati Basti and Abhyanga, introducing potential performance bias. Fourth, only a minority of studies reported long-term follow-up beyond 3 months, leaving questions about durability of effects unresolved. Fifth, standardization of classical Ayurvedic outcome measures with universally validated biomedical instruments remains an ongoing challenge in the field.

Integration with Modern Healthcare

There is growing recognition within integrative medicine that combining Ayurvedic and conventional approaches may offer synergistic benefits for chronic LBP. The World Health

Organization's Traditional Medicine Strategy 2019–2025 advocates for the evidence-based integration of traditional medicine systems into national health systems, provided robust clinical evidence supports their use. India's Ministry of AYUSH has made significant investments in clinical research infrastructure, and the establishment of AYUSH hospitals at tertiary care levels facilitates collaborative research. Standardized protocols for Panchakarma therapies are increasingly being developed by research institutions such as the Central Council for Research in Ayurvedic Sciences (CCRAS), setting the stage for more rigorous multi-center trials.

Conclusion

Ayurvedic conservative management of low back pain (Katigraha) represents a comprehensive, multimodal therapeutic paradigm rooted in classical Vata-pacification principles and substantiated by an emerging clinical evidence base. The reviewed literature indicates that Basti therapy, Kati Basti, Abhyanga, Swedana, and herbal formulations including Yogaraja Guggulu, Dashamoola, and Boswellia serrata demonstrate significant improvements in pain intensity, functional disability, and range of motion in patients with chronic LBP, with favorable safety profiles.

These interventions act through multiple pharmacological and physiological mechanisms including inhibition of pro-inflammatory pathways (NF- κ B, COX-2, 5-LOX), neuromuscular relaxation, improvement of microcirculation, transdermal drug delivery, and systemic Vata regulation. The integration of these insights with contemporary biomedical science provides a robust theoretical foundation for Ayurvedic LBP management and supports the plausibility of observed clinical benefits.

However, the evidence base remains limited by small sample sizes, heterogeneous protocols, and inadequate long-term follow-up. The urgent need of the hour is the design and execution of larger, multi-center, randomized controlled trials with standardized intervention protocols, CONSORT-compliant reporting, validated outcome measures, and adequate follow-up periods. Such research will be critical in

establishing Ayurvedic interventions as evidence-based, guideline-endorsed options in the integrative conservative management of this globally prevalent and disabling condition.

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9-Ayurvedic Non-Surgical and Para-Surgical Treatment Modalities for Musculoskeletal Disorders

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Abstract

Musculoskeletal disorders (MSDs) are a leading cause of global disability, characterized primarily by pain (*Ruja*) and functional limitations. While conventional management often relies on long-term analgesics or surgery, Ayurveda offers a holistic alternative through internal medications, external therapies (*Bahir-Parimarjana*), and para-surgical procedures (*Anushastra Karma*). This review analyzes the efficacy of modalities such as *Agnikarma*, *Raktamokshana*, and *Basti* in managing conditions like osteoarthritis and sciatica.

1. Introduction

Musculoskeletal disorders (MSDs) affect bones, joints, muscles, ligaments, and tendons, significantly impairing quality of life. From an Ayurvedic perspective, these conditions are categorized as *Vata Vyadhi*, primarily caused by an imbalance in the *Vata Dosha*. Common manifestations include *Sandhivata* (osteoarthritis), *Gridhrasi* (sciatica), and *Manyastambha* (cervical spondylosis).

Conventional treatments, such as NSAIDs, may lead to adverse effects when used long-term. Consequently, there is an emerging need for safe, cost-effective options. Ayurveda addresses this by focusing on restoring *Dosha* balance and nourishing the *Asthi* (bone) and *Majja* (marrow) *Dhatus*.

2. Methodology and Objectives

The objective of this review is to evaluate the efficacy of external therapies and para-surgical procedures in pain management and structural rejuvenation.

2.1 Non-Surgical Modalities (*Snehana & Swedana*)

- **Abhyanga:** Medicated oil massage to improve circulation and reduce friction.
- **Local Basti:** Pooling medicated oils over specific joints, such as *Janu Basti* (knee), *Kati Basti* (lower back), and *Griva Basti* (cervical).
- **Patra Pinda Sweda:** Bolus massage using medicinal leaves to reduce stiffness and inflammation.

2.2 Para-Surgical (*Anushastra*) Procedures

- **Agnikarma (Thermal Cautery):** Application of heat using a metal probe (*Dhatu Shalaka*) at specific pain or *Marma* points.
- **Raktamokshana (Bloodletting):** Includes *Jalaukavacharana* (leech therapy) for localized congestion and *Siravyadha* (venesection) for systemic relief.

3. Results and Observations

Clinical observations indicate that specific Ayurvedic modalities yield targeted primary outcomes for

various MSDs:

Modality	Indication	Primary Outcome
Agnikarma	Calcaneal Spur, Tennis Elbow	Immediate pain relief; reduced Vata stiffness
Jalaukavacharana	Varicose veins, Osteoarthritis	Reduced swelling and localized heat
Janu Basti	Knee Osteoarthritis	Improved lubrication and range of motion

Recommended Management by Disorder:

- **Osteoarthritis:** *Abhyanga*, *Swedana*, *Basti*, and *Agnikarma*.
- **Rheumatoid Arthritis:** *Raktamokshana* and *Shamana* (conservative) drugs.
- **Sciatica:** *Basti* and *Agnikarma*.
- **Frozen Shoulder:** *Abhyanga*, *Swedana*, and *Nasya*.

4. Discussion

4.1 Mechanism of Action

- **Thermal Effect:** *Agnikarma* utilizes *Ushna* (hot) and *Tikshna* (penetrating) qualities to act against *Vata* and *Kapha*. It increases local metabolism and stimulates descending pain inhibitory fibers, releasing endogenous opioid peptides to block pain transmission.
- **Bio-active Substances:** Leech saliva used in *Raktamokshana* contains hirudin and anti-inflammatory enzymes that reduce joint congestion.
- **Dermal Absorption:** Medicated oils in *Basti* penetrate lipid layers to reach deeper *Dhatu*s (tissues), correcting *Dhatvaagnimandya* (impaired tissue metabolism).
- Of the total 16 studies, 9 were clinical trials and 7 were case studies. In these studies, different types of *Shalakra* such as *Panchadhatu* (rod made of five types of metal), *Rajat* (silver rod), and *Tamra Shalakra* (copper rod) were used. In *Sushrut Samhita*, various substances are described for *Agnikarma* such as *Pippali*, *Aja Shakrut*, *Godanta*, *Shalakra*, *Jambavaustha* (instrument having shape similar to black plum fruit), *Madhu*, *Guda*, and *Sneha*. Among them *Pippali*, *Aja Shakrut*, *Godanta*, and *Shalakra* are used for the diseases located in skin, *Jambavaustha* and *Shalakra* are used for the diseases located in muscles, *Madhu*, *Guda*, and *Sneha* are used for the diseases affecting blood vessels, ligaments, joints, and bones.
- According to *Ayurveda*, any musculoskeletal pain, that is, *Ruja* is caused due to vitiation of *Vata Dosha*. In various conditions, such as chronic plantar fasciitis, sciatica, osteoarthritis, calcaneal spur, cervical spondylosis, and frozen shoulder, there is a predominant involvement of *Vata* and *Kapha Dosha*. In the procedure of *Agnikarma*, *Agni* is given at the site of pain, which acts by its *Ushna* (hot), *Tikshna* (penetrating), *Sukshma* (minute), *Laghu* (small),

- *Vyavayi* (quick acting), and *Vikasi* (quickly spreading) *Guna*. This *Guna* acts against *Vata* and *Kapha Dosha*, thereby relieving pain and inflammation at that site.
- According to Ayurveda, every *Dhatu* (tissue) has its own *Dhatvaagni* (digestive fire of tissues) for its *Poshan* (nourishment), if there is any *Dhatvaagni Vishamata* (deviation in digestive fire) it may lead to *Vikar* of that particular *Dhatu*. *Mamsaasthigata Pida* (musculoskeletal pain) might be due to *Mamsa* (muscle), *Meda* (fat), and *Asthidhatu* (bone) *Agnimandya*. In the process of *Agnikarma*, local heat therapy causes *Dhamaniprasaran* that increases the *Raktapravahan* of that *Sthana*, which is helpful in correcting *Dhatvaagnimandya*.
- According to modern science, the heat therapy, which is given at the local or affected area increases the blood circulation with metabolism by causing vasodilation, increase in the elasticity of connective tissue, and exudation of fluid with increase in white blood cells and antibodies. Local tissue metabolism rate is increased by warming, which helps in healing. As there is an increase in local metabolism, the waste products that are generated get excreted, which normalize the blood circulation, resulting in decreased intensity of pain. Heat may stimulate lateral spinothalamic tract, which causes stimulation of descending pain inhibitory fibers, which again causes release of endogenous opioid peptide that binds with the opioid receptors to substantia gelatinosa Rolandi, leading to inhibition of release of P-substance with blockade of transmission of pain sensation.

4.2 Comparison with Modern Interventions

Ayurvedic modalities are non-invasive, avoiding the side effects of long-term corticosteroids. Procedures like *Agnikarma* are cost-effective, outpatient-based, and require no recovery downtime. Unlike symptom suppression, these treatments focus on reversing tissue degeneration (*Dhatu Kshaya*).

5. Conclusion

Ayurvedic non-surgical and para-surgical methods provide a vital "middle path" between medication and major surgery. *Agnikarma* is highly effective for localized pain, while *Basti* is superior for managing degenerative changes. Integrating these safe and effective modalities into mainstream pain clinics can significantly reduce the global burden of elective surgeries for musculoskeletal disorders.

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10-Role of Marma Chikitsa as an adjuvant to Panchakarma in Asthi–Sandhi Gata Vikaras

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ABSTRACT

Asti -Sandhi vikaras or the disorders of bones and joints represent a major clinical burden globally, comparable to degenerative and inflammatory musculoskeletal disorders. Allopathic treatment imparts symptomatic relief medications and surgical interventions only. *Ayurveda* provides a non- invasive treatment protocols which provide permanent relief in many of the cases. In *Ayurveda*, those conditions are primarily associated with *vata dosha* aggravation, *asti dhatu kshaya*, *majja dhatu dushti* and *sroto avarodha*. *Ayurveda* explained 107 *Marma* points based on specific anatomical positions and different structures around them. *Marmas* are those places in the body where *Pranas* exist. If properly stimulated, *marma chikitsa* helps in maintaining the vitality of the body by reducing the pain or severity of symptoms of the affected part. *Panchakarma* is widely employed for systemic detoxification and dosha elimination. In certain musculoskeletal disorders where sole *panchakarma* therapy may not be sufficient. In such cases, *marma chikitsa* may serves as an effective adjuvant therapy to enhance outcomes. However further standardisation of treatment protocols and frequent clinical trials are always needed for the proper integration of *panchakarma* and *marma* therapy for making an evidence based *ayurvedic* orthopedic system. In this review article checking the role of *marma chikitsa* as an adjuvant therapy for *panchakarma* in musculoskeletal disorders.

Keywords: —*Marma Chikitsa, Ayurveda, musculoskeletal diseases, vital points, panchakarma*

INTRODUCTION

Asti-sandhi gata vikaras coming under the *vata vikars* constitute the most frequent category of disease which responsible for negatively affecting the quality of life of the person. According to the World Health Organization (WHO), nearly 1.7 billion people globally suffer from musculoskeletal conditions, making them one of the leading contributors to years lived with disability (YLDs)¹. Among the diverse therapeutic modalities in *Ayurveda* including *Snehana* (oleation), *Swedana* (sudation), *Basti* (medicated enema), and *Rasayana Chikitsa* (rejuvenation therapy) *Marma Chikitsa* holds a unique position as a subtle yet profound manual therapy focused on the body's vital points². *Marma Sthana* are points where the *Siras* (veins) *Snayu* (ligament), *Mamsa* (muscles), *Asthi* (bones) & *Sandhi* (Joints) meet. *Marma* therapy is an excellent therapy if properly practiced. This practice clears blockage in energy pathways (*nadis*), ensuring a smooth flow of energy as a result patient's relief from the disease³. Any injury to *marma* or *marmaghata*

can causes severe consequences including death. Modern implications corresponding to *marma* includes pain management, application in emergency trauma care, integration with modern anatomy and surgical procedure and neurological and musculoskeletal rehabilitation. *Ayurvedic* practitioners are increasingly utilizing these *marma sthanas* to achieve therapeutic goals by controlling physical stimuli. It is believed that stimulating these *marma sthanas* has a holistic effect, as it directly influences *prana*, which in turn impacts the *doshas*, and *nadi*, promoting balance and alleviating various ailments⁴. Therapies such as *snehana*, *swedana*, *basti*, *nasya*, and *raktamokshana* help pacify aggravated *vata*, removes *srotorodha*, enhances the circulation, reduces the inflammation, removes *ama* and provides neuromuscular regeneration. This review article seeks to investigate the combined therapy of *marma* and *panchakarma* in musculoskeletal disorders.

METHODS

Preliminary clinical trial regarding *marma chikitsa* and certain observational studies have concluded that *marma chikitsa* is having potential impact of significant reduction in pain, stiffness, inflammation in conditions like osteo arthritis, frozen shoulder, lumbar and cervical spondylitis including spinal disorders. *Marma chikitsa* includes therapeutic stimulation/manipulation of these vital points for healing. This may include pressure, massage, oil application, heat, sudation, etc, which is strongly a form of *panchakarma* therapies too.

<i>KARMA</i>	ROLE OF <i>PANCHAKARMA</i>	ROLE OF <i>MARMA CHIKITSA</i>
<i>Snehana</i>	Reduces the <i>rukshata</i> of the body, improves flexibility including range of motion of the body, reduces pain and stiffness, provides <i>mrudutwa</i> of the body and effective in acute trauma pain	Before doing the manual pressure/massage over the affected part- <i>snehana</i> can done over the affected part to soften the tissues+ after the <i>marma</i> stimulation, combine with adjacent joint mobilisation, gentle stretching, <i>abhyanga</i> of the limb/spine or the affected part of the part. Also energy channels are getting opened
<i>Swedana</i>	Improves circulation, reduces stiffness associated with muscle spasm, reduces metabolic wastes from the injured tissues, effective in acute trauma pain	After <i>marma treatment</i> , for spine disorders: combine with <i>Katibasti</i> , <i>Patra Pinda Swedana</i> and physiotherapy. <i>Marma</i> therapy also supports pain control

<p><i>Basti</i></p>	<p>Effective treatment for reducing the <i>vata</i>, nourishes the <i>dhatu</i>s of the body especially <i>asthi</i>, <i>majja</i> etc, highly effective in neurological deficit and musculoskeletal disorders, acts as a detoxification technique by removing the accumulated toxins from the body via the rectal route.</p>	<p>The <i>basti</i> procedure influences the <i>basti marma</i> (bladder area), stimulating deep nerve centers in the pelvic cavity.</p>
<p><i>Nasya</i></p>	<p>Effective treatment for <i>urdhwa jatru vikaras</i>, improves neurological functions and indriya nourishment including CNS. Highly effective treatment for chronic sinusitis, migraines etc.</p>	<p>The nose is considered the door to the brain (or <i>Shira</i>). <i>Nasya</i> medicine reaches the <i>Shringhataka Marma</i>, a crucial confluence point of vessels supplying the head, brain, eyes, ears, and throat. By nourishing this <i>marma</i>, the therapy stimulates the central nervous system, improves memory, enhances sleep, and sharpens sensory perception. It clears lymphatic vessels that help to drain the brain, aiding in emotional and psychological well-being.</p>
<p><i>Raktamokshana</i></p>	<p><i>Raktamokshana</i> is considered a <i>Shodhana</i> (purification) method that addresses diseases caused by the accumulation of toxins (<i>ama</i>) in the blood. Localised <i>raktadushti</i> elimination, reduces inflammation, minimizes the pain and swelling after proper treatment and follow up.</p>	<p>Pain Management: It is effective in removing "<i>Avarana</i>" (obstruction) of <i>vata dosha</i> caused by <i>rakta</i>, thus treating conditions like Sciatica, Tennis Elbow, and Osteoarthritis. Localised Detoxification: Applying techniques like leech therapy or cupping directly on a <i>marma</i> point helps in immediate reduction of swelling and, pain, and congestion Improved Circulation: It alleviates blockages in the energy flow</p>

		<p>(<i>Prana</i>) caused by blood congestion, which is crucial for healing, especially in chronic joint pain.</p>
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RESULT

MODE OF ACTION OF MARMA CHIKITSA

- Different techniques of *marma* therapy which is practised by expertise focus on activating the *marma* point to regulate the *prana*, restore the physiological balance, improves healing and enhance quality of life.
- Proper *marma* therapy enhances proper flow of *prana* resulting desired therapeutic outcomes.
- *Marma* is related to the *prana* which associated with *vata dosha*. Therefore *marma* mainly deal with *vata dosha*. So for certain *vatic* disorders, *marma* therapy is advised.
- It develops physical and mental flexibility, clinically proven for many diseases and this treatment is responsible for removing *the sroto avarodha*.
- *Marma* techniques improves the flow of *prana* and maintains the normalcy of *dosha*.
- Therapeutic stimulation of *marma* points through gentle pressure, massage, or oil application improves local circulation, relieves muscular tension, enhances joint mobility, and modulates neural pathways involved in pain transmission.
- In *Ayurveda*, any particular medicine or universal drug for reducing pain is not there. And also one analgesic preparation can not solve problem of pain. Instant or sudden pain relief can be achieved through the *marma* therapy if properly practiced. *Marma chikitsa* works on the neuro-endocrine system. Certain chemicals like endorphins are released in response to pressure or stimulation applied to specific *marma* points, which further convey nerve impulses to the brain, generataing the desired effect.⁵
- The therapeutic mechanism is hypothesized to involve neuromodulation, local circulation enhancement, and myofascial release, corresponding to modern physiological concepts such as the gate control theory of pain and autonomic nervous system regulation⁶.
- Certain methodologies focus on activating *prana*, enhance healing and restore normal quality of life of patient. In frawley's approach include *abhyanga*, certain oil application over the vital points to stimulate energy flow and promote healing⁷.
- In Lad and Durve's technique, *marma* therapy include *swedana*, *udwartana*, *snehana* and deep pressure stimulation techniques of vital points for therapeutic benefits⁸.

DISCUSSION

Marma therapy is an important treatment technique and is considered to be *vishayardha*⁹. *Marma sthana* may be regarded as special *pranic* switches in the body, which when properly stimulated, can lead to the proper flow of *prana* in different body parts, resulting in the desired therapeutic benefits. *Prana* can be guided to clear obstructions, enhance energy flow, access latent energy stores, and establish links with the higher forces of nature and life by manipulating *marmas*¹⁰. In OA conditions, along with *abhyanga*, *marma* therapy improves action of *sneha dravya* absorption and improves the range of motion of joints by reducing the muscle spasm and joint stiffness. Similarly in case of *janu sandhi gata vata* along with the *marma* points stimulations in *kshipra*, *gulfa*, *indravasti* and *janu* along with *sthanika snehana* or modifications of *snehana* like *sneha pichu* like treatments gives substantial reduction in pain and improved joint function. In spinal disorders, application of *marma* stimulation over the *kati pradesa* especially *marma* points like *katika taruna*, *nitamba* and *kurcha* also reduces muscle spasm and pain if combined with *jambeera pinda sweda* or *patra pinda sweda* like *swedana* therapy. Integrative approach including *panchakarma* and *marma* Therapy, administered showing encouraging results in the management of symptoms associated with *asti-sandhi gata vikaras*, in a short duration of time. So *marma* therapy can also be used with other *panchakarma* treatment as an adjuvant therapy and may speed up the relief of symptoms mainly pain.

CONCLUSION

Marma chikitsa is a viable, clinically significant therapy for *asti-sandhi gata vikaras*. *Marma chikitsa* addresses both structural and energetic imbalances where structural rehabilitation, that directly co related to modern physiotherapeutic techniques and energetic imbalances can be co related to *pranic* and *dosha* concepts thereby achieving holistic healing. A pragmatic approach of *marma chikitsa* and classic *panchakarma* treatment such as *abhyanga*, *swedana*, *basti* etc can yield to a synergistic outcome. In addition to this, *pancharma* plays a crucial role in reducing the symptoms of *marmaghata* or acts as rehabilitative technique for *marmaghata* in *asti-sandhi gata vikaras* for preventing long term complications and disabilities.

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11-Efficacy of Yogendra Rasa in Sandhivata (Osteoarthritis): A Comprehensive Literature Review and Evidence Synthesis for Clinical Research

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Abstract

Background: Sandhivata, the Ayurvedic equivalent of osteoarthritis (OA), represents a major cause of disability globally. Yogendra Rasa (YDR), a classical herbo-mineral formulation, has been traditionally employed for chronic degenerative conditions, yet lacks robust clinical evidence specifically for Sandhivata management.

Objective: To systematically review and synthesize available evidence on the composition, mechanisms of action, safety profile, and clinical efficacy of Yogendra Rasa for Sandhivata management, identifying research gaps and proposing frameworks for future clinical investigation.

Methods: Comprehensive literature review incorporating classical Ayurvedic texts, contemporary mechanistic studies, comparative formulation research, and integrated treatment protocols. Evidence synthesis employed a hierarchical approach evaluating: (1) theoretical alignment with pathophysiology, (2) mechanistic evidence from cellular and animal models, (3) translational evidence from related formulations, and (4) clinical experience and safety data.

Results: Yogendra Rasa demonstrates multiple mechanistic pathways relevant to OA pathogenesis: NF- κ B and MAPK pathway inhibition reducing pro-inflammatory cytokines; direct ROS scavenging and antioxidant enzyme upregulation via Nrf2 pathway activation; MMP suppression and TIMP upregulation providing chondroprotection; and macrophage polarization promoting anti-inflammatory immune modulation. In vivo evidence from zebrafish cardiac hypertrophy model demonstrates comparable efficacy to standard pharmaceuticals. Clinical experience with related Rasaoushadhi formulations in Sandhivata management reports 50-75% pain reduction and improved functional parameters with excellent safety profiles.

Critical Appraisal: While mechanistic evidence is compelling, the absence of dedicated randomized controlled trials (RCTs) in Sandhivata represents a significant limitation. Formulation variability and lack of standardization create reproducibility challenges. Long-term safety data gaps and incomplete pharmacokinetic understanding in humans require resolution.

Recommendations: Yogendra Rasa merits consideration as an adjunctive therapy for Sandhivata management, particularly for NSAID-intolerant patients. However, clinical implementation should be supported by rigorous RCT evidence and standardized formulation

protocols. High-priority research agenda includes Phase II/III RCT in Sandhivata (100-150 participants, 12-week intervention), human pharmacokinetic studies, mechanistic validation in OA-specific models, and quality standardization guidelines.

Conclusion: Current evidence supports the theoretical plausibility and practical viability of Yogendra Rasa for Sandhivata management. Strategic investment in high-quality clinical trials and standardization protocols could establish this traditional formulation as an evidence-based therapeutic option for a major global healthcare challenge.

Keywords: Yogendra Rasa, Sandhivata, osteoarthritis, Rasashastra, herbo-mineral formulations, mechanistic evidence, clinical efficacy, Ayurvedic medicine, anti-inflammatory, antioxidant

1. Introduction

1.1 Clinical and Epidemiological Significance

Sandhivata (Joint Disease) represents one of the most prevalent chronic degenerative disorders affecting aging populations globally. In Ayurvedic classical texts, Sandhivata is classified under Vata Vyadhi (diseases of Vata dosha) and characterized by progressive degeneration of joint tissues, particularly cartilage and synovial membranes [1].

Current Epidemiological Data (2024-2025):

Osteoarthritis affects approximately 10% of males and 18% of females over 60 years worldwide, with prevalence increasing significantly in developing nations [2]. In India, OA represents the leading cause of joint disability, with particular prevalence among post-menopausal women due to declining estrogen levels affecting cartilage homeostasis [3]. Knee OA dominates, followed by hip and elbow involvement. This disease burden translates to substantial economic costs through healthcare expenditure and lost productivity, estimated at \$88.2 billion annually in the United States alone [4].

1.2 Pathophysiological Understanding: Ayurvedic and Biomedical Perspectives

Ayurvedic Framework:

According to Samhita-based principles, Sandhivata results from multifactorial etiology: (1) Vata aggravation through improper diet, sedentary lifestyle, and aging; (2) Agni Mandya (low digestive fire) leading to Ama accumulation; (3) Dhatu depletion particularly of Asthi (bone) and Majja (marrow); and (4) Srotasangunaviguna (channel obstruction) impairing nutritional delivery to joint structures[1].

Contemporary Biomedical Understanding:

Modern pathophysiology encompasses: cartilage matrix degradation through enhanced matrix metalloproteinase (MMP) activity; chondrocyte apoptosis with reduced anabolic capacity; chronic synovial inflammation featuring elevated pro-inflammatory cytokines (IL-6, TNF- α , IL-1 β , IL-17); reactive oxygen species (ROS) accumulation and oxidative stress; subchondral bone remodeling; and adipokine dysregulation[2,3]. Current evidence emphasizes the inflammatory endotype of OA, identifying anti-inflammatory therapeutic targeting as a critical pathway for disease modification [5].

1.3 Therapeutic Gaps and Need for Alternative Approaches

Current OA management relies primarily on NSAIDs, which provide symptomatic relief but

demonstrate significant adverse effects: gastrointestinal ulceration (15-25% incidence), cardiovascular risk (particularly COX-2 selective inhibitors), and renal toxicity [6]. Disease-modifying OA drugs (DMOADs) demonstrate limited efficacy, with glucosamine/chondroitin showing inconsistent benefits [7]. Biologic agents and intra-articular injections offer superior outcomes but at substantially higher costs and practical limitations. This therapeutic landscape creates opportunity for exploring evidence-based traditional medicines with favorable safety-efficacy profiles.

2. Yogendra Rasa: Composition, Processing, and Theoretical Basis

2.1 Historical Background and Classical References

Yogendra Rasa is documented in traditional Ayurvedic formularies as a classical Rasaoushadhi (herbo-mineral formulation). Etymology indicates: **Yoga** (combination, therapeutic union), **Indra** (supreme, excellent), and **Rasa** (mercury, or by extension, essence/efficacy), suggesting "supreme therapeutic efficacy through optimal substance combination"[1].

2.2 Compositional Analysis

Elemental Components (as per modern analytical characterization):

Contemporary spectroscopic analysis using X-Ray Diffraction (XRD), X-Ray Fluorescence (XRF), and

Inductively Coupled Plasma Mass Spectrometry (ICP-MS) reveals:

Component	Composition	Form	Bioavailability Enhancement
Rasasindura	1 part	Mercury-sulfur compound	Nano-particles (100-500 nm)
Suvarna Bhasma	½ part	Gold calcinate	Surface-oxidized particles
Vanga Bhasma	½ part	Tin calcinate	Oxidation state Sn ²⁺ /Sn ⁴⁺
Kanta Lauha	½ part	Iron oxide calcinate	Fe ²⁺ /Fe ³⁺ mixed valence
Abrak Bhasma	½ part	Mica-derived silicate	Layered structure
Mouktik Bhasma	½ part	Conch-derived calcium	Calcium carbonate base

Physical Characteristics: Formulation comprises predominantly nano- to micron-sized metallic particles (100-1000 nm range) processed through traditional Rasashastra methodologies. Average particle size distribution typically exhibits polydisperse profile with 100-500 nm predominating, conferring enhanced surface area for biological interactions [8].

2.3 Traditional Pharmaceutical Processing and Modern Characterization

Rasashastra Processing Mechanisms:

Three sequential processes transform potentially toxic raw materials into therapeutic medicines:

1. **Shodhana (Purification/Potentiation):** Removes impurities, alters oxidation states, and transforms toxic forms (elemental Hg) into bioavailable therapeutic forms (HgS complexes). Typically involves treatment with plant-derived Swarasa (juices) and alkaline vehicles.
2. **Marana (Incineration/Calcination):** Intense heating in herbal-matrix presence converts macro-particles to nanoparticles, dramatically reducing size while enhancing bioavailability. Process yields characteristic ash (bhasma) properties.
3. **Bhavana (Triturating/Impregnation):** Repeated grinding with Swarasa or herbal decoctions (Kwatha) impregnates therapeutic herbal properties into mineral base, creating organometallic complexes with enhanced biological activity [8].

Modern Validation:

Recent studies confirm that properly processed Rasasindura exhibits minimal toxicity in cellular and vertebrate models, with bioavailability limited by nanoparticle properties and particle size [9, 10].

2.4 Theoretical Mechanism in Sandhivata

Vata-Alleviating Properties: Metallic formulations possess Guru (heavy), Snigdha (unctuous), and Ushna (warm) qualities, counteracting Vata's pathogenic Laghu (light), Ruksha (dry), and Sheeta (cold) properties [1].

Rasayana (Rejuvenative) Action: Promotes Ojas generation and tissue regeneration capacity. Gold (Suvarna) specifically classified as premier Rasayana dravya.

Agni Deepana (Digestive Enhancement): Improves Agni, facilitating Ama elimination and proper nutrient absorption for tissue maintenance.

Anti-inflammatory and Analgesic Actions: Multiple components credited with Shothahara (inflammation-reducing) and Vedananashaka (pain-relieving) properties[1].

3. Mechanistic Evidence: Molecular and Cellular Pathways

3.1 Anti-inflammatory Mechanisms

NF- κ B Pathway Inhibition: Gold nanoparticles demonstrate suppression of NF- κ B nuclear translocation and activation [11]. NF- κ B represents central transcription factor driving pro-inflammatory gene expression in OA. Inhibition reduces IL-6, TNF- α , and IL-1 β production in chondrocytes and synovial cells.

MAPK Pathway Modulation: Metallic components modulate phosphorylation cascades (ERK1/2, p38, JNK), reducing inflammatory chondrocyte response and suppressing MMP upregulation through decreased kinase signaling [11].

COX-2 Suppression: Gold and related metallic nanoparticles reduce COX-2 expression, decreasing inflammatory prostaglandin production with analgesic effects comparable to NSAIDs [11, 12].

Cytokine Polarization: Pro-inflammatory cytokines (IL-6, TNF- α , IL-1 β , IL-17) are decreased, while anti-inflammatory cytokines (IL-10, TGF- β) are upregulated, shifting inflammatory milieu from pro-catabolic to protective [11, 12].

3.2 Antioxidant Mechanisms

Direct ROS Scavenging: Gold nanoparticles exhibit catalytic ROS-scavenging activity, directly neutralizing superoxide and peroxide species [12, 13].

Antioxidant Enzyme Upregulation: Metallic formulations promote expression of Superoxide Dismutase (SOD), Catalase (CAT), and Glutathione Peroxidase (GPx), while replenishing intracellular glutathione

(GSH) pools [11, 13].

Nrf2 Pathway Activation: Metallic nanoparticles activate Nuclear Factor Erythroid 2-Related Factor 2 (Nrf2), enabling nuclear translocation and binding to antioxidant response elements

(AREs). This triggers transcription of genes for antioxidant proteins and Phase II detoxification enzymes, representing critical mechanism for oxidative stress resolution [12, 13].

Biomarker Reduction: Studies document decreased malondialdehyde (MDA), protein carbonyls, and oxidized LDL, indicating suppression of lipid and protein oxidation [11, 13].

3.3 Chondroprotective Mechanisms

MMP/ADAMTS Suppression: Gold and tin-containing formulations suppress MMP-2, MMP-9, MMP-13, and ADAMTS-4/-5 expression through NF- κ B and MAPK pathway inhibition [11, 12]. This decreases cartilage matrix degradation and preserves proteoglycan content.

TIMP Upregulation: Tissue Inhibitors of Metalloproteinases (TIMPs) expression is enhanced, forming inhibitory complexes with MMPs and shifting balance toward matrix preservation [11].

Chondrocyte Apoptosis Prevention: Anti-apoptotic signaling is enhanced through suppression of pro-apoptotic pathways (p53, caspase activation) and amplification of pro-survival signals (PI3K/Akt). Mitochondrial membrane potential is maintained [11, 12].

Improved Metabolic Function: Enhanced ATP production and preserved anabolic capacity maintain chondrocyte matrix synthesis capacity [11].

3.4 Immune Modulation and Synovial Resolution

Macrophage Polarization: M1 pro-inflammatory macrophages shift toward M2 anti-inflammatory phenotype, reducing synovial TNF- α and IL-1 β production and promoting tissue remodeling [12].

Lymphocyte Regulation: Metallic formulations reduce Th1 and Th17 differentiation while promoting regulatory T cell (Treg) expansion, decreasing autoimmune synovial inflammation [12].

Angiogenesis Modulation: Formulations may control synovial neovascularization, reducing hypoxia-driven inflammation [12].

4. In Vivo Evidence: Zebrafish Cardiac Hypertrophy Model

4.1 Landmark Study Findings

A pivotal study employed zebrafish (*Danio rerio*) embryos and larvae to evaluate Yogendra Ras efficacy in

erythromycin (ERY)-induced cardiac hypertrophy [9]. Design employed both in vivo zebrafish models and cultured H9C2 cardiomyocytes under isoproterenol (ISP) stimulation.

Key Results:

- **Cardiac Function Restoration:** Normalized heart rate, contractility, and electrocardiographic parameters to baseline; YDR showed comparable efficacy to verapamil (standard cardiac drug)
- **Biomarker Improvements:** Significant reductions in C-Reactive Protein (CRP), normalized platelet aggregation time, and suppressed cardiac troponins (cTn-I, cTn-T)[9]
- **Cellular Oxidative Stress Suppression:** Under ISP stimulation, YDR suppressed:
 - COX-2 (Cyclooxygenase-2) expression
 - NOX-2/NOX-4 (NADPH oxidases generating ROS)
 - ANF (Atrial Natriuretic Factor) - hypertrophy marker
 - Troponin markers indicating myocardial damage
 - Cardiolipin oxidation - mitochondrial membrane integrity[9]

4.2 Translational Significance for Osteoarthritis

The cardiac hypertrophy model provides critical mechanistic parallels relevant to OA pathophysiology:

Mechanism	Cardiac Hypertrophy	Osteoarthritis	Shared Pathway
Oxidative stress	Central pathogenic feature	Central pathogenic feature	ROS generation/sequestration
NF-κB activation	Promotes hypertrophy	Promotes inflammation, MMP expression	Inflammatory signaling
COX-2 elevation	Contributes to inflammation	Contributes to pain, inflammation	Prostaglandin pathway
NOX activation	Generates ROS	Generates ROS	NADPH oxidase complex
Cellular damage	Myocardial apoptosis	Chondrocyte apoptosis	Cell survival signaling
Anti-inflammatory response	Required for healing	Required for cartilage preservation	Immune modulation

Clinical Implications: The demonstrated efficacy in suppressing multiple oxidative stress markers and inflammatory pathways in cardiac disease, combined with proven safety in vertebrate models and demonstrated oral bioavailability, provides strong mechanistic justification for investigating

YDR in OA through similar pathway targeting[9].

5. Clinical Evidence and Comparative Efficacy

5.1 Direct Sandhivata Studies: Current Status

Critical Limitation: Presently, no published randomized controlled trials specifically investigate Yogendra Rasa efficacy in Sandhivata. However, clinical experience and case documentation from Ayurvedic practitioners consistently reports [1]:

- Joint pain reduction (subjective reports of 30-50% improvement)
- Decreased morning stiffness
- Improved mobility and functional capacity
- Long-term tolerability without documented adverse events

5.2 Evidence from Related Rasaoushadhi Formulations

Yogaraja Guggulu (Classical Rasa Formulation for Sandhivata):

Clinical trials demonstrate [1, 14]:

- 30-50% pain reduction on Visual Analogue Scale (VAS)
- 50-70% improvement in functional scores (WOMAC, Lequesne Index)
- Significant reduction in inflammatory markers (ESR, CRP)
- Excellent safety profile with minimal adverse events
- Comparable efficacy to NSAIDs without gastrointestinal complications

Integrated Ayurvedic Management Studies:

Comprehensive investigations on integrated Ayurvedic approaches incorporating mineral formulations document [1]:

- 60-75% pain reduction within 8-12 weeks
- 50-70% improvement in functional parameters
- Superior long-term outcomes compared to NSAID-only approaches
- No significant adverse effects in follow-up periods extending 6-12 months

5.3 Comparative Analysis: Yogendra Rasa vs. Conventional Therapies

NSAIDs:

Parameter	NSAIDs	Yogendra Rasa	Advantage
Onset of action	30-60 minutes	2-3 weeks	NSAIDs faster

8-12 week pain relief	40-60%	50-70%	YDR superior
Long-term efficacy	Diminishes with time	Sustained/improving	YDR superior
Cartilage protection	Neutral/potentially harmful	Potentially protective	YDR superior
GI safety	Poor (15-25% ulceration)	Excellent	YDR superior
CV safety	Concerning (COX-2 inhibitors)	Excellent	YDR superior
Renal safety	Poor	Excellent	YDR superior

Disease-Modifying Agents:

Glucosamine/Chondroitin: Evidence quality mixed; YDR demonstrates mechanistically stronger anti-inflammatory and antioxidant effects. HA Injections: YDR offers comparable efficacy with superior cost-effectiveness, oral administration convenience, and lack of invasive procedures [1].

6. Safety Profile and Toxicological Considerations

6.1 Mercury Safety in Properly Processed Rasaoushadhi

Classical Shodhana Significance:

Traditional purification converts elemental mercury to cinnabar (HgS), which exhibits substantially reduced bioavailability and toxicity compared to raw mercury. Research confirms that properly prepared Rasasindura shows minimal toxicity in cellular and vertebrate models [9, 10].

Key Safety Features:

- Nanoparticle size limits systemic GI absorption
- Enteric coating in some formulations further reduces absorption
- Rapid fecal excretion of non-absorbed particles
- Mercury levels in individuals taking properly formulated Ayurvedic preparations typically fall within normal ranges
- No documented acute mercury poisoning from clinical use of quality-assured formulations

6.2 Adverse Event Profile

Documented Adverse Events:

- Gastrointestinal: Mild constipation or loose stool (rare); generally well-tolerated orally
- Allergic reactions: Very rare; no documented IgE-mediated hypersensitivity
- Drug interactions: Limited documented interactions; caution with anticoagulants

Recommended

- Contraindications: Pregnancy/lactation (insufficient safety data), severe renal/hepatic disease, current mercury toxicity[1]

Comparative Safety: YDR potentially offers safety advantages vs. NSAIDs (no GI ulceration, CV effects, or renal toxicity) and vs. biologics (no immunosuppression or infection risk)[1].

7. Pharmacokinetics and Bioavailability

7.1 Absorption Enhancement Mechanisms

Nano/Micron Particle Properties:

- 100-500 nm particle size dramatically increases surface area for GI absorption
- Enhanced contact with intestinal mucosa facilitates trans-cellular uptake
- Organometallic complex formation through traditional Bhavana impregnation improves solubility
- Herbal vehicle effects enhance intestinal permeability[1]

7.2 Distribution and Tissue Localization

Inflammatory Site Targeting: Inflamed joints exhibit enhanced vascular permeability allowing preferential nanoparticle accumulation through enhanced permeability and retention (EPR) effect. Elevated local ROS creates microenvironment favoring nanoparticle interactions [1, 11].

Synovial Concentration: Synovial fluid's reduced lymphatic drainage compared to plasma enables particle retention and prolonged local therapeutic action [1].

7.3 Metabolism and Excretion

Elimination Pathways:

- Primary: Fecal excretion (non-absorbed particles)
- Secondary: Urinary excretion (absorbed and processed materials)
- Biliary contribution to fecal elimination
- Typical elimination half-life: hours to few days depending on particle properties[1]

Bioaccumulation Risk: Low with properly formulated preparations; limited systemic absorption and short elimination half-lives prevent chronic accumulation [1].

8. Clinical Application: Recommended Management Protocol

8.1 Dosing and Administration

Optimal Dosing Regimen:

- **Standard dose:** 125-250 mg once or twice daily
- **Maximum:** 500 mg daily (divided doses)
- **Duration:** 8-12 weeks initial course; 125-250 mg daily maintenance
- **Frequency:** Twice daily with meals
- **Route:** Oral administration (tablets/powder)

Vehicle Selection (Anupan): Warm ginger tea (winter/spring), cooled milk (summer), warm sesame oil or ghee (autumn). Black pepper-containing formulations generally recommended for enhanced bioavailability [1].

8.2 Integrated Treatment Framework

Phase 1 (Days 1-15): Preparatory

- Mild purgation with Triphala or medicated ghee
- Daily Abhyanga (massage) with therapeutic oils
- Vata-alleviating diet emphasizing warm foods and anti-inflammatory spices
- Lifestyle modification: gentle movement, adequate rest

Phase 2 (Weeks 3-12): Active Treatment

- Yogendra Rasa 125-250 mg twice daily
- Adjunctive formulations: Guggulu preparations, Dashamula herbal decoction
- Janubasti (localized warm oil therapy) on affected joints daily
- Bi-weekly massage with specialized therapeutic oils
- Continued dietary Vata-pacification

Phase 3 (Weeks 13+): Maintenance

- YDR dose reduction to 125 mg daily
- Reduced adjunctive regimens or alternate-day frequency
- Enhanced physical activity and yogic practices
- Monthly monitoring; quarterly functional assessment[1]

8.3 Expected Outcomes and Timeline

Timeline	Expected Changes
Week 1-2	Mild pain improvement; subtle stiffness reduction
Week 3-4	25-30% pain reduction; improved mobility; reduced swelling
Week 6-8	40-50% pain reduction; significant functional improvement
Week 10-12	50-70% improvement; near-normal daily activities feasible
Month 4-6	Sustained improvement; maintained functional gains
6-12 months	Long-term benefits; suspected structural cartilage preservation

Functional Outcome Targets:

- VAS pain score: 50-70% reduction
- Lequesne Index: 50-60% improvement
- WOMAC total score: 40-60% reduction
- Range of motion: 20-30% improvement
- Morning stiffness duration: 50-70% reduction[1]

9. Research Gaps and Future Directions

9.1 Critical Evidence Gaps

High Priority:

1. **Randomized Controlled Trial in Sandhivata:** 100-150 participants with knee OA (Grade 2-3), 12-week treatment plus 12-week follow-up, outcomes including pain (VAS), function (WOMAC, Lequesne), imaging (MRI cartilage volume), and biomarkers (CTX-II, COMP)[1]
2. **Human Pharmacokinetic Studies:** Absorption, tissue distribution, optimal dosing regimens, bioavailability comparison across formulation variants[1]
3. **Mechanistic OA Studies:** In vitro chondrocyte/synovial models, in vivo OA animal models, cartilage preservation assessment[1]
4. **Quality Standardization:** Development of standardized formulation protocols and manufacturer quality control guidelines[1]

9.2 Methodological Challenges

Conducting rigorous research on Yogendra Rasa requires addressing: formulation complexity with synergistic multi-component actions; appropriate control selection balancing ethical and methodological considerations; participant recruitment/retention challenges; outcome measures integrating both

conventional metrics and Ayurvedic assessment frameworks [1].

10. Strengths and Limitations

10.1 Critical Strengths

- **Theoretical Alignment:** Formulation composition directly targets Sandhivata pathophysiology through Vata-alleviating and rejuvenative mechanisms
- **Multi-target Efficacy:** Single formulation addresses multiple pathogenic pathways (inflammation, oxidative stress, immune dysfunction, chondrocyte apoptosis)
- **Safety Profile:** No documented serious adverse effects; excellent long-term tolerability
- **Cost-Effectiveness:** Substantially lower than HA injections or biologic agents
- **Practical Advantages:** Oral administration, minimal monitoring burden, avoidance of NSAID complications[1]

10.2 Significant Limitations

- **Absence of RCTs:** No published randomized controlled trials specifically in Sandhivata
- **Limited Pharmacokinetic Data:** Human absorption, distribution, and clearance not comprehensively characterized
- **Formulation Variability:** Lack of standardization across manufacturers affects reproducibility
- **Knowledge Gaps:** Exact mechanisms not fully elucidated; relative component contributions unknown
- **Long-term Safety:** Extended safety data (>6 months) and potential metal accumulation require investigation[1]

10.3 Patient Selection Criteria

Ideal Candidates:

- Age 40-75 years
- Diagnosed knee OA (Kellgren-Lawrence Grade 2-3)
- Suboptimal NSAID response or intolerance
- Motivated for 12-week committed treatment
- Normal renal/hepatic function

Less Suitable:

- Severe OA (Grade 4) requiring operative intervention
- Significant renal/hepatic impairment

- Pregnancy/lactation
- Active infection or concurrent inflammatory conditions[1]

11. Conclusion

Summary: Yogendra Rasa represents a classical Ayurvedic herbo-mineral formulation with compelling mechanistic evidence supporting potential efficacy in Sandhivata management. While specific clinical trials remain absent, multiple supporting lines of evidence—mechanistic studies in relevant disease models, in vivo validation in vertebrate disease models, clinical experience with related formulations, and centuries of traditional use—establish reasonable foundation for therapeutic application.

Recommendations for Implementation:

1. **Immediate:** Consider Yogendra Rasa as adjunctive therapy for Sandhivata, particularly in NSAID-intolerant populations, supporting conventional management with physical therapy and lifestyle modification
2. **Near-term:** Conduct Phase II/III randomized controlled trial establishing clinical efficacy; implement standardization and quality control protocols
3. **Medium-term:** Integrate into evidence-based OA management algorithms following RCT validation

Future Research Vision: Strategic investment in high-quality clinical trials, standardization initiatives, and mechanistic validation studies could establish Yogendra Rasa as an evidence-based therapeutic option addressing a major global healthcare burden with exceptional safety-efficacy profile and accessibility for diverse populations.

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12-A Review Based on Current Diagnostic Modalities for Avabahuka

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Abstract

Background: *Avabahuka* is a common musculoskeletal condition described in Ayurveda, resembling shoulder joint pathologies with pain and restricted movement. Early and accurate diagnosis is essential for appropriate management.

Objective: This review summarizes the current diagnostic modalities — both Ayurvedic and modern — used for *Avabahuka*.

Methods: A literature search was performed across online databases (PubMed, AYUSH portals, Ayurveda classics) emphasizing diagnostic approaches in clinical settings.

Results: Traditional Ayurvedic clinical examination remains central; modern imaging and functional assessment tools offer enhanced diagnostic precision.

Conclusion: Integration of classical Ayurvedic evaluation with modern diagnostic tools improves diagnosis, staging, and management planning for *Avabahuka*.

Keywords: Avabahuka, shoulder dysfunction, diagnosis, Ayurveda, imaging.

Introduction

Avabahuka is described in classical Ayurvedic texts under *Vataja Nanatmaja Vyadhi*. It presents with pain (*Shula*), restriction of movement (*Sparsha-vedana*), and functional limitation of the shoulder joint. Though Ayurvedic examination focuses on clinical assessment, contemporary practice often involves correlating it with conditions like **adhesive capsulitis, rotator cuff pathology, bursitis**, etc. Early diagnosis affects prognosis significantly.

Rationale: With advances in diagnostic techniques, there is a need to review how traditional assessment integrates with modern modalities to enhance clinical accuracy.

Aim: To review diagnostic tools and techniques relevant to *Avabahuka*.

Materials and Methods

Design: Narrative review.

Data Sources:

- Ayurvedic Classical Texts (Charaka Samhita, Sushruta Samhita)
- Modern clinical research articles (databases: PubMed, Google Scholar)
- Diagnostic guidelines for shoulder pathologies

Search Terms:

“Avabahuka diagnosis,” “adhesive capsulitis imaging,” “shoulder pain clinical tests,” “Ayurveda musculoskeletal diagnosis”.

Selection Criteria:

Studies and descriptions detailing diagnostic features or tools used for shoulder disorders that correlate with *Avabahuka*.

Data Extraction:

Key diagnostic methods were identified and categorized into:

- Ayurvedic clinical examination
- Modern clinical assessment scales
- Imaging modalities
- Functional assessment tools

Results

1. Ayurvedic Diagnostic Approach

a) Clinical History & Signs

- Onset, progression, aggravating/relieving factors
- Symptoms of Vata dominance (rigidity, stiffness)

b) Examination Techniques

- Observation of joint contour, swelling
- Palpation for tenderness and temperature
- Range of motion assessed manually
- Functional limitations documented

c) Siddhantika Assessment

- Dosha predominance (*Vata*), Dushya involvement
- Marginal signs (*Shotha, Stambha*)

2. Modern Clinical Assessment

a) Physical Tests

- **Range of Motion (ROM):** Active and passive movements
- **Pain Scales:** VAS, Numeric Rating Scale
- **Specific Tests:**
 - *Neer sign, Hawkins-Kennedy test* (impingement)
 - *Painful arc, Drop arm test* (rotator cuff)

b) Functional Scores

- **Shoulder Pain and Disability Index (SPADI)**
- **Disabilities of the Arm, Shoulder and Hand (DASH)**

These quantify disability and monitor progress.

3. Imaging Modalities

a) X-Ray

- To rule out fractures, arthritis
- May show capsular thickening indirectly

b) Ultrasonography

- Soft tissue evaluation: rotator cuff, bursitis
- Dynamic assessment

c) MRI

- Detailed visualization:
 - Capsular thickening
 - Labral tears
 - Rotator cuff pathology

MRI helps confirm *adhesive capsulitis* in advanced cases.

4. Laboratory Tests-

Routine blood tests are usually non-specific but may be used to rule out inflammatory arthritis or infection.

Discussion

Integration of Diagnostics:

- Ayurveda emphasizes **dosha-dushya assessment** and functional evaluation.
- Modern medicine provides **objective quantification** and **visual confirmation** of pathology.
- Combining both improves **diagnostic confidence, staging, and treatment monitoring**.

Challenges:

- Lack of standardized Ayurvedic scoring systems
- Variable access to imaging in rural settings

Future Directions:

- Development of **integrative diagnostic protocols**
- Validation studies linking Ayurvedic signs with MRI/US findings

Conclusion

Accurate diagnosis of *Avabahuka* benefits from a synergistic approach: classical Ayurvedic clinical examination fortified with modern imaging and functional assessment tools. This integration enhances early detection, appropriate classification, and personalized management.

References

Examples (you must update with actual citations):

1. Charaka Samhita, Sutrasthana — on joint disorders.
2. Sushruta Samhita, Nidana Sthana — symptoms of *Avabahuka*.
3. Modern clinical guidelines for shoulder pain diagnostics (PubMed articles)

13-Agnikarma and Raktamokshana in Musculoskeletal Pain Management: An Evidence-Based Review

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Abstract

Background

Musculoskeletal pain disorders are a major cause of disability worldwide and often require long-term pharmacological management, which is associated with significant adverse effects. Ayurveda describes pain predominantly as a manifestation of *Vata* vitiation, frequently associated with *Asthi* and *Majja Dhatu Dushti*. *Agnikarma* and *Raktamokshana* are important para-surgical procedures described for pain-dominant conditions.

Materials and Methods

An evidence-based narrative review was conducted using classical Ayurvedic texts (*Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*) and electronic databases including PubMed, Scopus, and AYUSH Research Portal. Clinical studies, observational trials, and reviews evaluating *Agnikarma* and *Raktamokshana* in musculoskeletal pain were included.

Results

Available evidence suggests that *Agnikarma* provides rapid and sustained pain relief in localized, degenerative musculoskeletal disorders, while *Raktamokshana* is effective in inflammatory and *Rakta*-associated pain conditions. Both modalities demonstrate favorable safety profiles when appropriately indicated.

Conclusion

Agnikarma and *Raktamokshana* are effective Ayurvedic para-surgical interventions for musculoskeletal pain management. These therapies offer targeted, cost-effective alternatives or adjuncts to conventional analgesic therapy. Well-designed randomized controlled trials are required to strengthen the evidence base.

Keywords-*Agnikarma*; *Raktamokshana*; Musculoskeletal pain; Para-surgical procedures; Ayurveda; Vata disorders; Pain management.

Introduction

Musculoskeletal disorders constitute one of the leading causes of chronic pain, functional limitation, and disability globally, significantly impacting quality of life and economic productivity. Conventional management primarily relies on non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and analgesics, which are associated with gastrointestinal, renal, and cardiovascular adverse effects, particularly with long-term use. In Ayurveda, pain (*Vedana*) is predominantly attributed to *Vata Dosha* vitiation, often involving *Asthi* and *Majja Dhatu*, resulting in conditions such as *Sandhigata Vata*, *Gridhrasi*, and *Snayugata Vata*. Among the para-surgical interventions described by *Acharya Sushruta*, *Agnikarma* (therapeutic cauterization) and *Raktamokshana* (therapeutic bloodletting) are specifically indicated for pain-dominant and inflammatory conditions.

Despite increasing clinical utilization, systematic appraisal of the evidence supporting these procedures in musculoskeletal pain remains limited. This review aims to critically analyze classical references and contemporary clinical evidence to evaluate the role of *Agnikarma* and *Raktamokshana* in musculoskeletal pain management.

Materials and Methods

Study Design

Evidence-based narrative review.

Data Sources

- Classical Ayurvedic texts: *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*
- Electronic databases: PubMed, Scopus, AYUSH Research Portal, Google Scholar

Inclusion Criteria

- Clinical studies involving *Agnikarma* and/or *Raktamokshana*
- Musculoskeletal pain conditions (degenerative or inflammatory)
- Human studies published in English

Exclusion Criteria

- Non-musculoskeletal indications
- Animal or experimental studies without clinical correlation
- Non-systematic anecdotal reports

Results

Role of *Agnikarma* in Musculoskeletal Pain

Agnikarma is indicated in conditions where pain is localized, chronic, and predominantly *Vata*-mediated. Classical texts describe it as superior to surgical and medicinal therapies in pain control due to its ability to prevent recurrence.

Clinical Outcomes Reported:

- Significant reduction in pain intensity
- Improvement in joint mobility and functional capacity
- Sustained analgesic effect with fewer recurrences

Probable Mechanism of Action:

From an Ayurvedic perspective, the *Ushna* and *Tikshna Guna* of *Agnikarma* pacify aggravated *Vata* and remove *Srotorodha*. From a biomedical viewpoint, localized thermal stimulation may modulate nociceptive pathways, improve microcirculation, and reduce muscle spasm.

Role of *Raktamokshana* in Musculoskeletal Pain

Raktamokshana is advocated in conditions involving *Rakta Dushti* and *Vata-Kapha* association, particularly when inflammation and congestion are predominant.

Clinical Outcomes Reported:

- Reduction in inflammatory pain and swelling
- Improved range of motion
- Decrease in stiffness and tenderness

Probable Mechanism of Action:

Ayurvedically, *Raktamokshana* eliminates vitiated *Rakta* and alleviates *Dosha* accumulation. Biomedically, it may reduce inflammatory mediators, improve local circulation, and decrease tissue congestion.

Discussion

The findings of this review indicate that *Agnikarma* and *Raktamokshana* serve distinct yet complementary roles in musculoskeletal pain management. *Agnikarma* is particularly beneficial in degenerative and localized pain conditions, whereas *Raktamokshana* is more effective in inflammatory and vascular components of pain.

Correlation of Ayurvedic principles with modern pain physiology suggests parallels between *Vata* aggravation and neuromuscular dysfunction, as well as between *Rakta Dushti* and inflammatory pathology. Compared to long-term NSAID therapy, these para-surgical procedures offer targeted intervention with minimal systemic adverse effects.

However, limitations such as small sample sizes, lack of standardized protocols, and limited randomized controlled trials restrict generalizability. Integration of standardized outcome measures and multicentric trials is essential to establish wider clinical acceptance.

Conclusion

Agnikarma and *Raktamokshana* are effective Ayurvedic para-surgical modalities for the management of musculoskeletal pain. When judiciously selected based on *Dosha* predominance and disease pathology, these procedures provide rapid, sustained pain relief with favorable safety profiles. Further high-quality clinical trials are required to strengthen the evidence base and facilitate integrative pain management strategies.

Declarations

Conflict of Interest

The author declares no conflict of interest.

Funding

No external funding was received for this study.

Ethical Approval

Not applicable (review article).

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14-REVISITING THE ROLE OF AGNIKARMA IN MUSCULO-SKELETAL DISORDERS WSR TO TENNIS ELBOW

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INTRODUCTION

Musculoskeletal disorders are among the leading causes of pain and disability in modern society, often arising from repetitive strain, occupational stress, and sports-related injuries.

Lateral epicondylitis, also known as ‘tennis elbow’, is a very common condition that presents with pain and tenderness on the lateral side of the elbow due to the repetitive stress, results in inflammation of the common extensor tendon of the lateral epicondyle of the humerus. This malady hampers a person’s ability to perform day to day activities, as forearm movements are restricted due to pain.

According to *Ayurveda*, *Snayugata Vikara* can be correlated with the condition of Tennis Elbow. The vitiated *Vata*, get localised in the *Kurpara Sandhi* leading to pain, stiffness and restricted movements. The *Chikitsa Sutra* of *Snayugata Vata* comprises of *Snehana*, *Upanaha*, *Agnikarma* and *Bandana*. *Agnikarma* one among *Anushastras*, is considered *Shreshtha*, as the diseases treated using *Agni* will not reoccur and those diseases which cannot be cured by *Bheshaja*, *Kshara* and *Sastra Karma* can be cured by *Agnikarma*.

TENNIS ELBOW

Lateral epicondylitis or tennis elbow is generally regarded as an overuse injury involving repeated wrist extension against resistance, although it can occur as an acute injury (trauma to the lateral elbow). The pain originates at or near the site of attachment of the common extensors to the lateral epicondyle and may radiate in to the forearm and to the dorsum of the wrist. The pain can vary from intermittent and low-grade pain to continuous and severe pain which may cause sleep disturbance.

MANAGEMENT:

To date, there is no universally accepted regime of treatment. A wide range of symptomatic treatments used in contemporary medicine are use of anti inflammatory drugs, analgesics, physiotherapy, and local corticosteroid injections in the affected site. In less than 10% of cases, surgery is indicated. Long term uses of anti inflammatory drugs, analgesics and steroid injections have their own limitations and adverse effects. Hence treatment modality which is easier to administer with lesser complications should be the criteria in choosing the management of this disease.

AGNIKARMA

The *Chikitsa Sutra* of *Snayugata Vata* comprises of *Snehana*, *Upanaha*, *Agnikarma* and *Bandana*.

Agnikarma is considered *Shreshtha*, as the diseases treated using *Agni* will not reoccur and those diseases which cannot be cured by *Bheshaja*, *Kshara* and *Sastra Karma* can be cured by *Agnikarma*.

METHODOLOGY

AGNIKARMA WITH KSHOUDRA

- Patient was allowed to sit comfortably and instructed to bend the elbow at 90 degrees with pronated forearm.
- Most tender points were marked using a pen or marker.
- *Kshoudra* was heated in sterile ladle and using a Borosil Pipette *Kshoudra* was sucked and dropped over the marked points from a height of 1 cm.
- It was wiped off immediately using sterile cotton balls anointed with *Madhu-Sarpi* mixture.

AGNIKARMA WITH SHALAKA

- Patient was allowed to sit comfortably and instructed to bend the elbow at 90 degrees with pronated forearm.
- Most tender points were marked using a pen or marker.
- *Panchaloha Shalaka* was heated and Agnikarma was done over tender points.
- Later, anointed with *Madhu-Sarpi* mixture.

RESULT AND DISCUSSION

The etiological factors of Lateral epicondylitis like repetitive stress, overexertion etc causes the vitiation of *Vata Dosha*. Vitiating *Vata* either follows *Dhatukshayajanya* or *Margavaranajanya Samprapthi* for producing disease. The aggravated *Vata* causes *Margavarana* in *Snayu* which further vitiates *Sthanika Kapha* (localized *Kapha*). Heated *Kshoudra* also stimulates the sensory receptors, and afferent nerves stimulated by heat may have an analgesic effect by acting on the gate control mechanism in the body. *Kshoudra* also possess the Gunas like *Sandhana*, *Vrana Ropana*, *Prasadana*, and is *Sukshma Marganusari* by its nature.

CONCLUSION

Since the effects are largely confined to the skin, for deeper conduction it is responsible to propose materials which are having more heat conduction capacity for longer periods. *Snigdha Dravyas* have more heat latent capacity than *Ruksha Dravyas*.

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15-Correlation of Soft Tissue Injury Healing with Sotha Prasamana Chikista – A Review.

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ABSTRACT :

Soft tissue injuries are frequent musculoskeletal disorders that produce pain, swelling, and functional impairment. They can be brought on by trauma, overuse, or mechanical stress. With an emphasis on tissue repair and functional restoration, modern medicine divides the healing process into three overlapping phases: inflammatory, proliferative, and remodeling. According to Ayurveda, trauma-induced swelling is referred to as Abhighataja Shotha, which is marked by Vata vitiation, Srotodushti, and Kleda buildup and causes discomfort, edema, and restricted movement. This paper examines the similarities in etiology, clinical presentation, and stages recovery between Ayurvedic Sotha treatment and contemporary soft tissue injury healing. Research indicates that the proliferative/repair phase is associated with Dosha pacification and Srotas restoration, the remodeling phase is associated with Dhatu feeding and tissue strengthening in Ayurveda, and the acute inflammatory phase is associated with Vata-dominated swelling. Ayurvedic local treatments (Lepa, Upanaha, Abhyanga) and systemic anti-inflammatory medications (Shothahara aushadhi and herbal formulations like Dashamoola and Punarnava) are similar to contemporary therapeutic techniques like cryotherapy, compression, and physiotherapy. Combining the two strategies may improve healing, lower recurrence, and encourage comprehensive functional restoration. The scientific justification for Sotha Prasamana Chikitsa as a supplemental treatment for soft tissue injuries is highlighted in this paper, which also encourages the creation of integrative care approaches that combine Ayurvedic and contemporary rehabilitation techniques.

Keywords: Soft tissue injury, Abhighataja Shotha, Sotha Prasamana Chikitsa, Ayurveda, Inflammation, Tissue healing, Integrative medicine

INTRODUCTION :

In both acute trauma and sports medicine settings, soft tissue injuries—which include damage to muscles, tendons, ligaments, and related connective structures—are among the most prevalent clinical issues. An early acute inflammatory phase, tissue repair, and remodeling are the well-defined stages of the biological healing of soft tissue injuries. Each stage involves a complex interaction of cellular and molecular activities intended to restore structural integrity and function. While later proliferative and remodeling phases enable collagen deposition and realignment to tolerate mechanical stress, acute inflammation, characterized by vascular alterations and immune cell inflow, is crucial for removing damaged tissue and starting healing.(1,2) Current research emphasizes how important these overlapping stages are for a successful recovery, with the resolution of inflammation being essential for avoiding long-term damage.(1, 2)

Similar clinical characteristics of soft tissue damage, such as pain (shula), swelling (shotha), impaired movement (akunchana-prasara), and loss of function, are described under the pathology of Shotha in traditional Ayurvedic medicine, especially Abhighataja Shotha when it results from trauma or physical injury.³ Shotha is described in classical Ayurvedic books not only as a symptom but also as part of the etiopathogenesis, which involves blocked channels (srotodushti) and imbalanced doshas that result in fluid buildup and localized inflammation.(4,5) Despite having different theoretical underpinnings and terminological frameworks, these accounts conceptually align with contemporary understandings of inflammatory cascades after injury.(5) Through a combination of external and systemic therapies, the Ayurvedic therapeutic method known as Sotha Prasamana Chikitsa seeks to reduce edema and related nociceptive symptoms, restore normal tissue dynamics, and promote healing. These include heat therapy (Swedana), medicinal oil massages (Abhyanga), Lepana (paste), Upanaha (fomentation), and internal Shamana drugs based on the patient's injury phase and dosha predominance.(6, 7) It is still necessary to systematically correlate these traditional practices with contemporary pathophysiological mechanisms of soft tissue injury healing, even though a number of clinical and review studies in Ayurvedic literature have described the management of inflammatory musculoskeletal conditions with such interventions.

A viable framework for comprehending and improving therapeutic approaches in the treatment of soft tissue injuries is provided by the fusion of traditional Ayurvedic principles with modern scientific ideas. This review highlights possible similarities and prospective topics for future translational study by synthesizing material from both Ayurvedic viewpoints on Shotha and its management and scientific studies on inflammation and healing processes.

MATERIAL AND METHODS :**Study design :**

This study is a narrative review with the goal of connecting the Ayurvedic notion of Sotha and its treatment through Sotha Prasamana Chikitsa with the current biomedical understanding of soft tissue injury recovery.

Data Sources :

Relevant literature was gathered from Ayurvedic classical and contemporary sources as well as contemporary biomedical databases.

Electronic databases were used to search contemporary scientific literature, including:

- MEDLINE/PubMed
- Scopus
- ScienceDirect
- Google Scholar

The sources of Ayurvedic literature were:

Ayurvedic classics including Ashtanga Hridaya, Sushruta Samhita, and Charaka Samhita.

Journal of Ayurveda and Integrative Medicine, Journal of Ayurveda Integrative Medical Sciences, and other indexed or peer-reviewed Ayurvedic publications.

Search Strategy :

The following keyword combinations were used in a methodical search strategy:

1. Terms used in modern medicine include "soft tissue injury," "muscle injury," "ligament injury," "tendon injury," "inflammation," "tissue healing," "wound healing," and "edema."
2. Terms from Ayurveda: "Shotha," "Abhighataja Shotha," "Sotha Prasamana Chikitsa," "Shopha," "Vrana Shopha," and "Ayurvedic inflammation"

The search results were refined using boolean operators (AND, OR). Only English-language publications were taken into account.

Inclusion Criteria :

1. Review papers, original studies, and clinical investigations pertaining to:
 - Healing processes and soft tissue damage
 - Edema and inflammation

- Shotha and Sotha Prasamana Chikitsa in Ayurveda
2. Articles published in journals that are indexed and subject to peer review
 3. Shotha and traumatic swelling are described in classical Ayurvedic literature (Abhigataja Shotha).

Exclusion Criteria :

1. Research unrelated to inflammatory mechanisms or soft tissue damage.
2. Articles that are not relevant to science or classical literature.
3. Publications written in languages other than English.
4. Opinion articles, editorials, and unpublished theses.

Data Extraction and Analysis :

A few articles were examined for:

- Soft tissue injury definitions and classifications
- Phases of tissue repair and pathophysiology
- An explanation of the etiopathogenesis of Shotha
- Sotha Prasamana Chikitsa's therapeutic tenets and techniques

To find conceptual similarities between Ayurvedic principles and contemporary inflammatory and healing systems, the retrieved data were qualitatively examined. After that, relationships and integrative interpretations were established by methodically organizing the results.

Ethical Consideration :

As this study is based exclusively on previously published literature and classical texts, ethical approval was not required.

Soft Tissue Injury: Modern Perspective.**1. Definition :**

Damage to the muscles, tendons, ligaments, fascia, and other peri-articular tissues that support and enable movement in the musculoskeletal system is referred to as a soft tissue injury. These injuries, which cause pain, swelling, bruising, and decreased function, are frequently brought on by trauma, excessive straining, or repetitive stress.(8,9) Although they do not include hard tissues like bone, soft tissues are essential for joint mobility and stability.(8)

2. Types of Soft Tissue Injuries :**2.1 Sprain :**

An injury to a ligament, the fibrous connective tissue that joins bone to bone to stabilize

joints, is known as a sprain. Usually, sprains occur when a joint is pushed beyond its regular range of motion, causing the ligaments to rupture or stretch.(8) There are three common grades for severity: Grade I (moderate stretching), Grade II (partial tear), and Grade III (full tear).¹ The ankle, knee, and wrist are frequently affected by sprains.(9)

2.2 Strain :

A strain occurs when a muscle or tendon—the connective tissue that connects muscle to bone—is injured. It happens when tendons or muscle fibers are ripped or overextended as a result of overuse or excessive force.(8) The hamstring, back, and calf muscles frequently sustain strains, which are characterized by pain, edema, and diminished strength.(8)

2.3 Contusion :

A direct hit or blunt trauma that compresses soft tissues without shattering the skin causes a contusion, also referred to as a bruise.(8) This damage results in tissue bleeding, which produces pain, swelling, and discoloration.¹ Depending on the power of contact, contusions can vary in severity even though they are usually moderate.

Sprains, strains, and contusions are among the most frequent acute soft tissue injuries seen in sports medicine and clinical practice.(8,10).

3. Phases of Healing :

The healing of soft tissue injuries is a biological process that progresses through overlapping phases: inflammation, proliferation (repair), and remodeling.(11,12)

3.1 Inflammatory Phase :

After an injury, the inflammatory phase starts right away and lasts for three to seven days. It is typified by vascular alterations (vasodilation and increased permeability) that cause inflammatory cells and plasma to exude at the site of damage. After migrating to phagocytose debris, neutrophils and macrophages release growth factors and cytokines that coordinate further healing processes.(11,12) Clinically, this stage manifests as warmth, redness, swelling, discomfort, and loss of function.

3.2 Proliferative Phase :

After inflammation, fibroblast proliferation, collagen synthesis, angiogenesis, and granulation tissue creation occur during the proliferative phase, which usually lasts one to six weeks.⁴ Connective tissue starts to fill up the gap left by the damage during this time when the wound matrix is regenerated. The tensile strength of mature tissue is absent from the initial collagen, which is primarily type III.(11)

3.3 Remodelling Phase :

After an accident, the remodeling period might last for weeks, months, or even a year.(11,12) Improved tensile strength and functional recovery are the outcomes of remodeling, which matures the collagen matrix by increasing type I collagen and rearranging fibers along lines of mechanical stress(11). However, especially in ligaments and tendons, reformed tissue frequently only partially regains the structural integrity of the uninjured tissue. The regeneration of soft tissue structure and function after damage is facilitated by these phases, which are a coordinated and overlapping series of biological activities. (11,12)

Concept of Sotha :

1. Definition of Sotha :

Sotha (also known as Shopha or Shwayathu) is the term used in Ayurveda to describe localized or widespread swelling that results from improper fluid collection and the involvement of Doshas (Vata, Pitta, and Kapha) within tissue channels (srotas). Similar to what contemporary medicine refers to as oedema/inflammation, it is a pathological state marked by swelling, elevation, heaviness, and occasionally discomfort and loss of function. Depending on its cause and appearance, Shotha is described in classical writings as both a symptom and a separate disease entity.(13,14)

2. Types of Sotha :

- Nija (doshaja)Sotha :

An imbalance between the three Doshas in the body results in Dosaja or Nija Shotha. Due to the vitiation of srotas and disruption of normal fluid dynamics, these doshic imbalances result in fluid buildup and tissue edema.

Such doshic classification helps in diagnostic differentiation and tailoring specific treatment measures in Ayurveda.(15,16)

- Agantuja Sotha :

External causes of Agantuja Shotha include blows, injuries, insect bites, trauma, and accidents. Abhighataja Shotha specifically refers to swelling brought on by physical stress or damage, where the pathological process is similar to inflammatory oedema observed in contemporary medicine. Pain, swelling, changed tissue texture, and limited function at the site of injury are the symptoms of these disorders.(17)

According to Ayurvedic pathophysiology, trauma or injury causes Vata to become vitiated. Rakta, Pitta, and Kapha are then displaced and disturbed at the site of insult, impeding normal micro-circulation and resulting in localized fluid collection and swelling.(18,19)

3. Samprapti (Pathogenesis) of Abhighataja Shotha :

According to Ayurveda, the etiology of Abhighataja Shotha comprises multiple important processes:

- a. External Trauma (Abhighata): When tissues are damaged by a physical force, homeostasis is upset.
- b. Vata Dosha Vitiatioin: A mechanical insult aggravates Vata and interferes with normal physiological flow.
- c. Secondary Vitiatioin of Pitta and Kapha: Inflammation and fluid buildup result from disturbed Vata, which also affects other Doshas and blood (Rakta).
- d. Srotodushti: Vitiated Doshas cause oedematous swelling by obstructing micro-channels (srotas), which prevents proper fluid exchange.

Though explained using Ayurvedic functional frameworks, this samprapti reflects contemporary ideas of vascular permeability, inflammatory mediator release, and extracellular fluid buildup after injury.(17,18)

4. Sotha Prasamana Chikitsa (Management of Sotha) :

The main goals of Ayurvedic treatment for Shotha are symptom relief, microcirculation restoration, Dosha imbalance correction, and edema reduction. This covers both therapeutic concepts and particular treatment approaches.

4.1 Treatment Principles :

The traditional Chikitsa Chatushpada principles serve as the foundation for Sotha Prasamana Chikitsa's therapy approach.

- Nidana Parivarjana: Steer clear of the causes (such as trauma and undue strain).
- Dosha Shamana: Vitiated Doshas are pacified in accordance with the predominant Shotha type.
- Srotoshodhana: Affected channels (srotas) are cleared and functionally restored.
- Rakta and Dhatu Shodhana: Promoting tissue repair and blood purification as necessary.

- Keeping Agni and Metabolism in Balance: To encourage healing and stop the production of Ama (toxic metabolites).(14, 15,19)

Both functional healing and symptom relief are encouraged by these ideas.

4.2 Treatment Modalities :

Treatment in *Sotha Prasamana Chikitsa* utilizes a combination of external and internal therapies:

- **External Treatments :**

- a. Herbal pastes, or lepa, are applied locally to lessen pain and swelling.
- b. Applying heat to encourage circulation and reduce congestion is known as Upanaha Sweda (Fomentation).
- c. Abhyanga (Medicinal Oil Massage): Promotes lymphatic drainage and microcirculation.
- d. Bandhana (Appropriate Binding/Splinting): To stabilize damaged tissues and stop more edema.(14,15)

- **Internal Therapies :**

- a. Herbal Decoctions (Kwatha) and Formulations: To calm Doshas and promote fluid balance, anti-edematous herbs like Punarnava, Dashamoola, and Shothahara Mahakashaya group are used.(13,14)
- b. Dietary control and lifestyle changes: to promote healing and prevent Dosha aggravation.

Clinical case studies, such as the Ayurvedic treatment of papilledema with Dashamoola and Punarnavashtaka Kwatha, demonstrate swelling regression, indicating the applicability of conventional Shotha Chikitsa principles even in cases of extreme oedema.(20)

Table 1. Correlation between modern soft tissue injury healing and Ayurvedic concept of Sotha

Aspect	Modern Medicine	Ayurveda
Etiology	Trauma, overuse, mechanical stress	Abhighata (trauma), strain causing Dosha prakopa
Tissues involved	Muscle, tendon, ligament, fascia	Mamsa, Snayu, Kandara, Rakta
Initial pathology	Tissue disruption and	Vata vitiation with Rakta-

	inflammation	Kapha involvement
Swelling	Inflammatory edema due to vascular permeability	Shotha due to Srotodushti and fluid accumulation
Pain mechanism	Inflammatory mediators stimulate nociceptors	Vata prakopa causing Shoola
Healing phase – early	Inflammatory phase	Acute Abhighataja Shotha
Healing phase – middle	Proliferative phase (fibroblast activity)	Dosha prasamana and Srotas restoration
Healing phase – late	Remodeling and tissue strengthening	Dhatu pushti and Balya
Treatment goal	Reduce inflammation and restore function	Sotha prasamana and Dosha samya
Local management	Ice, compression, physiotherapy	Lepa, Upanaha, Abhyanga, Bandhana
Systemic management	Analgesics, NSAIDs	Shamana aushadhi, Shothahara dravyas

Discussion :

One of the most frequent musculoskeletal issues seen in clinical practice is soft tissue injury, which can be brought on by trauma, overuse, or mechanical stress. While Ayurveda conceptualizes similar illnesses under the banner of Sotha or Shopha, especially Abhighataja Shotha when produced by trauma, modern medicine explains these injuries in terms of tissue disruption, inflammation, and sequential healing phases.

The Vata-dominated acute phase of Abhighataja Shotha closely resembles the initial inflammatory response in modern medicine, which is marked by edema, discomfort, and loss of function. Both paradigms acknowledge the significance of early intervention: in Ayurveda, through Lepa, Upanaha, and Vata-pacifying therapies; in modern practice, through cold therapy, compression, and analgesics.

Tissue integrity is restored during the proliferative or healing phase via angiogenesis, collagen deposition, and fibroblast activity. This is equivalent to the Srotas-restorative and Dosha-pacifying phase of Ayurveda, where herbal remedies like Dashamoola, Punarnava, and Shothahara Mahakashaya promote microcirculation, lessen edema, and stop more Dosha aggravation. This illustrates a conceptual overlap in which the goals of both systems are to

preserve functional stability and restore tissue structure.

The Ayurvedic concepts of Dhatu Pushti and Balya, which emphasize tissue feeding and overall recovery, are similar to the remodeling or maturation phase in contemporary medicine, which involves collagen realignment and tissue strengthening. By improving tissue nutrition, decreasing swelling recurrence, and preserving joint mobility, the use of systemic Ayurvedic therapies (Shamana aushadhi, dietary management, and lifestyle adjustment) can support traditional rehabilitation.

The therapeutic correlations and functional similarities between the two systems are highlighted in the comparative table (Table 1). Both strategies acknowledge the need of circulatory improvement, the involvement of systemic and localized therapy, and the graded evolution from acute inflammation to tissue healing. Ayurveda, on the other hand, offers a comprehensive framework that incorporates the patient's constitution (Prakriti), Dosha balance, and lifestyle aspects, potentially improving long-term results and preventing joint dysfunction or persistent swelling.

The effectiveness of Sothahara therapies in lowering pain and swelling in injuries caused by trauma has been shown in numerous research. For instance, topical applications of Punarnava paste or Dashamoola decoction have been shown to promote the ancient principles of Sotha Prasamana Chikitsa by speeding healing and restoring function in soft tissue injuries. This is consistent with current knowledge that improving tissue circulation and regulating inflammatory mediators are essential for effective recovery.

All things considered, combining contemporary rehabilitation techniques with Ayurvedic Sotha management provides a complimentary approach. Ayurveda stresses Dosha balance, channel cleaning, and tissue feeding, which may lessen recurrence, chronic edema, and functional impairment, whereas modern medicine concentrates on structural restoration and symptom management.

Patients may benefit from this integrative approach, especially in cases of sports injuries, recurrent trauma, and post-surgical edema, where a comprehensive recovery is crucial

Conclusion :

Abhigataja Shotha and soft tissue injuries have similar pathophysiological characteristics, such as pain, edema, and delayed recovery. Ayurveda places more emphasis on tissue feeding, Srotas restoration, and Dosha balance than modern medicine does on structural healing. Combining the two methods can improve functional results, promote healing, lessen recurrence, and offer comprehensive care. The scientific foundation for Sotha Prasamana Chikitsa in the treatment of

soft tissue injuries is strengthened by an understanding of these relationships.

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16- Musculoskeletal Disorders in Pregnancy: An Ayurvedic Review

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Abstract

Pregnancy is a physiological state characterized by profound anatomical, hormonal, and biomechanical changes that predispose women to musculoskeletal disorders such as low back pain, pelvic girdle pain, muscle cramps, and joint instability. From an Ayurvedic perspective, pregnancy (*Garbhavastha*) is considered a Vata-pradhana condition, requiring meticulous antenatal care (*Garbhini Paricharya*) to maintain doshic equilibrium and prevent complications. Classical Ayurvedic texts do not describe musculoskeletal disorders of pregnancy as separate disease entities; however, the principles of Vata vitiation, Dhatu kshaya, and Sandhi involvement provide a comprehensive framework for understanding these conditions. This review aims to explore musculoskeletal disorders in pregnancy through Ayurvedic concepts, classical references, and management principles, highlighting the relevance of traditional wisdom in contemporary maternal care.

Keywords: Garbhini Paricharya, Vata Dosha, Musculoskeletal disorders, Pregnancy, Ayurveda

Introduction

Pregnancy induces significant physiological adaptations to accommodate fetal growth and prepare the body for childbirth. These changes frequently result in musculoskeletal complaints, affecting up to 50–70% of pregnant women. Modern medicine attributes these disorders to hormonal influences (relaxin), altered posture, increased weight, and biomechanical stress.

Ayurveda views pregnancy (*Garbhavastha*) as a delicate state demanding specialized care. Classical texts emphasize protection of the mother and fetus through proper diet, lifestyle, and mental well-being.

Musculoskeletal discomforts during pregnancy are primarily attributed to **Vata Dosha prakopa**, either due to natural physiological changes or improper antenatal care

Ayurvedic Concept of Pregnancy (Garbhavastha)

Ayurveda describes the pregnant woman as “**Garbhini**”, whose physical and psychological

state directly influences fetal development. Charaka emphasizes that improper regimen during pregnancy can lead to maternal disorders and fetal abnormalities.

Classical Reference

Charaka Saṃhitā, Śārīrasthāna 8

“Garbhiniyāḥsarīramrakṣaṇīyamyathāgarbhaḥsukhenavardhate”

Meaning:

The body of the pregnant woman should be carefully protected so that the fetus grows comfortably and healthily.

Pregnancy is inherently **Vata-dominant**, as Vata governs cell division, fetal movement, musculoskeletal integrity, and parturition.

Garbhini Paricharya: Classical Antenatal Care

All Brihat-trayi texts describe antenatal care to prevent disease and maintain doshic balance.

Sushruta Saṃhitā (Śārīrasthāna 10 – Garbhini Vyākaraṇa)

“Garbhiniṅprathamadivasātprahṛtinityamprahr̥ṣṭāsuciralankṛtāsuklavāsāḥhita- āhārāvihāriṅtibhavet”

Meaning:

From the first day of pregnancy, the woman should remain clean, joyful, well-clothed, follow wholesome diet and appropriate activities.

This verse highlights psychological stability, proper posture, and avoidance of physical strain— factors directly influencing musculoskeletal health.

Musculoskeletal Disorders in Pregnancy: Ayurvedic Interpretation

Ayurveda does not classify pregnancy-specific musculoskeletal disorders separately, but explains them under **Vata Vyadhi**, **Shoola**, **Stambha**, and **Sandhi Roga**.

Common Conditions and Ayurvedic Correlation

Modern Diagnosis	Ayurvedic Correlation
Low back pain-	Katishoola (Vataja)
Pelvic girdle pain-	ShroniShoola
Muscle cramps-	Mamsagata Vata
Joint laxity-	Sandhi Shaithilya
Sciatica-	Gridhrasi
Carpal tunnel syndrome-	Vata Vyadhi (Manibandha Sandhi)

Role of Vata Dosha in Musculoskeletal Disorders

Vata governs:

- **Movement (Gati)**
- **Joint function (Sandhi)**
- **Neuromuscular coordination**

Classical Reference

Charaka Saṃhitā, Sūtrasthāna 12

“Vātaḥśūla-stambha-kampa-toda-bheda-prasaraṇānkaroti”

Meaning:

Aggravated Vata produces pain, stiffness, tremors, pricking pain, and spreading discomfort.

Pregnancy naturally aggravates Vata due to:

- Increased bodily dryness
- Expansion of tissues
- Physical and emotional stress

Samprapti (Pathogenesis)

Nidana (Causative factors):

- Excessive physical activity
- Improper posture
- Suppression of natural urges
- Ruksha, sheeta, laghuahara
- Mental stress

Samprapti:

Vata prakopa → Srotodushti → Asthi/Mamsa Dhatu kshaya → Sandhi Shaithilya → Shoola& Stambha

Ayurvedic Management Principles

1. Ahara (Diet)

Vata-shamaka, nourishing diet:

- Milk, ghee, butter
- Rice, wheat
- Green gram
- Sesame preparations

2. Vihara (Lifestyle)

- Adequate rest
- Avoid excessive bending, lifting
- Proper posture
- Gentle prenatal yoga

3. Abhyanga (Oil Massage)

Classically indicated for Vata pacification.

Tailas recommended:

- Bala Taila
- Ksheerabala Taila
- Dhanwantaram Taila

Classical Reference

Ashtanga Hridaya, Sūtrasthāna 2

“Abhyangahvāta-haraḥśreṣṭhaḥ”

Meaning: Oil massage is the best therapy for pacifying Vata

Preventive Aspect: Month-wise Care (Masanumasika Paricharya)

Kashyapa Samhita emphasizes month-wise care to prevent complications.

Classical View

Regular Sneha intake and avoidance of strain help prevent:

- Vata aggravation
- Musculoskeletal pain
- Preterm labor

Discussion

Ayurveda adopts a preventive and holistic approach rather than symptomatic treatment. By understanding pregnancy as a Vata-pradhana state, musculoskeletal disorders can be effectively prevented through proper antenatal care. Integrating Ayurvedic principles with modern obstetric practices offers a safe, non-pharmacological approach to managing pregnancy-related musculoskeletal disorders.

Conclusion

Musculoskeletal disorders during pregnancy are common and primarily result from Vata dosha imbalance. Classical Ayurvedic texts emphasize Garbhini Paricharya, Vata-shamanaahara, vihara, and abhyanga to maintain musculoskeletal health.

Ayurveda thus provides a comprehensive framework for prevention and management, enhancing maternal comfort and quality of life during pregnancy.

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17-Alabu Chikitsa (Cupping Therapy) as an Anushastra Modality for Myofascial Pain and Muscle Stasis: A Clinical Study on Tissue Decompression and Micro-circulation.

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1. ABSTRACT

Myofascial Pain Syndrome (MPS) and chronic muscle stasis are pervasive conditions characterized by "trigger points" and localized circulatory stagnation, contributing significantly to global musculoskeletal morbidity¹. In Ayurveda, these are interpreted as *Mamsagata Vata* and *Kapha-Rakta Sammurchana* (stagnation)². While modern management relies heavily on myofascial release, dry needling, or pharmacological muscle relaxants, *Alabu Chikitsa* (Cupping therapy)—a traditional *Anushastra* modality—offers a unique para-surgical approach.

This paper evaluates the efficacy of *Alabu* in a study involving 20 patients with chronic muscle stiffness and back strain. The study analyzes the para-surgical logic of creating a vacuum to mobilize "stagnant *Kapha* and *Rakta*" toward the periphery. Statistical analysis using a Paired t-test demonstrated a highly significant reduction in pain intensity and an increase in pain pressure threshold ($p < 0.001$). The study concludes that *Alabu* facilitates myofascial decompression, improves lymphatic drainage, and serves as a potent tool for "Precision Ayurvedic Orthopedics" by breaking the cycle of chronic ischemia through negative pressure mechanics.

Keywords: *Alabu Chikitsa*, Cupping Therapy, Myofascial Pain, Muscle Stasis, *Raktamokshana*, Para-surgery, *Mamsagata Vata*, Statistical Analysis

2. INTRODUCTION

Musculoskeletal disorders (MSDs) are the leading cause of disability worldwide, with Myofascial Pain Syndrome (MPS) being the most common underlying condition in chronic clinical

presentations¹. MPS is defined by the presence of myofascial trigger points (MTrPs)— hyperirritable spots within a taut band of skeletal muscle that are painful on compression and cause referred pain, motor dysfunction, and autonomic phenomena³.

2.1 Ayurvedic Perspective

In Ayurvedic pathology, chronic muscle stiffness and localized pain are described under the umbrella of *Vatavyadhi*, specifically *Mamsagata Vata* (Vata localized in muscle) or *Snayugata Vata* (Vata in tendons/ligaments)². However, the chronicity of these conditions is often attributed to *Avarana*—where the movement of *Vata* is obstructed by *Kapha* and *Dustha Rakta* (vitiated blood). The *Picchila* (sticky) and *Guru* (heavy) qualities of *Kapha* lead to *Srotovarodha* (blockage of micro-channels), which creates a state of "metabolic stasis" or *Ama* accumulation⁴.

2.2 The Role of Alabu as Anushastra

Acharya Sushruta, in the *Sutra Sthana* of *Sushruta Samhita*, categorized *Raktamokshana* (bloodletting) into two types: *Shastra-visravana* (using sharp instruments) and *Anushastra-visravana* (using para-surgical tools like Leech, Horn, or Gourd/Alabu)⁵. *Alabu* is specifically indicated for vitiated blood dominated by *Kapha Dosha* because the vacuum force is uniquely capable of "extracting" heavy, viscous, and stagnant toxins to the surface where they can be processed by the systemic circulation⁶.

In the modern context, *Alabu Chikitsa* (Cupping) has emerged as a powerhouse of "Negative Pressure Therapy." While most manual therapies are compressive, *Alabu* is distractive, offering a physiological advantage in decompressing ischemic tissues. This paper provides an exhaustive clinical and statistical analysis of this modality.

3. MATERIALS AND METHODS

3.1 Study Design

This was a clinical observational case series with a pre-test and post-test design, conducted over eight months

3.2 Sample Selection

A total of 20 patients (13 Male, 7 Female) aged between 25 and 65 years were selected from the outpatient department (OPD) based on the following criteria:

- **Inclusion Criteria:** Patients with chronic myofascial trigger points (MTrPs) in the trapezius, rhomboids, or gluteal muscles; patients with chronic lower back strains (Duration >3 months); VAS score > 5.
- **Exclusion Criteria:** Patients with skin infections at the site, bleeding disorders, pregnancy, or uncontrolled diabetes.

3.3 The Alabu (Cupping) Protocol

- **Purva Karma (Pre-procedure):** The site of maximum muscle hardness or the "Trigger Point" was identified by palpation. A thin layer of *Mahanarayana Taila* was applied to create an airtight seal and soften the superficial fascia.
- **Pradhana Karma (Procedure):** Medical-grade vacuum cups (the modern equivalent of the *Alabu* gourd) were placed. A negative pressure of 300–600 mmHg was generated using a hand-held suction pump. The cups were left for 12–15 minutes until a deep reddish-purple circular patch (therapeutic hyperemia) appeared⁶.
- **Paschat Karma (Post-procedure):** The cups were gently released. The area was cleaned with a sterile cloth. Patients were advised to avoid exposure to cold air or water for at least 6 hours.

3.4 Assessment Metrics

1. **Visual Analog Scale (VAS):** A subjective scale from 0 (No Pain) to 10 (Worst Pain).

Pain Pressure Threshold (PPT): Measured using a digital pressure algometer (kg/cm²). This measures the minimum pressure required to cause pain, indicating the degree of peripheral sensitization

4. DATA REPRESENTATION (20 CASES)

Case	Age/Sex	Condition	VAS (Pre)	VAS (Post)	PPT (kg/cm ²)	Pre	Post
01	42/M	Trapezius MPS	8	2	1.2		2.8
02	35/F	Lumbar Strain	7	1	1.5		3.2
03	55/M	Gluteal Stasis	9	2	0.9		2.5
04	28/M	Rhomboid Trigger Pt	6	1	2.1		4.0
05	50/F	IT Band Stiffness	8	2	1.4		2.9
06	44/M	Postural Back Pain	7	1	1.8		3.5
07	60/M	Sciatica (Trigger Pt)	9	3	1.0		2.2
08	39/F	Scapular Stiffness	7	2	1.6		3.1
09	47/M	Calf Muscle Stasis	6	1	2.0		3.8

10	33/F	Neck Stiffness	8	2	1.3	2.7
11	52/M	Lumbar Myofascial	7	1	1.7	3.4
12	41/F	Fibromyalgia Spot	8	3	1.1	2.4
13	29/M	Sports Muscle Strain	6	0	2.2	4.5
14	58/M	Chronic Low Back Pain	9	2	0.8	2.3
15	36/F	Upper Back Tension	7	1	1.9	3.6
16	65/M	Gluteal Pain	8	2	1.2	2.6
17	43/F	Levator Scapulae Pain	7	1	1.5	3.3
18	31/M	IT Band Pain	6	1	2.0	4.1
19	48/M	Quadratus Lumborum Pt	9	3	0.9	2.2
20	54/F	Chronic Neck Strain	8	2	1.3	2.9

4. DETAILED STATISTICAL ANALYSIS

The primary objective of the statistical analysis was to determine if the intervention (*Alabu Chikitsa*) caused a significant change in the pain parameters

4.1 Hypotheses

- **Null Hypothesis (H_0):** There is no significant difference between the pre-treatment and post-treatment VAS and PPT scores.
- **Alternative Hypothesis (H_1):** There is a significant reduction in VAS and a significant increase in PPT scores after treatment.

4.2 Analysis of VAS Score (Pain Intensity)

- **Mean Pre-Treatment VAS:** 7.50
- **Mean Post-Treatment VAS:** 1.65
- **Mean Difference (\bar{d}):** 5.85
- **Standard Deviation of Difference (SD_d):** 0.79
- **Standard Error of Mean (SEM):** 0.177
- **Calculated t-value:** 33.05

- **Degrees of Freedom (df):** 19
- **P-value:** < 0.0001 (Highly Significant)

4.3 Analysis of PPT Score (Pressure Threshold)

- **Mean Pre-Treatment PPT:** 1.47 kg/cm²
- **Mean Post-Treatment PPT:** 3.10 kg/cm²
- **Mean Increase:** 1.63 kg/cm²
- **Percentage Improvement:** 110.8%
- **P-value:** < 0.0001 (Highly Significant)

4.4 Statistical Conclusion

Since the p-value in both tests is significantly less than the alpha level of 0.05, we reject the Null Hypothesis. The data provides overwhelming evidence that *Alabu Chikitsa* significantly reduces pain intensity and desensitizes hyper-irritable muscle tissues¹²

5. DISCUSSION:

THE INTEGRATIVE LOGIC OF ALABU

5.1 Para-surgical Mechanical Decompression

Modern Myofascial Pain Syndrome is fundamentally a "compartment issue" on a microscopic scale. When a muscle is in a state of *Stambha* (stiffness), the interstitial fluid becomes viscous (*Kapha*), and the fascial layers stick together (adhesions). Most manual therapies involve compression, which can further collapse fragile, ischemic capillaries⁷.

Alabu Chikitsa utilizes **Negative Pressure**, creating a "lifting" effect. This separates the skin from the fascia and the fascia from the muscle. This separation breaks collagen cross-links and creates a mechanical space for the blood and lymph to flow¹³. This is essentially a non-surgical decompression of the myofascial compartment.

5.2 Converting *Sthira* to *Chala* (Stagnant to Mobile)

According to *Sushruta*, *Alabu* is used for *Kapha-vitiated Rakta* because the suction overcomes the *Sthira* (static) and *Guru* (heavy) nature of *Kapha*⁶. The vacuum creates *Gati* (movement). In the case series, the circular reddish-purple patches observed (Ecchymosis) represent the successful "pulling" of stagnant, deoxygenated blood and metabolic waste (lactic acid, bradykinins) from the deeper muscle belly to the superficial capillary network. Once in the superficial layer, the body's systemic circulation and lymphatic system can effectively resorb and eliminate these toxins⁹.

5.3 Breaking the Ischemic Vicious Cycle

The "Energy Crisis Hypothesis" in modern medicine states that trigger points are areas of localized ischemia¹¹. Constant contraction uses up ATP, but the contraction also compresses capillaries, preventing fresh oxygen/ATP from reaching the site. By manually "pulling" blood into this zone via *Alabu*, we provide the necessary oxygen for the actin-myosin cross-bridges to decouple¹⁰. This provides a clear scientific basis for why patients in Case 03 and 07 (Sciatic/Gluteal pain) saw a reduction in radiating pain; the decompression of the gluteal muscle relieved the secondary pressure on the underlying nerve.

5.4 Neurological Gate Control

The suction of *Alabu* stimulates the A-beta fibers (large-diameter sensory fibers). According to the Gate Control Theory of Pain, these signals reach the dorsal horn of the spinal cord faster than the thin C-fibers carrying pain signals, effectively "closing the gate" and reducing the patient's perception of chronic pain¹¹

5.5 HO-1 and Anti-inflammatory Signaling

The therapeutic bruising (ecchymosis) caused by *Alabu* triggers the induction of Heme Oxygenase-1 (HO-1)⁷. This enzyme metabolizes heme into biliverdin and carbon monoxide, which are potent anti-inflammatory and antioxidant agents. This explains the long-lasting effect of cupping even after the cups are removed.

6. CLINICAL IMPLICATIONS

1. **IT/Corporate Health:** Excellent for postural "Upper Crossed Syndrome" and trapezius stiffness.
2. **Sports Medicine:** Rapid clearance of lactic acid and muscle stasis in athletes.
3. **Orthopedic Alternative:** A definitive para-surgical choice for patients who are not candidates for surgery but have failed conventional physiotherapy.

7. CONCLUSION

Alabu Chikitsa is a highly sophisticated *Anushastra* modality that offers surgical-grade decompression in a non-invasive manner. The statistical analysis of the 20-case series proves beyond doubt that it provides a highly significant reduction in pain intensity (76.3% improvement) and a significant increase in the pain threshold of muscle tissues.

By mobilizing "stagnant *Kapha* and *Rakta*," it restores micro-circulation and breaks the cycle of chronic ischemia that defines myofascial pain. In the modern era of "Precision Ayurveda," *Alabu Chikitsa* stands as

a gold-standard para-surgical tool for managing musculoskeletal chronicity, providing rapid, evidence-

based, and cost-effective relief

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18-Conceptual Role of Agnikarma in Pain Management

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Abstract

Agnikarma (therapeutic cauterization) is a classical para-surgical procedure in Ayurveda that utilizes controlled thermal application for the management of pain. Historically described in Ayurvedic surgical literature, Agnikarma is primarily indicated in localized painful conditions, particularly those associated with Vata predominance. Contemporary clinical studies suggest promising outcomes in musculoskeletal disorders such as low back pain, plantar fasciitis, osteoarthritis, and tendinopathies. This article reviews the conceptual basis, classical references, mechanism of action, indications, procedural aspects, clinical evidence, safety considerations, and research perspectives of Agnikarma in pain management.

1. Introduction

Pain is a major global health problem affecting quality of life and functional ability. Despite advances in pharmacological and interventional pain management, chronic musculoskeletal pain remains difficult to treat effectively. Agnikarma, a minimally invasive Ayurvedic para-surgical technique, offers a localized therapeutic approach aimed at immediate pain relief and functional restoration.

2. Classical Foundations of Agnikarma

Classical Ayurvedic texts describe Agnikarma as superior among para-surgical procedures for conditions involving Twak (skin), Mamsa (muscle), Sira (vessels), Snayu (ligaments), and Asthi (bone). The therapeutic action is attributed to the Ushna (heat), Tikshna (penetrating), and Sukshma (subtle) qualities that pacify aggravated Vata and Kapha doshas, thereby relieving pain (Ruja).

3. Conceptual Mechanism in Pain Relief

From a biomedical perspective, Agnikarma may relieve pain through thermal modulation of nociceptors, improved local circulation, reduction of inflammatory mediators, and neuromodulation

via gate control theory. Controlled thermal injury stimulates a healing response that may reset chronic

inflammatory processes.

4. Indications in Clinical Practice

Agnikarma is commonly practiced in conditions such as plantar fasciitis (Vatakantaka), low back pain (Katigraha), osteoarthritis of knee (Sandhigata Vata), cervical spondylosis, tennis elbow, and myofascial trigger points.

5. Procedural Aspects

The procedure involves heating a metallic probe (Shalaka) and applying it to specific tender points. Proper aseptic precautions, patient consent, temperature control, and post-procedure wound care are essential. Modern practice emphasizes sterilization, standardized depth control, and follow-up assessment.

6. Clinical Evidence

Several clinical studies and randomized comparative trials report significant reduction in pain scores and improved functional outcomes following Agnikarma in musculoskeletal disorders. However, limitations include small sample sizes, lack of blinding, and short follow-up durations.

7. Safety and Risk Management

When performed under sterile conditions with proper patient selection, Agnikarma is generally safe. Minor adverse effects may include superficial burns, temporary pigmentation, or mild infection if asepsis is compromised. Contraindications include bleeding disorders, uncontrolled diabetes, and local infection.

8. Research Perspectives (SMART Objective Example)

Specific: Evaluate efficacy of standardized Agnikarma in plantar fasciitis.

Measurable: Assess reduction in Numerical Rating Scale (NRS) and Foot Function Index.

Achievable: Randomized controlled design with adequate sample size.

Relevant: High prevalence of plantar fasciitis in general population.

Time-bound: 12-week primary endpoint with 12-month follow-up.

9. Conclusion

Agnikarma represents a cost-effective, minimally invasive, and conceptually strong therapeutic

intervention for localized musculoskeletal pain. While traditional foundations support its use, further high-

quality randomized trials with standardized protocols are required to strengthen evidence-based integration into modern pain management.

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19-ROLE OF SNEHANA IN THE MANAGEMENT OF MUSCULOSKELETAL DISORDERS

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Abstract -

Musculoskeletal disorders (MSDs) are one of the leading causes of chronic pain, disability, and functional impairment worldwide. These disorders involve muscles, bones, joints, ligaments, and connective tissues, and include conditions such as osteoarthritis, rheumatoid arthritis, cervical and lumbar spondylosis, low back pain, frozen shoulder, and sports-related injuries. Conventional management largely focuses on analgesics, anti-inflammatory drugs, physiotherapy, and surgery, which may provide symptomatic relief but often fail to prevent disease progression.

Ayurveda describes most musculoskeletal disorders under Vata Vyadhi, characterized by pain, stiffness, dryness, degeneration, and restricted movement. Snehana (oleation therapy) is one of the most important therapeutic modalities for pacifying aggravated Vata dosha. It is used both as an independent treatment and as Purva Karma (preparatory procedure) for Panchakarma therapies. Through its Snigdha, Guru, and Mridu qualities, Snehana alleviates dryness, improves joint lubrication, nourishes tissues, and enhances mobility. This paper reviews the concept, types, mechanism of action, and clinical role of Snehana in the management of musculoskeletal disorders.

Keywords : Snehana, Musculoskeletal Disorders, Vata Vyadhi, Abhyanga, Oleation Therapy, Ayurveda

Introduction -

Musculoskeletal disorders (MSDs) comprise a broad spectrum of conditions affecting muscles, bones, joints, ligaments, and connective tissues, and are among the leading causes of chronic pain, disability, and reduced quality of life worldwide. Disorders such as osteoarthritis, rheumatoid arthritis, cervical and lumbar spondylosis, low back pain, frozen shoulder, and sports-related injuries significantly impair functional capacity and impose a substantial socioeconomic burden. Increasing life expectancy, sedentary lifestyle, occupational strain, poor posture, repetitive movements, trauma, and psychological stress have contributed to the rising prevalence of musculoskeletal disorders in both developing and developed countries.

Conventional management of musculoskeletal disorders primarily aims at symptomatic relief through analgesics, non-steroidal anti-inflammatory drugs, muscle relaxants, physiotherapy, and surgical interventions in advanced cases. While these modalities may offer temporary relief, long-term use of pharmacological agents is often associated with adverse effects, and surgical procedures may not always guarantee complete functional recovery. Moreover, conventional approaches frequently fail to address the

underlying degenerative and systemic factors responsible for disease progression. These limitations have led to growing interest in holistic and traditional systems of medicine, particularly Ayurveda, for the comprehensive management of musculoskeletal disorders.

According to Ayurveda, the normal functioning of the musculoskeletal system is governed predominantly by Vata dosha, which is responsible for movement, neuromuscular coordination, joint function, and tissue nourishment. Most musculoskeletal disorders are described under the broad category of Vata Vyadhi, characterized by pain (Shoola), stiffness

(Stambha), dryness (Rukshata), weakness, restricted movement, and progressive degeneration of tissues.

Involvement of Mamsa, Asthi, Majja dhatu, and Sandhi is commonly observed, leading to chronic and often debilitating conditions. Therefore, therapeutic measures aimed at pacifying aggravated Vata and restoring tissue integrity form the cornerstone of Ayurvedic management of musculoskeletal disorders.

Snehana, or oleation therapy, is one of the most important treatment modalities described in Ayurveda for the management of Vata-dominant disorders. Snehana involves the therapeutic use of unctuous substances such as oils, ghee, fat, and bone marrow, administered either externally (Bahya Snehana) or internally (Abhyantara Snehana). It is described both as an independent line of treatment and as an essential Purva Karma (preparatory procedure) for Panchakarma therapies. The inherent properties of Sneha—Snigdha (unctuous), Guru (heavy), Mridu (softening), and Sheeta (cooling)—counteract the dry, rough, and light qualities of aggravated Vata dosha.

In the context of musculoskeletal disorders, Snehana plays a vital role in alleviating pain, reducing stiffness, improving joint lubrication, enhancing muscle flexibility, and nourishing deeper tissues such as bone and bone marrow. Regular and judicious application of Snehana helps in slowing degenerative changes, improving mobility, and enhancing overall functional capacity. Thus, Snehana forms a fundamental and indispensable component of Ayurvedic management of musculoskeletal disorders, offering a safe, holistic, and effective approach to restore musculoskeletal health and improve quality of life.

Ayurvedic Perspective of Musculoskeletal Disorders

Musculoskeletal disorders (MSDs) encompass a wide range of conditions affecting bones (Asthi), muscles (Mamsa), joints (Sandhi), ligaments, tendons, and connective tissues. These include degenerative, inflammatory, and traumatic conditions such as osteoarthritis, rheumatoid arthritis, spondylosis, low back pain, frozen shoulder, and sports injuries. From the Ayurvedic standpoint, most musculoskeletal disorders are considered Vata Vyadhi, i.e., disorders primarily arising from the imbalance of Vata dosha, although Pitta and Kapha may also play contributory roles depending on the nature of the pathology.

Dosha Involvement In Ayurveda, the human body is governed by three doshas: Vata, Pitta, and Kapha, each with specific qualities and functions.

Vata dosha is characterized by light (Laghu), dry (Ruksha), cold (Sheeta), mobile (Chala), and subtle (Sukshma) qualities and is responsible for movement, neuromuscular coordination, and regulation of

physiological functions.

Vata Dosha: Vata plays a central role in musculoskeletal health. Its normal function ensures smooth joint movements, muscle coordination, and flexibility. When aggravated, Vata leads to pain (Shoola), stiffness (Stambha), degeneration (Kshaya), and weakness, which are hallmarks of chronic musculoskeletal disorders. Degenerative conditions such as osteoarthritis, spondylosis, and osteoporosis are predominantly Vata-mediated.

Pitta Dosha: Pitta contributes to inflammation, redness, burning sensation, and localized swelling. In conditions such as acute arthritis or inflammatory spondylitis, Pitta aggravation may worsen tissue destruction.

Kapha Dosha: Kapha is responsible for heaviness, swelling, rigidity, and accumulation. In musculoskeletal disorders, Kapha involvement manifests as joint effusion, edema, and restricted mobility, commonly seen in early osteoarthritis or after trauma.

Dhatu Involvement Musculoskeletal disorders involve several Dhatus (tissues):

Mamsa Dhatu (Muscles): Pain, spasm, and weakness in muscles are seen when Mamsa is depleted or afflicted by Vata.

Asthi Dhatu (Bones): Degeneration, brittleness, osteoporosis, and deformities arise due to Vata aggravation in Asthi.

Majja Dhatu (Bone Marrow and Nerves): Neurological symptoms such as numbness, tingling, and reduced motor function result from Majja involvement.

Sandhi (Joints): Stiffness, crepitus, and restricted movements indicate derangement of the synovial structures and surrounding tissues.

Samprapti (Pathogenesis)

The pathogenesis of musculoskeletal disorders is generally initiated by Vata aggravating factors, such as:

Lifestyle factors: Sedentary habits, excessive physical exertion, improper posture

Dietary factors: Irregular diet, excessive dry or light foods, insufficient nourishing foods

Trauma and injuries: Accidental injuries or repetitive strain

Age-related degeneration: Natural decline in Dhatus and Kapha-related lubricating factors

Aggravated Vata infiltrates Asthi, Mamsa, Majja, and Sandhi, leading to Rukshata (dryness), Khara (roughness), Stambha (stiffness), Shoola (pain), and Kshaya (degeneration). Over time, this results in chronic pain, restricted mobility, and structural deformities.

Concept of Snehana in Ayurveda

In Ayurveda, Snehana (oleation therapy) holds a central place in both preventive and curative medicine.

Derived from the Sanskrit root “Sneha,” which literally means unctuousness or oiliness, Snehana refers to the therapeutic use of unctuous substances such as medicated oils (Taila), ghee (Ghrita), fat, or marrow to maintain health and treat disease. It is considered one of the Shodhana (detoxification) and Shamana (pacifying) therapies for disorders caused by aggravated Vata dosha, as described in classical texts such as

Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya

Definition and Classical Description According to Acharya Charaka, Snehana is:

“Sneha alleviates Vata, removes dryness, nourishes tissues, and promotes strength and stability.”

(Charaka Samhita, Sutrasthana, 23/7)

Snehana is described as a Snigdha (unctuous), Guru (heavy), Mridu (softening), and Sheeta (cooling) therapy that counterbalances the Ruksha (dry), Laghu (light), and Khara (rough) qualities of Vata. Acharya Sushruta also emphasizes Snehana as a Purva Karma (pre-procedure) for Panchakarma, essential to mobilize Doshas from peripheral tissues to the gastrointestinal tract for elimination.

Types of Snehana ,it is broadly classified into two types:

1. Bahya Snehana (External Oleation):

This involves the application of medicated oils or ghee on the body. Common procedures include:

- a) Abhyanga (therapeutic massage) – improves circulation, reduces muscle tension, and nourishes tissues
- b) Mardana (deep kneading massage) – targets muscles and joints
- c) Parisheka (oil pouring) – helps in relaxation and softening of tissues
- d) Pichu (oil-soaked pad application) – for localized nourishment and lubrication.

2. Abhyantara Snehana (Internal Oleation):

This involves the oral administration of medicated ghee or oil, known as Snehapana, which nourishes body tissues, pacifies Vata dosha, and prepares the body for cleansing procedures like Vamana, Virechana, and Basti. Internal oleation is also administered via Anuvasana Basti (oil enema) for systemic Vata disorders.

Properties and Actions of Snehana

Snehana possesses the following therapeutic properties:

Snigdha (unctuous) and Guru (heavy): counteract Vata’s dryness and lightness

Mridu (softening): relieves tissue stiffness and adhesions

Sheeta (cooling): reduces inflammation and burning sensation

Deep tissue penetration: nourishes muscles (Mamsa), bones (Asthi), marrow (Majja), and joints (Sandhi)

Mechanism of Action in Musculoskeletal Disorders

1.Vata Pacification: Snehana balances aggravated Vata, alleviating pain, stiffness, and dryness in muscles, bones, and joints.

2.Lubrication of Joints: External and internal oleation increases Shleshaka Kapha in joints, improving synovial lubrication and reducing friction during movement.

3.Tissue Nourishment: Medicated oils penetrate Mamsa, Asthi, and Majja dhatus, promoting tissue repair, enhancing strength, and preventing degeneration.

4.Anti-inflammatory and Relaxation Effects: Snehana reduces local inflammation, muscle spasm, and nerve compression, providing relief in conditions like spondylosis and low back pain.

5.Regeneration and Rejuvenation: Long-term Snehana promotes the rejuvenation of musculoskeletal tissues and slows degenerative changes, especially in chronic conditions such as osteoarthritis.

Clinical Applications

1. **Osteoarthritis (Sandhigata Vata):** Snehana reduces pain, improves flexibility, and slows artilage degeneration.
2. **Rheumatoid Arthritis (Amavata):** After Ama pachana, Snehana alleviates joint stiffness, reduces inflammation, and nourishes muscles and joints.
3. **Cervical and Lumbar Spondylosis:** Reduces muscular spasm, pain, and neurological symptoms associated with nerve compression.
4. **Low Back Pain and Sciatica:** Enhances spinal flexibility, relieves muscular stiffness, and improves neuromuscular coordination.
5. **Frozen Shoulder:** Improves range of motion, reduces stiffness, and facilitates joint lubrication.
6. **Sports Injuries:** Promotes faster recovery, reduces chronic stiffness, and maintains muscle elasticity.

Discussion:

Musculoskeletal disorders (MSDs) are primarily caused by Vata dosha aggravation in Ayurveda, leading to pain (Shoola), stiffness (Stambha), weakness, reduced mobility, and progressive degeneration of musculoskeletal tissues. Disorders such as osteoarthritis, rheumatoid arthritis, spondylosis, low back pain, frozen shoulder, and sports injuries manifest the classical symptoms of Vata Vyadhi, including dryness (Rukshata), roughness (Khara), and tissue depletion (Kshaya). Conventional management often addresses only the symptomatic relief through analgesics, anti-inflammatory drugs, or physiotherapy, but Ayurveda focuses on the root cause—Vata imbalance, using Snehana as a cornerstone therapy.

Therapeutic Significance of Snehana, Snehana, or oleation therapy, is a therapeutic intervention that uses unctuous substances such as medicated oils (Taila), ghee (Ghrita), and fat to lubricate, nourish, and restore musculoskeletal tissues. Its application can be external (Bahya Snehana), such as Abhyanga (oil massage), Pichu (oil-soaked pad application), Parisheka (oil pouring), and Mardana (deep tissue massage), or internal (Abhyantara Snehana), such as Snehapana (oral intake of medicated ghee) and Anuvasana Basti (oil enema). The qualities of Snehana—Snigdha (unctuous), Guru (heavy), Mridu (softening), and Sheeta (cooling)—directly oppose the dry, rough, light, and mobile qualities of aggravated Vata. This makes it highly effective in musculoskeletal disorders, which are characterized by dryness, stiffness, and tissue degeneration. Snehana is also an important Purva Karma (preparatory therapy) before Panchakarma procedures, as it softens tissues, mobilizes Doshas from the peripheral tissues to the gastrointestinal tract, and enhances the efficacy of Shodhana therapies such as Basti, Virechana, and Vamana.

Conclusion

Snehana plays a pivotal role in the management of musculoskeletal disorders. Its dual action—external and internal—helps in:

Pacifying aggravated Vata dosha

Nourishing muscles, bones, marrow, and joints

Lubricating joints and enhancing mobility

Reducing pain, stiffness, and spasm

Preventing or slowing degenerative changes

By addressing both the root cause (Vata imbalance) and the manifestations (pain, stiffness, restricted movement), Snehana provides holistic, safe, and effective management of musculoskeletal disorders. It serves as a foundational therapy in Ayurvedic musculoskeletal care, both as a standalone treatment and as a preparatory intervention for Panchakarma therapies, significantly improving functional capacity and quality of life.

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20-CLINICAL ASSESSMENT OF GRIDHRASI BASED ON AYURVEDIC PRINCIPLES

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ABSTRACT-

Gridhrasi is painful and troublesome disease. If not treated on time it can led to serious conditions. Signs and symptoms of Gridhrasi are very similar to Sciatica. Factors contributing to Gridhrasi include unhealthy lifestyle choices, stress, incorrect posture, repetitive jarring movements, and prolonged traveling, all of which exert significant pressure on the spine and pelvis. Approximately 60%-80% of individuals experience low back pain, and 5% of them develop sciatica. The name of the disease itself reflects the characteristic walk of the patient, resembling a bird called Gridhra (vulture), where the legs become stiff and slightly bent because of discomfort. The illness is categorized under the section where diseases arise solely from the disturbance of Vata, specifically Nanatmaja Vatavyadhi. The occurrence rate of Gridhrasi in India is approximately 35%-40%. In spite of technological and pharmacological progress in contemporary medicine, numerous management issues for Gridhrasi persist. The likelihood of the disease returning is also quite high after surgery. In Ayurveda, numerous techniques are employed for the treatment of Gridhrasi, including simple, safe, and cost-effective options such as Bsheshaja, Snehana, Swedana, Siravedha, Agnikarma, and Basti. Thus, there is a requirement for secure and efficient therapy. Gridhrasi is classified as a Vatavyadhi, and it is also thought that no type of pain can exist without the presence of Vata. Gridhrasi is a highly painful condition, thus the dominance of Vata in its development is evident.

Keywords- Gridhrasi, Ayurveda, Samprapti

INTRODUCTION

Niruktti-

Further as in this disease the patient walks like the bird Gridhra and his legs become tense and slightly curved so due to the resemblance with the gait of a vulture, Gridhrasi term might have been given to this disease.

Gridhra is bird called as vulture in English. This bird is fond of meat and he eats flesh of an animal in such a fashion that he deeply pierce his beak in the flesh then draws it out forcefully, exactly such type of pain occurs in Gridhrasi and hence the name. “Gridhramapisyati”, ‘Syati’-as-‘Kshepana’. “Urusandhau Vatarogah”. 1

“Gridhraamiva Syaati Gachhati”. 2

The disease Gridhrasi is said to cause an abnormal throwing action in the affected leg. The Sanskrit word Syaati in Gridhrasi means throwing action. By this abnormality the gait of the patient is said to resemble the gait of bird vulture and hence the name Gridhrasi to this unique illness. Further the author of Amarasudha opines that this disease is characterized by morbidity of Vata Dosha affecting the hip joint.

Paribhasha of Gridhrasi

According to Acharya Charaka³ 'Gridhrasi' which is among the 'Nanatmaja Vyadhi of Vata' which was described by Acharya Charaka, in Sutrasthan Adhyay 20(Maharoga Adhyaya), which is characterized by Stambha, Ruka, Toda and Spandana. These symptoms initially affect Sphika (buttock) as well as posterior aspect of Kati (waist) and then gradually radiates to posterior aspects of Uru (thigh), Janu (knee), Jangha (calf) and Pada (foot).

According to Acharya Sushruta⁴ that two Kandra i.e. ligament of heel and all the toes are affected by vitiated Vata, So movement of the lower limb get restricted. This disease is known as Gridhrasi.

MATERIAL-**Samprapti of Gridhrasi:**

The way in which the Dosha gets Vitiated and the course it follows for the manifestation of disease is called Samprapti.⁵ Jaati and Aagati are its synonyms. A proper understanding of Samprapti is vital for the treatment since Chikitsa is illustrated in the Ayurvedic text is nothing but 'Samprapti Vighatana.⁶ Conventionally the Samprapti can be categorized in two types.

(1) Samanya (General) Samprapti: This is a common pathogenesis among various types of a single disease.

(2) Vishishta (Specific) Samprapti: This is a specific pathogenesis for a particular sub type of disease.

No detailed Samprapti of Gridhrasi is described in texts, which is based on the Pratyaksha Lakshana found in the patients. The description of Samprapti of Gridhrasi is restricted to the naming of the Dosha and Dushya involved in the causation of this illness. Gridhrasi is enumerated under the Nanatmaja type of Vatavyadhi. Also considering the Anubandha of Kapha Dosha in the Vatakaphaja type of Gridhrasi is described. Thus the clinical manifestation of this disease is produced due to the morbid Vata Dosha or the combination of Vata and Kapha Dosha.

Specific Samprapti of Vataja Gridhrasi:

According to Charaka, the Vataja Gridhrasi is separately produced by Vata Prakopak or Vata Vriddhi having symptom of Stambha, Ruka, Toda and Muhuspandanam.

Vata Prakopa Ahara Vihara gives rise to aggravation of Vata and at the same time, Ruksha, Khara, Laghu, Sheeta, Daruna, Vishada, Chala Guna of Vata suppresses the Snigdha, Guru, Mridu, Pichchhila and Sandra Guna of Kapha which leads to decrease of Sleshma. Decreased Sleshma in Kati-Pristha, Sakthi and in Kandara in turn result into aggravation of Vata. This way, Vata located in Kandara and produces the symptoms viz. Stambha, Ruka, Toda, Spandana in Kati, Pristha, Uru, Janu, Jangha and Pada in respective order.

Specific Samprapti of Vata-Kaphaja Gridhrasi:

During the description of Vata-Kaphaja Gridhrasi, Acharya Charaka explained symptoms i.e. Aruchi, Tandra and Gaurava in addition to the Vataja symptoms. Along with Vata Prakopaka Nidana, Kapha Prakopaka Nidana gives rise to Agnimandya, which leads to accumulation of Ama. This condition also

affects the Agni of Rasa Dhatu, resulting in the production of Kapha abundantly as it is Mala of Rasa Dhatu.

In this Samprapti, Prakupita Vata does not suppress the Kapha as explained in Vataja type of Gridhrasi. Here Prakupita Vata also leads to Agnimandya and ultimately helps in accumulation of Kapha. On the other hand Kha-vaigunya occurs due to Nidana Sevana in Kati, Pristha, Sakthi and Kandara. Thus, both vitiated Vata and Kapha by spreading get localized at the place of Kha- vaigunya. In the condition of Sthana-sanshraya that vitiated Vata gets masked (cloaked) by Kapha and produces symptoms of Vata-Kaphaja Gridhrasi.

SAPEKSHA NIDANA OF GRIDHRASI

Sapeksha Nidana is the comparison of similar features, which are found in many diseases. Here in case of Gridhrasi, there is no confusion in diagnosis, because Gridhrasi shows a very clear cut Lakshana Sammucchaya of radiating pain in the lower extremities, but there are some diseases which resembles with Gridhrasi. They are as follow –

- 1) In Gridhrasi, a distinct radiating pain which emerging from buttock and goes towards the feet along the course of sciatic nerve is found which is absent in other disease like Urustambha, Khalli etc.
- 2) In Gridhrasi, Sakthikshepa is being restricted, whereas in Urustambha patients feel heaviness in their thigh and difficulty in walking.
- 3) Urustambha is associated with Jwara, Chhardi, Aruchi, Agnimandya etc. which are not usually found in Gridhrasi.
- 4) In Khalli, the severity of pain is more than that of Gridhrasi and is generally proximal in nature.
- 5) In Khanja and Pangu, first and foremost symptom is paralysis which may be present in sciatica only as a late complication, and no history of pain may be present in Khanja and Pangu.
- 6) In Gudagata Vata, in addition to pain in foot, symptoms like Shosha, retention of faeces, urine and flatus, colic flatulence and formation of stone may also be present.⁷ In Gridhrasi, pain in Sphika, Kati, Uru.....emerges in respective order, however in Gudagata Vata there is no such respective order.

SADHYATA – ASADHYATA

The Sadhyata-asadhyata or prognosis of a disease depends on many factors such as the Bala of Nidana or Hetu, the strength of Dosha Prakopa, the Sthana of the disease, severity of signs and symptoms, duration of the disease etc. It also depends upon the age, sex, Rogamarga, Dhatudushti etc. These common rules are applicable in the case of Gridhrasi. In addition, Gridhrasi is a Vata Vyadhi and the Svabhava or natural trend of Vayu is also an important factor. Acharya Sushruta has counted Vatavyadhi as Mahavyadhi which is cured with difficulty. He also says that if the patient of Vatavyadhi develops the complication like Sunam (edema/inflammatory), Suptatvachan (tactile senselessness), Bhagna (Fracture), Kampa (tremors), Adhamana (distention of abdomen with tenderness) and pain in internal organs, then he doesn't survive.⁸

According to Acharya Charaka, if Vatavyadhi is connected with Sandhichuti, Kunjanam, Kubjata, Ardita,

Pakshaghata, Anshashosha, Panguta and those which are Majja and Asthigata are usually cured with difficulty or even incurable.

In disease Gridhrasi, the vitiation occurs in the Sphika, Kati, Prishtha regions involving the Sandhi and Sandhibandhana in this area which will ultimately give rise to the vitiation of the Gridhrasi Nadi which is a structure developing from the Majja. So, Gridhrasi by nature is Kashtasadhya. Still however if the patient comes earlier for the treatment and if given prompt proper treatment in sufficient dose and duration, then the patient is likely to be cured or less likely to suffer from a subsequent attack of pain. In case the changes in the spinal joints or an advanced nature of the disease or if the Gridhrasi Nadi got intense vitiation, then even the best treatment is not likely to be cured. When the Gridhrasi is associated with Vata and Kapha Dosha, the Chances of cure are easier than that when it is occurred due to only Vata Dosha.

CHIKITSA

Chikitsa siddhanta of vatavyadhi w.s.r. to Gridhrasi, The treatment of the disease is called Chikitsa. The first and the foremost principle to be adopted in the treatment of each and every disease is to avoid the Nidana of the disease i.e. Nidana Parivarjana.

Secondary the intensity of the Dosha Prakopa should be considered before deciding the line of treatment. If the Dosha Prakopa is minimum Langhana Chikitsa is enough, if the intensity of Dosha Prakopa is moderate Langhana and

Pachana treatment is given. If Dosha Prakopa is higher then, Shodhana treatment is decided. Gridhrasi being a Vatavyadhi, the general treatment of Vatavyadhi is applicable to Gridhrasi also. In the Upakrama of Vata, Snehana, Swedana, Mrudu Samshodhana and Basti have been advised.

Vagbhattacharya, in the Sutra of Vatopakrama has advised Madhura, Amla, Lavana and Ushna Ahara, Oils, Ghrita with jaggery, starch, Abhyanga, Parisheka, Mardana and Basti. There are different types of Snehana, Swedana only. Chikitsa is nothing but measures antagonistic to Roga.

It also acts antagonistic to the causative factor of the disease. It is not only targeted at curing the disease but also to bring about homeostasis of morbidly vitiated Dosha. The Chikitsa can be initiated before the manifestation of actual disease itself from the stage of Sanchaya provided they are identified. If the treatment is started at initial stage itself, the disease will not progress further resulting in complete remission of the disease. Therefore the treatment of any disease should be started earlier in order to avoid disease going into chronic stage and avoid incurability which is the biggest problem with Vatavyadhi. Gridhrasi is an identified Vataja Nanatmaja Vyadhi. Treatment of the same also should be initiated faster to avoid lingering and relapsing of the same. Gridhrasi being a Vatavyadhi, the general line of treatment for Vatavyadhi is indicated for Gridhrasi also. There are also specific line of management explained for Gridhrasi, which are target oriented and help in relieving the cardinal signs and symptoms of the disease. In the literature, authors have mentioned various types of treatment. Among those Ekavidha type of Chikitsa, that is Nidanaparivarjana is one among. In case of Gridhrasi, already avoiding the Vatavyadhi Nidana/Vata Prakopaka Karana can help by preventing further aggravation of the condition

and thereby arresting the disease process there itself. But this itself is insufficient, as the disease is manifested which is nothing but as a result of morbidity of Dosha and Dushya, some other methods have to be thought off so as to bring the vitiated Dosha to normalcy and thereby relieving the disease. And therefore, simply drugless therapy is of no use. One is forced to take the shelter of various treatment modalities, which help in removing the morbid Dosha. In a broad sense, what which we practically see today can be followed is as follows.

1. Antahparimarjana
2. Bahirparimarjana
3. Shastrapranidhana.

SPECIFIC TREATMENT OF GRIDHRASI⁹

Generally Snehana, Swedana, Vamana, Virechana, Niruha and Anuvasana Basti, Siravedha, Raktamokshana, Agnikarma and Shastrakarma are advised by different Acharyas. The following table shows as to which Karmas are advocated by which classics.

Treatment	Ch.	Su.	A.H.	B.P.	Y.R.	H.S.	B.S.	C.D.
Snehana	-	-	-	-	-	+	+	+
Swedana	-	-	-	-	-	+	-	+
Vamana	-	-	-	+	-	-	-	+
Virechana	-	-	-	+	-	-	-	+
Niruha Basti	+	-	-	-	-	-	-	-
Anuvasana Basti	+	-	+	+	+	-	+	+
Siravedha	+	+	+	-	+	-	-	+
Raktamokshana	-	-	-	-	-	+	+	-
Agnikarma	+	-	+	-	+	+	-	+
Shastrakarma	-	-	-	-	-	-	-	+

DISCUSSION-

In Charaka Samhita, Basti Karma – Niruha and Anuvasana Basti, Siravedha and Agnikarma (between Kandara and Gulfa) has been mentioned in the treatment of Gridhrasi. Sushruta has advised Siravedha at Janu after Sankochana (flexion) in Gridhrasi.

Ashtanga Sangraha and Ashtanga Hridaya have also advised Siravedha four Angula above and below the Janu. They mentioned Agnikarma and Anuvasana Basti also. Chakradatta has given the treatment of Gridhrasi in details. He has stressed that Basti should be administered after proper Agni Dipana, Pachana and Urdhva Shodhana. He has said that administration of Basti before Urdhvasuddhi (purification by Vamana, Virechana etc.) is meaningless. He has mentioned a small operation with prior Snehana and Swedana to remove Granthi in Gridhrasi and also Siravedha four Angula below Indrabasti Marma. If not

relieved by this treatment then Agnikarma at Kanishthika Anguli of Pada has been suggested. He has given number of formulations like Churna (powder) of Dashmoola, Bala, Rasna, Guduchi and Sunthi along with Eranda taila. Decoction of Sephalika or decoction of Panchamool with Eranda taila and Trivrita Ghrita, Rasnadi Guggulu, Trayodashanga Guggulu, Chyagaladya Ghrita, Saindhavadya taila, Kubjaprasarani taila. Also recipes like Erandaphala Payas and Vartaku Prayoga (vegetable of Bringles in castor oil) etc. are suggested. Bhavaprakasha has advised Vamana and Virechana before administration of Basti. The patient should take Gomutra with castor oil for one month. Also Taila, Ghrita, Matolonga and ginger Swarasa taken with Chukra and Guda are useful in Shula of Kati, Uru, Prishtha, Trika and Gulma, Gridhrasi and Udavarta. Eranda Churna boiled with milk and the decoction of Erandamoola, Bilva, Brihati and Katakari is mentioned for the chronic Gridhrasi. The decoction of Sinhasya, Danti and Krutamalaka along with Eranda Taila is advised for the Gridhrasi patients who can not walk. Specific treatment for Vata-Kaphaja Gridhrasi has been given. He has advised Gomutra + castor oil + Pippali Churna to be taken for a long period to eliminate Vata-Kaphaja Gridhrasi.

Pathya Apathya Pathya:**Pathya:**

- **Ahara:** Anna Varga: Kulathi, Masha, Godhuma, Raktashali, Navina Tila, Purana
- Shalyodana. Phala Varga: Amla, Rasayukta Phala, Dadima, Draksha, Jambira, Badara. Shaka Varga : Patola, Shigru, Rasona. Dugdha Varga: Kshira, Ghrita, Navneeta.
- **Vihara:** Sukhoshna Pariseka, Nirvata Sthana, Samvahana, Avagahana, Abhyanga, Brahmacharya, Ushna Pravarana, Agni Aatapa Sevana, Snigdha- Ushna Lepa.

Apathya:

- **Ahara:** Kalaya, Chanaka, Kanguni, Kodrava, Shyamaka, Nivara, Nishpava Beeja, Rajmasha, Karira, Jambu, Trinaka, Tinduka, Shushka Mamsa, Dushita Jala.
- **Vihara:** Vegadharana, Vyavaya, Vyayama, Vamana, Raktamokshana, Prajagarana, Diwa- swapna, Adhava, Ati- Gaja-Ashwa-Ushtra-Yana Sevana.

CONCLUSION

Gridhrasi is often regarded in society as a significant issue. Gridhrasi falls within the 80 classifications of Nanatmaja Vatavyadhi. Vyana Vayu plays a crucial role in the development of the condition Gridhrasi. Gridhrasi is comparable to sciatica in contemporary medicine. Allopathic treatment is merely short-term and appears to be an illusion. Ayurvedic treatment eliminates the underlying issue and provides significant relief. In Ayurvedic classical texts, our Acharyas have provided numerous unique therapeutic methods for particular ailments as well as countless remedies. Ayurveda provides numerous effective alternatives for the management of Gridhrasi. To meet the demands of the Ayurvedic field and to discover safer and more effective treatments for Gridhrasi.

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21-A Critical Analysis of Musculoskeletal Conditions in Brihatrayee

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Abstract

Musculoskeletal disorders (MSDs), which present as persistent pain, stiffness, and functional impairment, are a major global health concern. According to Brihatrayee—Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya—these are mainly categorized under Vatavyadhi in Ayurveda because of Vata dosha vitiation. This thorough analysis critically assesses how well the traditional explanations of etiology (nidana), pathogenesis (samprapti), symptomatology, and management (chikitsa) align with contemporary MSDs such as sciatica and osteoarthritis. Although there is still a lack of empirical support, holistic therapies like snehana, swedana, basti, and marma chikitsa show promise for both prevention and treatment. Care for MSDs could be revolutionized by combining Brihatrayee principles with new research.(1)

Keywords=Musculoskeletal disorders ,Brihatrayee,Vatavyadhi

Introduction

Over 1.7 billion people worldwide suffer from musculoskeletal disorders, which result in disability-adjusted life years and financial hardships. These correspond with Vatavyadhi in Ayurveda, where aggravated Vata impairs joint function, tissue integrity, and movement. Brihatrayee texts offer fundamental insights: Ashtanga Hridaya practical synthesis, Sushruta surgical anatomy via marma, and Charaka's emphasis on internal medicine.

In classical texts Acharya has described the disease in Vatavyadhi chapter under the heading of Sandhigata Vata. Sandhigata vata and OA are quite similar in terms of the disease's nature and symptomatology. The illnesses caused by morbid Vata Dosha are more prevalent in the elderly, or Jaravastha. In addition to ageing, improper food, injuries, cold exposure, suppression of natural urges, and other factors can aggravate Vata, causing it to take up residence in the joints. Because of its Rooksha (~dryness), it degenerates the joints, can lead to the early loss of cartilage, and dries up the lubricating synovial fluid inside the joint capsule. One of the outcomes of this procedure is Sandhivata. It is characterized by Shoola (~pain), Vatapurnadruti Sparsha (~sound resembling that made when rub against a balloon or transparent container filled with air), Shotha (~swelling), Vedana during Prasaran and Akunchan (~painful movement including extension and flexion, Atopa (~abnormal sounds due to damage of joints or crepitus), Sandhianta (restriction of joint movements). There is involvement of Vata Doasha

(~Doṣha responsible for movement and cognition), Madhyam Roga Marga, and Dhatu Kshaya (~diminution of major structural components of body) in Sandhivata. Therefore, it is regarded as Kashtsadhya Vyadhi (~disease curable with difficulty)(2)

This review evaluates their contributions critically, pointing out gaps in standardization for global applicability and strengths in holistic pathogenesis.

charya Vagabhata has described a common treatment for Vata Vyadhi, which involves the repeated use of Basti (~Enema), Mridu Virechana (~Mild Purgative), Snehana (~Oleation therapy), and Swedana (~Sudation therapy)(3)

Acharya Sushruta has explicitly mentioned the therapies for Sandhigata Vata like Snehana (~Oleation therapy), Upanaha (~application of pultice), Agnikarma (~thermal cauterization), Bandhana (~bandaging), and Unmardana (~manual massage in ascending direction)(4)

Materials and Methods

Qualitative synthesis of primary Brihatrayee sources accessed through verified digital platforms such as Caraka Samhita Online was used in this systematic review. Sanskrit terms such as "Vatavyadhi," "Sandhigata Vata," "Snayugata Vata," "Gridhrasi," and "marma chikitsa" were used in the search strategy for Chikitsa, Nidana, and Sharira Sthanas. PRISMA-adapted guidelines for traditional texts were used to supplement analysis with secondary literature from PubMed, Ayurvedic journals (JAIMS, IJAPR), and Google Scholar (2015-2026). Thematic coding was used in critical appraisal to evaluate dosha correlations, therapeutic efficacy, and contemporary anatomical parallels.

Charaka Samhita

More than 80 disorders resulting from Vata provocation via dhatukshaya janya (tissue depletion) or avarana janya (obstruction) pathways are listed in Charaka's Vatavyadhi Chikitsa (Chi 28). Important MSDs consist of:

Gridhrasi: A sciatica-like pain that radiates from the hip to the foot, accompanied by stiffness (stambha) and khanjata (limping).

Pakshaghata: Hemiplegia accompanied by tremors and unilateral wasting.

Manyastambha: Torticollis with stiff neck.

Sandhigata Vata: Similar symptoms to osteoarthritis, such as crepitus, tenderness, and limited movement.

Nidana(causes): trauma, maha abhishyandi (heavy indigestibles), vegadharana (suppressed urges), and ruksha ahara (dry foods).

Samhita Sushruta

Sushruta incorporates marma (107 vital points) for MSDs, categorizing injuries as marmaghata that result in either chronic pain or immediate disability. Sandhigata Vata joint effusion, Snayugata Vata tendon

spasms, and bone aches are all caused by Asthigata Vata. Therapeutics use agnikarma (cauterization) to combine Vata shamana with shalya (surgery)

Ashtanga Hridaya

Vagbhata synthesizes predecessors, describing Kapha-Vata composites in khalli (radiculopathy) and amavata (rheumatoid-like). focuses on basti as ardhachikitsa for Vata, using formulations that are site-specific, such as kati bast

Text	Key MSDs	Pathogenesis	Signature Therapy
Charaka Samhita carakasamhitaonline+1	Gridhrasi, Pakshaghata	Dhatukshaya/Avarana	Snehana-Basti
Sushruta Samhita	Marmaghata, Snayugata Vata	Trauma-Marma injury	Agnikarma- Marmani
Ashtanga Hridaya	Amavata, Khalli	Vata-Kapha dushti	Kati/Janu Basti ijapr

Discussion

Gridhrasi mimics L5-S1 radiculopathy, while Marma parallels neurovascular bundles and suggests gate-control analgesia through stimulation, demonstrating Brihatrayee's exceptional phenomenological accuracy. Inflammation-degeneration cascades are predicted by pathogenic models (Vata gati vikriti in srotas). Through the COX inhibition of oleo-resins, therapeutics such as bala taila basti lower VAS scores in trials, competing with NSAIDs. Crucially, dosha assessment lacks biomarkers, and Vata monocausality ignores Pitta-Kapha synergies in inflammatory arthritides. There are no RCTs for traditional protocols, which puts case series at risk for publication bias. Reinterpretation is necessary for anatomical mismatches (snayu ≠ precise ligaments). However, Rasayana's dhatu poshana supports hybrid trials and is in line with nutraceuticals.

22-Conceptual Ayurvedic Framework for Clinical Evaluation of Developmental Dysplasia of the Hip: A Balrog-Based Integrative Model

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Abstract :

Background: Developmental Dysplasia of the Hip (DDH) comprises developmental abnormalities of the hip joint presenting during infancy. Structural alterations may range from mild acetabular insufficiency to complete femoral head displacement. Delayed identification can compromise long-term locomotor function.

Objective: To formulate an Ayurvedic clinical assessment model for DDH grounded in Balrog principles and to establish conceptual parallels with modern orthopedic evaluation.

Methods: A theoretical analytical review was conducted using classical Ayurvedic sources, including the Charaka Samhita and Sushruta Samhita, along with contemporary pediatric orthopedic literature. Core doctrinal elements such as Janmabala Pravritta Vyadhi, Beeja Dushti, Dosha predominance, Dhatu involvement, and Srotas pathology were interpreted and correlated with established clinical manifestations of DDH.

Results: DDH aligns conceptually with a Vata-predominant congenital disorder involving Asthi and Majja Dhatu and manifesting as Sandhi Vikriti. Clinical features including limited abduction, limb asymmetry, and altered gait show parallels with Cheshta Hani, Vakraata, and Sandhi Shaithilya.

Conclusion: Ayurvedic assessment emphasizes developmental functionality, tissue integrity, and Dosha balance. An integrative diagnostic perspective may enhance early functional recognition and contribute to comprehensive pediatric musculoskeletal care.

Keywords: Developmental Dysplasia of Hip, Balrog, Asthi Dhatu, Vata Dosha, Congenital Disorders, Integrative Orthopedics

Introduction :

Developmental Dysplasia of the Hip represents a spectrum of abnormalities affecting the morphology and stability of the immature hip joint. The disorder may present as acetabular underdevelopment, joint laxity, or complete dislocation if not corrected in early life. Without timely management, affected children may develop abnormal gait patterns, chronic discomfort, and early degenerative changes [1].

Risk determinants frequently cited include female gender, breech positioning, reduced intrauterine space, and hereditary predisposition [2]. Contemporary diagnosis relies upon systematic neonatal screening and confirmatory imaging modalities such as ultrasonography in early infancy and radiography in later stages [3].

Classical Ayurveda discusses congenital anomalies under the classification of Janmabala Pravritta Vyadhi, attributing certain conditions to defects in Beeja (reproductive elements) and intrauterine influences [4]. Within Balrog (Kaumarbhritya), emphasis is placed on progressive tissue nourishment, motor development, and maintenance of Dosha equilibrium—particularly Vata, which governs movement. The present study attempts to synthesize these principles into a structured clinical framework relevant to DDH.

Materials and Methods :

This work is a conceptual interpretative study integrating classical Ayurvedic doctrine with contemporary orthopedic knowledge.

Source Materials

1. Foundational Ayurvedic texts:

- * Charaka Samhita
- * Sushruta Samhita

2. Peer-reviewed orthopedic literature and established clinical guidelines on DDH [1–3].

Analytical Approach

The following Ayurvedic constructs were examined:

- Janmabala Pravritta Vyadhi
- Beeja and Beeja-bhaga Dushti
- Dosha predominance
- Dhatu integrity
- Srotas involvement
- Roga–Rogi Pariksha in pediatric context

These were comparatively mapped against recognized clinical signs of DDH to formulate an integrative interpretative model.

Results :

1. Ayurvedic Conceptual Correlation

DDH may be interpreted as:

- A congenital pathological state (Janmabala Pravritta Vyadhi)
- A manifestation of hereditary or intrauterine defect (Beeja Dushti)
- Structural disturbance of Asthi and Sandhi

- A disorder primarily influenced by aggravated Vata

Intrauterine Vata imbalance and compromised Dhatu nourishment may theoretically hinder proper joint formation.

2. Dosha-Based Interpretation

Vata Dosha, responsible for motion and neuromuscular regulation, appears central to the manifestation of instability and restricted movement. Its derangement may produce impaired joint congruity and locomotor asymmetry. Kapha involvement may contribute to delayed structural maturation and tissue laxity in certain presentations.

3. Dhatu-Level Analysis

Dhatu	Functional Interpretation
Asthi	Incomplete structural development of acetabulum and femoral head
Majja	Compromised joint stability and coordination
Mamsa	Insufficient muscular support around hip joint

The disturbance primarily centers on Asthi–Majja axis with secondary Mamsa weakness.

4. Srotas Consideration

Asthivaha and Majjavaha Srotas appear predominantly affected, with possible contribution from Mamsavaha Srotas. Structural deviation accompanied by impaired functional output reflects Srotodushti.

5. Clinical Feature Mapping

Modern Clinical Sign	Ayurvedic Equivalent
Restricted hip abduction	Cheshta Hani
Limb shortening or asymmetry	Vakrata
Hip instability	Sandhi Shaithilya
Abnormal gait	Vata Prakopa manifestation

6. Balrog-Based Pediatric Evaluation

Ayurvedic pediatric examination includes:

- Vaya (developmental stage assessment)
- Bala (functional strength evaluation)

- Sara (quality of Asthi–Majja tissues)
- Satva (child’s behavioral response to discomfort)

Observation of motor milestones—rolling, crawling, supported standing, and walking—serves as a functional screening parameter.

Discussion :

Modern orthopedic evaluation of DDH focuses predominantly on anatomical configuration and radiographic parameters [1,3]. However, functional assessment remains equally important during early infancy.

The Charaka Samhita explains congenital disorders through Beeja Dushti and intrauterine influences [4]. Since Vata governs movement and neuromuscular coordination, its prenatal imbalance may theoretically disturb joint stability and structural alignment.

Unlike radiology-centered evaluation, Ayurvedic examination integrates tissue nutrition (Dhatu poshana), developmental progression, and Dosha equilibrium. This broader developmental perspective may aid in early functional recognition before pronounced structural deformity manifests.

Nevertheless, severe anatomical displacement requires timely orthopedic correction in accordance with contemporary clinical guidelines [3]. Therefore, Ayurveda should be viewed as complementary, contributing preventive and supportive strategies rather than replacing surgical intervention.

Conclusion :

Developmental Dysplasia of the Hip may be interpreted within Ayurveda as a Vata-dominant congenital disorder involving Asthi and Majja Dhatu with consequent Sandhi disturbance. Ayurvedic clinical assessment prioritizes developmental milestones, functional symmetry, and tissue integrity. An integrative framework combining classical Ayurvedic principles with modern orthopedic diagnostics may strengthen early identification and comprehensive management of pediatric hip abnormalities.

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23-Effect of Rasnasaptaka Kwatha on Vāta-Kapha Dominant Musculoskeletal Disorders

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Abstract

Musculoskeletal disorders are commonly associated with Vāta and Kapha Doṣa vitiation in Ayurveda, leading to pain, stiffness, swelling, and restricted movements. Rasnasaptaka Kwatha is a classical Ayurvedic formulation indicated in Vātavyādhi and Sandhigata Vikāra. The present paper aims to study the effect of Rasnasaptaka Kwatha on Vāta-Kapha dominant musculoskeletal disorders from an Ayurvedic perspective.

Introduction

Musculoskeletal disorders are a major cause of disability worldwide. In Ayurveda, these disorders are mainly categorized under Vātavyādhi, Sandhigata Vāta, and Āmavāta. Vāta-Kapha dominance results in symptoms such as śūla (pain), stambha (stiffness), śoṭha (swelling), and gaurava (heaviness). Rasnasaptaka Kwatha is frequently prescribed to pacify Vāta and Kapha Doṣa and relieve these symptoms.

Aim

To evaluate the effect of Rasnasaptaka Kwatha in Vāta-Kapha dominant musculoskeletal disorders.

Objectives

1. To understand the role of Vāta and Kapha Doṣa in musculoskeletal disorders.
2. To analyze the properties and actions of Rasnasaptaka Kwatha.
3. To assess the therapeutic effect of Rasnasaptaka Kwatha in managing pain, stiffness, and inflammation.

Materials and Methods

This study is a conceptual and literary review based on classical Ayurvedic texts such as Charaka Samhita, Sushruta Samhita, and Bhaishajya Ratnavali, along with relevant modern research articles.

Composition of Rasnasaptaka Kwatha

The formulation consists of Rasna, Guduchi, Aragvadha, Devadaru, Trikantaka, Eranda Moola, and Punarnava. These drugs collectively possess Vāta-Kapha śāmaka, śothahara, and śūlahara properties.

Pharmacological Actions

Rasnasaptaka Kwatha acts as Vāta-Kapha śāmaka, āma-pācaka, vedanāsthāpaka, and śothahara. It improves joint mobility and reduces inflammation.

Discussion

The ingredients of Rasnasaptaka Kwatha possess uṣṇa vīrya, laghu and snigdha guṇa, which help in pacifying aggravated Vāta and Kapha Doṣa. The formulation reduces āma, enhances agni, and nourishes asthi and sandhi dhātu, thereby improving musculoskeletal function.

Conclusion

Rasnasaptaka Kwatha is an effective Ayurvedic formulation for managing Vāta-Kapha dominant musculoskeletal disorders. Its multidimensional action helps in reducing pain, stiffness, and inflammation, improving the quality of life of patients.

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24-Agnikarma and Raktamokshana in Musculoskeletal Pain Management: An Evidence-Based Review

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Abstract

Background

Musculoskeletal pain disorders are a major cause of disability worldwide and often require long-term pharmacological management, which is associated with significant adverse effects. Ayurveda describes pain predominantly as a manifestation of *Vata* vitiation, frequently associated with *Asthi* and *Majja Dhatu Dushti*. *Agnikarma* and *Raktamokshana* are important para-surgical procedures described for pain-dominant conditions.

Materials and Methods

An evidence-based narrative review was conducted using classical Ayurvedic texts (*Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya*) and electronic databases including PubMed, Scopus, and AYUSH Research Portal. Clinical studies, observational trials, and reviews evaluating *Agnikarma* and *Raktamokshana* in musculoskeletal pain were included.

Results

Available evidence suggests that *Agnikarma* provides rapid and sustained pain relief in localized, degenerative musculoskeletal disorders, while *Raktamokshana* is effective in inflammatory and *Rakta*-associated pain conditions. Both modalities demonstrate favorable safety profiles when appropriately indicated.

Conclusion

Agnikarma and *Raktamokshana* are effective Ayurvedic para-surgical interventions for musculoskeletal pain management. These therapies offer targeted, cost-effective alternatives or adjuncts to conventional analgesic therapy. Well-designed randomized controlled trials are required to strengthen the evidence base.

Keywords

Agnikarma; *Raktamokshana*; Musculoskeletal pain; Para-surgical procedures; Ayurveda; Vata disorders; Pain management.

Introduction

Musculoskeletal disorders constitute one of the leading causes of chronic pain, functional limitation, and disability globally, significantly impacting quality of life and economic productivity. Conventional management primarily relies on non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and analgesics, which are associated with gastrointestinal, renal, and cardiovascular adverse effects, particularly with long-term use. In Ayurveda, pain (*Vedana*) is predominantly attributed to *Vata Dosha* vitiation, often involving *Asthi* and *Majja Dhatu*, resulting in conditions such as *Sandhigata Vata*, *Gridhrasi*, and *Snayugata Vata*. Among the para-surgical interventions described by *Acharya Sushruta*, *Agnikarma* (therapeutic cauterization) and *Raktamokshana* (therapeutic bloodletting) are specifically indicated for pain-dominant and inflammatory conditions.

Despite increasing clinical utilization, systematic appraisal of the evidence supporting these procedures in musculoskeletal pain remains limited. This review aims to critically analyze classical references and contemporary clinical evidence to evaluate the role of *Agnikarma* and *Raktamokshana* in musculoskeletal pain management.

Materials and Methods

Study Design

Evidence-based narrative review.

Data Sources

- Classical Ayurvedic texts: *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*
- Electronic databases: PubMed, Scopus, AYUSH Research Portal, Google Scholar

Inclusion Criteria

- Clinical studies involving *Agnikarma* and/or *Raktamokshana*
- Musculoskeletal pain conditions (degenerative or inflammatory)

- Human studies published in English

Exclusion Criteria

- Non-musculoskeletal indications
- Animal or experimental studies without clinical correlation
- Non-systematic anecdotal reports

Results

Role of *Agnikarma* in Musculoskeletal Pain

Agnikarma is indicated in conditions where pain is localized, chronic, and predominantly *Vata*-mediated. Classical texts describe it as superior to surgical and medicinal therapies in pain control due to its ability to prevent recurrence.

Clinical Outcomes Reported:

- Significant reduction in pain intensity
- Improvement in joint mobility and functional capacity
- Sustained analgesic effect with fewer recurrences

Probable Mechanism of Action:

From an Ayurvedic perspective, the *Ushna* and *Tikshna Guna* of *Agnikarma* pacify aggravated *Vata* and remove *Srotorodha*. From a biomedical viewpoint, localized thermal stimulation may modulate nociceptive pathways, improve microcirculation, and reduce muscle spasm.

Role of *Raktamokshana* in Musculoskeletal Pain

Raktamokshana is advocated in conditions involving *Rakta Dushti* and *Vata-Kapha* association, particularly when inflammation and congestion are predominant.

Clinical Outcomes Reported:

- Reduction in inflammatory pain and swelling
- Improved range of motion
- Decrease in stiffness and tenderness

Probable Mechanism of Action:

Ayurvedically, *Raktamokshana* eliminates vitiated *Rakta* and alleviates *Dosha* accumulation. Biomedically, it may reduce inflammatory mediators, improve local circulation, and decrease tissue congestion.

Discussion

The findings of this review indicate that *Agnikarma* and *Raktamokshana* serve distinct yet complementary roles in musculoskeletal pain management. *Agnikarma* is particularly beneficial in degenerative and localized pain conditions, whereas *Raktamokshana* is more effective in inflammatory and vascular components of pain.

Correlation of Ayurvedic principles with modern pain physiology suggests parallels between *Vata* aggravation and neuromuscular dysfunction, as well as between *Rakta Dushti* and inflammatory pathology. Compared to long-term NSAID therapy, these para-surgical procedures offer targeted intervention with minimal systemic adverse effects.

However, limitations such as small sample sizes, lack of standardized protocols, and limited randomized controlled trials restrict generalizability. Integration of standardized outcome measures and multicentric trials is essential to establish wider clinical acceptance.

Conclusion

Agnikarma and *Raktamokshana* are effective Ayurvedic para-surgical modalities for the management of musculoskeletal pain. When judiciously selected based on *Dosha* predominance and disease pathology, these procedures provide rapid, sustained pain relief with favorable safety profiles. Further high-quality clinical trials are required to strengthen the evidence base and facilitate integrative pain management strategies.

Declarations

Conflict of Interest

The author declares no conflict of interest.

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25-Efficacy of Herbal Vedanasthapak gel to relieve pain in patients of Janusandhishool.

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Abstract – Joint pain especially Knee Joint pain is very common in people of specific age group due to various factors responsible for this condition. Lot of Pain relieving oils, ointments, etc are available in market now a days. Here we have introduced the herbal Vedanasthapak gel which consist of Extract of Vedanasthapak Gana described by Acharya Charaks and used it in gel form. This preparation was made and was implemented on 30 patients complaining of Jaanusandhi shool (knee joint pain). Patients were told to apply the gel once a day and observation was done for 7 days. it was observed that 26 patients out of 30 showed satisfactory results in relieving pain after its regular application.

Hence this herbal Vedanasthapak gel showed positive results in patients complaining of knee joint pain without any irritation to skin and easy application.

Keywords – Vedanasthapak , gel pain , knee joint , Janusandhishool.

Introduction – ‘Pain’ is an unpleasant sensory and emotional experience resembling or associated with tissue damage. Almost 22- 35% of the population experience knee joint pain which is very common scenario these days where one of the major cause is obesity with poor nutrition. Other causes may include general wear and tear due to physical activities like lifting, standing, quick pivoting moments done by athletes, ligament injuries etc.

There are various topical formulations available which act as pain relieving agents like sprays, oils, ointments, lepas etc. Here we introduced aloe based vedanasthapak extract gel which will help in this painful conditions. Various studies had been done on Vedanasthapak Gana (1) which proved its analgesic and anti inflammatory effects and hence used it in gel based form in 30 patients.

Materials and Methodology

Vedanasthapak Gana has 10 indigenous drugs which include Shal , Katfal , Kadamba , Padmak , Tumbi , Mochras , Shirish , Vanjul , elvaluk , Ashok.(cha su 4/47).

Plant	Rasa	Guna	Virya	Vipak	Dosh Karma
1)Shal (Shorea robusta)	Kashay , madhura	Ruksha ushna	Sheet	Katu	Tridoshhara
2) Katfal (Myrica esculanta)	Kashay, katu, tikta	Laghu , tikshna	Ushna	Katu	Tridoshhar
3) Kadamba (Neolamarckia cadamba)	Tikta Kashay	Ruksha	Sheet	Katu	Tridoshhara
4)Padmak (Prunus cerasoides)	Kashay Tikta	Laghu Snighdha	Sheet	Katu	Kapha pittahara
5) Tumbi (Lagenaria siceraria)	Tikta	Laghu Ruksha	Sheet	Katu	Vatapittahara
6) Mochras (Bombax ceiba)	Kashay	Laghu Snighdha	Sheet	Madhur	Vatapitta shamak
7)Shirish (Albizia lebbek)	Kashay Tikta Madhura	Laghu Ruksha Tikshna	Ishat ushna	Katu	Tridoshahara
8) Vanjul (Salix tetrasperma)	Kashay	Ruksha	Sheet	Katu	Tridoshhara
9) Elvaluk (Prunus cerasus)S	Kashay	Laghu	Sheet	Katu	Kapha pittahara
10) Ashok (Saraca asoca)	Kashay Tikta	Laghu Ruksha	Sheet	Katu	Kapha Pittahara

Preparation of extract was being done of 8 drugs of Vedanasthapak Gana except Vanjula and Elvaluk due to its unavailability .Distillation was done by the Soxhlet for obtaining 100% concentration. This concentrated extract of each drug was mixed with the extract of Aloevera in same quantity. Later gel was prepared out of this total extract and preservatives were added. Gel was stored and packed in the airtight containers for use.

Analytical Test

No	Test Name	Result Obtained in %
1.	Ph	6.0
2.	Total solids	8.92
3.	Specific gravity	0.8962
4.	Refractive Index	1.3236
5.	Viscosity in cp	2.0152

Tests for the extracts were done and all parameters were within range for further preparation of gel.

Vedanasthapak Gel

No	Test name	Result obtained in %
1.	Ph	6.1
2.	Loss on drying @ 110 c	93.0
3.	Thermal stability @ 40 c	Passes the test
4.	Abrasiveness	Passes the test
5.	Spreadability	Passes the test

Inclusion Criteria -

Patients with complaints of knee joint pain.

Patients of age group 40-70yrs.

Exclusion criteria

Patients complaining of pain other than knee joint.

Patients with open wounds or cuts.

Not willing to be part of this study.

Patients were told to apply this Vedanasthapak gel once a day. Application was done by gently massaging the localized area for sometime. Data of 30 patients was collected. No internal medications were taken.

Assessment criteria

NRS[numerical rating scale] for Pain

Sr no	Category	Symptoms	Score	NRS
1.	No pain	No complaint of pain	0	0
2.	Mild pain	Bearable pain	1	1-3
3.	Moderate pain	Pain bearable up to some extent	2	4-7
4.	Severe pain	Unbearable pain	3	8-10

VRS[verbal rating scale] for tenderness

Sr no	Category	Signs	Score
1.	No tenderness	No complaints.	0
2.	Mild tenderness	On firm pressure	1
3.	Moderate tenderness	On gentle pressure	2
4.	Severe tenderness	Denies touching	3

Observation table

Days	1	2	3	4	5	6	7
Pain	+++	+++	++	+	+	+	
Tenderness	+++	+++	++	++	+	+	

Result

Out of 30 patients, 28 patients experienced much better relief for knee joint pain irrespective of any internal medication. Some of them experienced anti-inflammatory action of the Vedanasthapak gel by reducing the swelling as well as pain too. 2 patients haven't got any expected positive results after application.

Observation showed that Vedanasthapak Gel proved its efficacy on third day onwards on its application.

Conclusion

Hence it can be concluded that vedanasthapak gel can be formed effectively by using the extract without suppressing its analgesic and anti-inflammatory effect.

Easy for application and quick absorption hence proved to be efficient in all way.

Vedanasthapak gel proved to be helpful in majority of the patients by not only relieving their pain but also curing the tenderness.

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26-Comparative Review of Muscle Strain Healing in Modern Medicine and Ayurveda.

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INTRODUCTION:

One of the most frequent musculoskeletal injuries that affect both athletes and the general public is a muscle strain. They happen when muscle fibers are ripped or overextended, typically as a result of repetitive stress, abrupt trauma, or heavy loads [1,2]. Depending on the severity of the injury, localized pain, edema, bruising, and reduced function are the clinical manifestations of muscle strains, which can range from minor discomfort to severe disability [3]. These injuries are especially important because they impair strength, mobility, and general quality of life and can repeat if improperly treated [2, 3].

Based on the degree of fiber damage, modern medicine divides muscle strains into three categories: grade I (mild), grade II (moderate), and grade III (total rupture) [3]. The inflammatory phase, the proliferative phase, and the remodeling phase are the three overlapping stages of healing, each of which is distinguished by unique cellular and molecular mechanisms that restore tissue integrity and function [1,4,5]. In order to reduce pain and edema while promoting tissue healing, management usually entails rest, cryotherapy, compression, elevation (RICE), analgesics, and physiotherapy [2,4].

Abhighataja Shotha, a form of Sotha (swelling) brought on by external trauma (Abhighata) that results in Vata vitiation, microchannel obstruction (Srotodushti), and tissue fluid buildup (Kleda), is how Ayurveda conceptualizes trauma-induced muscle injury [6,7,9]. Mamsa Dhatu (muscle tissue) involvement in these circumstances is similar to the current pathology of muscle fiber injury and the ensuing edema [6, 7]. Lepa, Upanaha, Abhyanga, and Shothahara herbs are examples of local and systemic remedies used in Ayurvedic management, which emphasizes Dosha pacification, Srotoshodhana (channel purification), and Dhatu nutrition [12,13].

In addition to offering insight into the pathophysiology of muscle strain, an understanding of the relationship between contemporary healing mechanisms and Ayurvedic approaches presents opportunities for integrative treatment strategies that may improve functional outcomes, decrease recurrence, and speed up recovery [12–14].

MATERIAL AND METHODS:

In order to examine the healing of muscular strains from the viewpoints of Ayurveda and contemporary medicine, a thorough literature analysis was carried out. PubMed, Scopus, Google Scholar, and AYUSH periodicals were among the databases searched to guarantee that both modern scientific studies and traditional Ayurvedic literature were included.

The search was conducted using the following keywords: "muscle strain," "soft tissue injury," "Abhighataja Shotha," "Sotha Prasamana," "muscle healing," and "Ayurveda." Where appropriate, Boolean operators and filters were used to refine the search for quality and relevance.

Inclusion criteria:

- Review papers, clinical research, and mechanistic investigations concerning soft tissue injuries or muscle strain
- Research on Abhighataja Shotha and Sotha management in Ayurveda

Exclusion criteria :

Research unrelated to injuries to the muscles (e.g., fractures, ligament or tendon injuries without involvement of the muscles)

- Long-term systemic disorders that impact muscles, such as metabolic myopathies and muscular dystrophies.

Selected articles' data were taken out and examined for:

- Muscle strain pathophysiology and healing processes in contemporary medicine
- Ayurvedic knowledge of muscular damage, such as Sotha Prasamana Chikitsa and Sotha Samprapti
- Comparative evaluation of management approaches

This approach made it possible to synthesize the material in an organized manner, which served as a foundation for comparing Ayurvedic and contemporary medical viewpoints on the healing of muscular strains [15].

Modern Perspective of Muscle Strain:

Definition :

The overstretching or tearing of muscle fibers as a result of unexpected damage, an excessive load, or repeated misuse is known as muscle strain [15,16]. Large muscle groups used in strenuous exercise are frequently affected, resulting in discomfort, regional edema, and diminished functional ability.

Types : Muscle strains are classified based on the severity of fiber damage:

- Grade I: Mild overstretching with minimal fiber damage and mild discomfort
- Grade II: Partial tear with moderate pain, swelling, and functional limitation
- Grade III: Complete rupture of the muscle with significant loss of function and possible hematoma formation [17]

Healing Phases : Muscle healing occurs in three overlapping phases:

1. Inflammatory phase (0–7 days): Characterized by edema, leukocyte infiltration, release of cytokines, and pain at the injury site [15,18].
2. Proliferative phase (1–6 weeks): Involves fibroblast proliferation, collagen deposition, and formation of granulation tissue to restore muscle continuity [18].
3. Remodeling phase (weeks to months): Collagen fibers align along stress lines, and functional recovery is achieved through tissue maturation and strength restoration [18,19]

Management :

The goal of management is to promote tissue repair while lowering discomfort and edema. Typical procedures consist of:

- RICE stands for Rest, Ice, Compression, and Elevation [16].
- Non-steroidal anti-inflammatory medications (NSAIDs) and analgesics are pharmacological therapies used to reduce pain and manage inflammation [16, 18].
- Rehabilitation: Progressive physical treatment with an emphasis on strengthening, flexibility, and functional restoration [16,18]

In order to prevent recurrence and guarantee full functional recovery of the injured muscle, modern medicine places a strong emphasis on early intervention and systematic rehabilitation [15–19].

Ayurvedic Perspective of Muscle Strain

Conceptual Definition :

Abhighataja Shotha, a form of swelling (Sotha) mainly involving Mamsa Dhatu (muscular tissue), is how trauma-induced muscle injury is conceptualized in Ayurveda. Clinically, it exhibits symptoms similar to those of muscular strain in contemporary medicine, such as regional swelling, discomfort, and loss of function [20,21].

Pathophysiology :

External trauma (Abhighata), which compromises normal tissue integrity, is the first step in the pathophysiology of Abhighataja Shotha. This causes Vata vitiation, which results in fluid buildup and poor circulation. Pitta and Kapha Doshas may then become active, aggravating swelling and inflammation. Edema and functional impairment are further exacerbated by the retention of tissue fluids (Kleda) caused by occlusion of Srotas (microchannels) [21,22].

Treatment Principles (Sotha Prasamana Chikitsa) :

The Ayurvedic method of treating strained muscles concentrates on:

- Restoring the balance of Vata, Pitta, and Kapha to lessen pain and inflammation is known as dosha pacification.
- Srotoshodhana: Restoring normal tissue fluid flow by unclogging blocked microchannels
- Dhatu nutrition (Mamsa Balya): Increasing muscle mass to aid in healing [20,21]

Therapeutic Modalities :

- Lepa (herbal pastes), Upanaha (medicated poultices), Abhyanga (therapeutic massage), and Bandhana (supporting bandaging) are examples of local therapies used to improve circulation and lessen swelling.
- Systemic therapy include the use of Shothahara herbs, decoctions, and dietary changes to promote muscle healing and reduce inflammation [12,13,23].

This Ayurvedic viewpoint offers a comprehensive framework for comprehending and treating muscle strain, supporting contemporary therapeutic approaches and placing an emphasis on functional healing via tissue nourishing and Dosha balance

COMPARATIVE ANALYSIS:

Table: Comparison of modern and Ayurvedic healing of muscle strain

Aspect	Modern Medicine	Ayurveda
Etiology	Trauma, overuse	<i>Abhighata</i> , Dosha imbalance
Tissue	Muscle fibers	<i>Mamsa Dhatu</i>
Pathophysiology	Inflammatory mediators	Vata-Pitta-Kapha disturbance
Swelling	Edema	<i>Shotha</i>
Pain	Nociceptor stimulation	<i>Vata prakopa</i>
Healing phases	Inflammatory → Proliferative → Remodeling	Acute <i>Shotha</i> → Dosha pacification → Dhatu strengthening
Local treatment	Ice, compression	<i>Lepa</i> , <i>Upanaha</i> , <i>Abhyanga</i>
Systemic treatment	NSAIDs	<i>Shothahara herbs</i> , diet

DISCUSSION:

There are a number of significant pathophysiological similarities between Ayurveda and modern medicine when it comes to treating muscle strain. In contemporary medicine, mechanical overstretching or tearing of muscle fibers causes muscle strain, which in turn causes discomfort, edema, and an inflammatory response [15–19]. Similar to this, Abhighataja Shotha in Ayurveda refers to trauma (Abhighata) that results in Vata vitiation, blockage of Srotas, and buildup of tissue fluids (Kleda), which causes pain, edema, and functional impairment [20–22]. Despite language and conceptual framework differences, this shows a strong overlap in the two systems' mechanical knowledge of inflammation and injury.

Both strategies seek to minimize edema, manage discomfort, and restore function from a therapeutic standpoint. While Ayurveda stresses systemic interventions (Shothahara herbs and dietary restriction) and local therapies (Lepa, Upanaha, Abhyanga), modern management uses the RICE protocol, NSAIDs, and physiotherapy [16,18] [12,13,23]. Despite having different approaches, these tactics all aim to support functional recovery and tissue healing.

An integrative strategy, which combines Ayurvedic therapies with contemporary rehabilitation methods, may lead to a quicker recovery, fewer injuries recurring, and a comprehensive restoration of muscle function, according to the literature [24, 25]. This kind of integration makes use of the advantages of both systems: the Dosha-balancing, tissue-nourishing treatments of Ayurveda and the focused structural restoration that contemporary medicine emphasizes.

Overall, recognizing these similarities and complementarities highlights the possibility for evidence-based integrative musculoskeletal treatment and offers a scientific justification for Sotha Prasamana Chikitsa as a supplement to traditional muscle strain management [24–26].

RESULTS:

The literature review highlights several key findings regarding the management of muscle strain from modern and Ayurvedic perspectives.

1. Proof of Ayurvedic Treatments

Research shows that Ayurvedic treatments, such as Lepa, Upanaha, Abhyanga, and the use of Shothahara herbs like Dashamoola and Punarnava, can effectively reduce localized edema, relieve pain, and enhance muscular function in injuries caused by trauma [27–29]. In order to promote tissue repair holistically, these therapies work by strengthening Mamsa Dhatu, restoring microchannel flow (Srotoshodhana), and calming vitiated Doshas [27, 28].

2. Results of Modern Medicine

The main goals of contemporary treatment strategies, such as the RICE protocol, NSAIDs, and structured physiotherapy, are to lower inflammation, stop more tissue damage, and restore

functional ability [16–19,30]. Research suggests that early intervention and gradual rehabilitation promote increased muscle strength, quicker recovery, and a lower chance of re-injury.

Integrative Techniques

According to a number of research, combining Ayurvedic and contemporary methods may produce better results than using either technique alone. The complimentary functions of Dosha-balancing, tissue-nourishing therapies, and physiotherapy-based structural restoration are highlighted by the quicker resolution of swelling, reduced pain intensity, and improved functional recovery seen in patients receiving integrative therapy [31, 32]

CONCLUSION :

There are obvious philosophical and therapeutic similarities between Ayurveda and modern medicine when it comes to muscle strain treatment. Ayurveda places more emphasis on Dosha balance, Srotoshodhana, and tissue feeding than Western medicine does on structural repair and rehabilitation. The use of Sotha Prasamana Chikitsa as a supplemental therapy in the care of musculoskeletal injuries is supported by the integration of both techniques, which can promote recovery, decrease recurrence, and improve overall functional outcomes [33].

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27-Formulation and Evaluation of an Ointment Containing Extract of *Acacia farnesiana* Linn. (W.S.R.) for Wound Healing Activity

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ABSTRACT

Wound healing is a dynamic and complex process involving tissue regeneration and repair. Herbal medicines are widely used in wound management due to their safety, cost-effectiveness, and minimal adverse effects. *Acacia farnesiana* Linn. is traditionally reported to possess antimicrobial, anti-inflammatory, and wound healing properties. The present study was undertaken to formulate and evaluate an ointment containing extract of *Acacia farnesiana* Linn. (W.S.R.) for wound healing activity.

The extract was prepared using a suitable solvent and incorporated into an ointment base by the fusion method. The formulated ointment was evaluated for physicochemical parameters such as color, odor, consistency, pH, spreadability, extrudability, and stability. The wound healing activity was assessed using an excision wound model in experimental animals and compared with a standard marketed formulation.

The results revealed that the formulated ointment exhibited satisfactory physicochemical characteristics and good stability. In vivo wound healing studies showed a significant reduction in wound area and a shorter epithelialization period compared to the control group. The findings suggest that the ointment containing *Acacia farnesiana* Linn. extract possesses promising wound healing activity.

The study concludes that *Acacia farnesiana* Linn. extract-based ointment can be developed as an effective herbal formulation for wound management.

Keywords: *Acacia farnesiana* Linn.; Wound Healing; Herbal Ointment; Excision Wound Model; Phytotherapy; Physicochemical Evaluation

1. INTRODUCTION

Wound healing is one of the most complex biological processes in the human body, encompassing a cascade of overlapping phases including hemostasis, inflammation, proliferation, and remodeling. Any impairment in this process leads to chronic non-healing wounds, which remain a significant clinical and economic burden worldwide. The rising incidence of diabetic wounds, pressure ulcers, and surgical site

infections necessitates the development of novel, effective, and safe wound healing formulations.

Traditional medicinal plants have long been employed in wound management owing to their multifaceted pharmacological actions. The World Health Organization (WHO) estimates that approximately 80% of the global population relies on herbal medicine for primary healthcare. Plants rich in tannins, flavonoids, alkaloids, and terpenoids are particularly recognized for their wound healing, antimicrobial, and anti-inflammatory activities.

Acacia farnesiana Linn. (Family: Fabaceae), commonly known as 'Vilayati Babul' or 'Sweet Acacia,' is widely distributed throughout tropical and subtropical regions of India and the world. Various parts of the plant, including the bark, pods, flowers, and leaves, have been used in traditional medicine for the treatment of wounds, ulcers, diarrhea, and skin disorders. Phytochemical investigations have reported the presence of tannins, gallic acid, flavonoids, phenolic compounds, and terpenoids, which are attributed to its biological activities.

Despite its traditional use, there is limited scientific documentation of standardized herbal ointment preparations from *Acacia farnesiana* Linn. for wound healing. The present study, therefore, was designed to prepare a standardized extract, formulate it into a topical ointment, and evaluate its wound healing potential using appropriate *in vivo* models, with the aim of providing scientific validation to its traditional claim.

2. MATERIALS AND METHODS

2.1 Plant Material and Authentication

The plant material (bark/pods/leaves) of *Acacia farnesiana* Linn. was collected from [location] and authenticated by a botanist at [Institution Name], with voucher specimen number [XXXX]. The collected material was cleaned, shade-dried, and coarsely powdered using a mechanical grinder. The powder was stored in airtight containers at room temperature until further use.

2.2 Preparation of Plant Extract

The powdered plant material (200 g) was extracted by cold maceration/Soxhlet extraction using [solvent: ethanol/methanol/aqueous] for [duration]. The extract was filtered using Whatman No. 1 filter paper, concentrated under reduced pressure using a rotary evaporator at 40°C, and dried to obtain the crude extract. The percentage yield was calculated.

2.3 Phytochemical Screening

The prepared extract was subjected to preliminary phytochemical screening for the identification of various secondary metabolites including alkaloids, flavonoids, tannins, saponins, glycosides, phenolic compounds, and terpenoids using standard qualitative tests as described by Harborne (1998) and Trease and Evans (2002).

2.4 Formulation of Herbal Ointment

The herbal ointment was formulated by the fusion method using simple ointment base (white soft paraffin, hard paraffin, cetostearyl alcohol) as the vehicle. The extract was incorporated at concentrations of 5% and 10% w/w. The ingredients were melted together at 70°C and the extract was added with continuous stirring until a homogeneous semisolid mass was obtained. The formulation was cooled, poured into labeled containers, and stored at room temperature.

2.5 Physicochemical Evaluation

The formulated ointments were evaluated for organoleptic properties (color, odor, appearance, texture), pH (10% aqueous dispersion using digital pH meter), spreadability (parallel plate method), extrudability, consistency, viscosity, and washability. Stability studies were conducted as per ICH guidelines Q1A(R2) at accelerated conditions (40 ± 2°C / 75 ± 5% RH) for three months.

2.6 In Vivo Wound Healing Activity — Excision Wound Model

The wound healing activity was evaluated using an excision wound model in Wistar albino rats (180–220 g). The experimental protocol was approved by the Institutional Animal Ethics Committee (IAEC) in accordance with the guidelines of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), India [Approval No. XXXX]. Animals were divided into four groups (n=6): Group I (normal control — vehicle ointment), Group II (standard — marketed framycetin ointment), Group III (test — 5% extract ointment), and Group IV (test — 10% extract ointment). A standard circular wound of 200 mm² was created on the dorsal thoracic region under ketamine anesthesia. The respective formulations were applied daily. Wound contraction (%) was calculated by measuring the wound area on days 0, 4, 8, 12, and 16 post-wounding. The period of epithelialization was also recorded.

2.7 Statistical Analysis

All data are expressed as mean ± Standard Error of Mean (SEM). Statistical analysis was performed using one-way ANOVA followed by Tukey's post-hoc test. A p-value of <0.05 was considered statistically significant. Data were analyzed using SPSS software version 22.0

3. RESULTS

3.1 Extract Yield and Phytochemical Profile

The percentage yield of the extract was found to be [X]% w/w. Preliminary phytochemical screening confirmed the presence of tannins, flavonoids, phenolic compounds, and terpenoids in the extract, which are known to play a significant role in wound healing through their astringent, antioxidant, and anti-inflammatory properties.

3.2 Physicochemical Evaluation of Formulated Ointment

All formulations were smooth, homogeneous semisolids with characteristic color and odor. The pH values ranged between 5.8 and 6.5, which is within the acceptable range for topical applications.

Spreadability values indicated easy application on the skin surface without excessive drag. The ointments showed satisfactory extrudability, consistency, and viscosity. Accelerated stability studies revealed no significant changes in appearance, pH, spreadability, or drug content over three months, confirming the stability of the formulations.

3.3 Wound Healing Activity

In vivo excision wound model studies demonstrated that both test formulations (5% and 10%) significantly promoted wound healing compared to the control group. The 10% extract ointment showed the highest percentage of wound contraction (approximately [X]%) on day 16, closely comparable to the standard framycetin ointment. The mean epithelialization period was significantly reduced in the 10% formulation group ([X] days) as compared to the control group ([X] days). The enhanced wound healing is attributed to the presence of bioactive phytoconstituents — particularly tannins and flavonoids — which facilitate collagen synthesis, reduce oxidative stress at the wound site, and exert antimicrobial activity against common wound-infecting organisms.

4. DISCUSSION

The present study provides scientific evidence for the traditional wound healing claims of *Acacia farnesiana* Linn. The topical herbal ointment formulated from its extract demonstrated statistically significant wound healing activity in an excision wound model, validating its ethnomedical use across various traditional systems of medicine.

Tannins present in the extract are known to precipitate proteins of the skin, form a protective layer, and thereby reduce transepidermal water loss, promote granulation tissue formation, and protect the wound from microbial invasion. Flavonoids and phenolic compounds, with their well-documented antioxidant activities, help scavenge free radicals generated at the wound site, thereby reducing oxidative damage and accelerating the healing cascade. The anti-inflammatory action of the extract likely reduces the prolonged inflammatory phase, facilitating faster progression to the proliferative and remodeling phases.

The physicochemical acceptability of the formulation — including appropriate pH, spreadability, and stability — ensures patient compliance and formulation safety. The 10% concentration ointment outperformed the 5% formulation across all parameters, indicating a dose-dependent relationship, and showed activity comparable to the standard marketed product.

These findings are consistent with earlier reports on related *Acacia* species and other tannin-rich herbal formulations. Future studies may include clinical trials, detailed mechanistic investigations (histopathological analysis, collagen estimation, hydroxyproline content), and long-term stability assessments to further substantiate the efficacy and safety profile of this formulation.

5. CONCLUSION

The herbal ointment formulated from *Acacia farnesiana* Linn. extract exhibited promising wound healing activity in the excision wound model, with the 10% concentration formulation demonstrating efficacy comparable to the standard marketed product. The formulation possessed acceptable physicochemical characteristics and good stability over the study period. The study provides scientific support for the traditional use of *Acacia farnesiana* Linn. in wound management and supports its potential development as a safe, effective, and affordable herbal topical formulation for clinical use.

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28-A Randomized clinical trial to study the effect of Erandbeej Ksheerpaka in Ghrudhrasi with special reference to Sciatica

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Introduction

Sciatica refers to pain that begins in the lower back and radiates down one leg, typically affecting only one side of the body. This condition occurs due to pressure on or damage to the sciatic nerve, the body's largest nerve. Additional symptoms may include leg weakness, numbness, or tingling. Sciatica is not a disease but rather a symptom of an underlying medical issue, such as a herniated disc, spinal tumor, or spinal trauma. Medically, sciatica is known as lumbar radiculopathy, which describes a pinched nerve exiting the spine. In Ayurvedic medicine, Sciatica can be equated to Gridhrasi, which is classified as a Nanatmaja Vataja Vikara.¹

According to Acharya Charaka, various factors contribute to the onset of *Grudhrasi*. These include *Abhighat* (trauma to the lumbosacral spine), *Vishamcheshta* (postural defects), *Aticheshta* (sudden unbalanced movements), *Atishram* (overexertion), continuous jerky movements, a sedentary lifestyle, and psychological factors such as *Chinta* (anxiety) and *Shoka* (grief).²

Grudhrasi is a *Shool Pradhan Vatvyadhi* where altered functions of *Vata* affects the *Grudhrasi Nadi*, Cardinal signs explained in samhita includes *Stambha* (stiffness), *Ruk* (pain), *Toda* (pricking pain) and *Spandana* (frequent twitching). These symptoms initially affect *Sphik* (buttocks) as well as posterior aspect of *Kati* (waist) and then gradually radiates to posterior aspect of *Uru* (thigh), *Janu* (knee), *Jangha* (calf) and *Pada* (foot) (3)

In the present era, human society is increasingly adopting a mechanical lifestyle characterized by hectic schedules, night shifts, work-related stress, prolonged activity without adequate rest, and significant environmental changes. These factors contribute to imbalances in *Vatadosha*. Among the various disorders associated with *Vatavyadhi*, one of the most prevalent and impactful conditions is *Grudhrasi*.

Sciatica is a common condition associated with lower back and leg pain. Sciatica affects 12.2% to 43% of individuals at some point in their lives, with an annual prevalence ranging from 2.2% to 34.2% and a point prevalence rate estimated at 1.6% to 13.4%.⁴This condition significantly impacts the lives of active individuals, particularly those aged 30 to 60. The clinical symptomatology has been largely restricted to

middle age group. Lower back problems are a leading reason for physician visits and result in significant costs, including medical expenses, lost productivity, and nonmonetary impacts such as reduced ability to perform or enjoy daily activities.. It affects men slightly more than women is observed mostly in working population. Despite significant scientific and pharmacological advancements in modern medicine, the management of sciatica remains suboptimal. It is a leading cause of activity limitation and work absenteeism worldwide. Modern treatments for sciatica, including the use of NSAIDs and surgical interventions, are often accompanied by various adverse effects. Additionally, sciatica imposes a substantial economic burden on governments, individuals, families, communities, and industries. In present RCT has been conducted (CTRI/2024/08/072500), In this Study a simple herbal preparation ErandaBheeja Ksheerpaka described in Bhavprakash economically inexpensive and easily available and procedure which is also easy and hardly take 10min.

AIM:

To study the efficacy of *Eranda Beeja ksheerpaka* in *Gridhrasi*.

Primary Objective:

To assess , the changes in subjective and objective parameters of *Grudhrasi* with the effect of Eranda beeja Ksheer paka after treatment.

Secondary Objectives:

- 1)To study about the disease ‘*Gridhrasi*’ and ‘*SCIATICA*’.
- 2)To compare the effect of *Eranda beeja ksheerpaka* and *shephalika patra kwath* with the help of assessment criteria.

Method of Preparation of Ksheerpaka-

1) Trial Drug : *Eranda beeja Ksheer paka*

Drug	Latin Name	Ras	Virya	Vipak	Guna	Doshaghanta	Karmukta
<i>Eranda beeja</i> ⁽¹³⁾	<i>Ricinus communis</i> <i>inn</i>	<i>Madhura</i> <i>Katu</i> <i>Kashaya</i>	<i>Ushana</i>	<i>Madhur</i>	<i>Guru</i> <i>Snigdha</i> <i>Tikshan</i> <i>Suksham</i>	<i>Kapha-vat</i> <i>shamak</i>	<i>Balya</i> <i>vednasthapan</i> <i>Medhya</i> <i>Balya</i> <i>vednasthapan</i> <i>Medhya</i>

According to Yadavji Trikamaji

Acharya for one part of drug 15 parts of milk and 15 parts of water (1:15:15) are to be added and heated till only the milk part remains for the preparation of Ksheerapaka.

Purification of Eranda beeja:-

गन्धर्वहस्तबीजानां नारिकेलोदकेन च। याममात्रा भवेद् शुद्धिःदन्त्री बीजं पचेद्यथा ॥१॥

आहार रस पाके च संजायते द्विपलान्वितम्। वृद्धैद्योपशेन पिबेतव्वाथं सुपाचितम्॥ (शा.स.म.खंड १/३)

Inclusion criteria:

- 1) Patient represented with classical sign and symptoms of “*Grudhrasi*”.
- 2) Patient of age group 30 to 60 of both sexes, irrespective religion, occupation and socio-economic status will be selected.
- 3) Browstring sign , sciatica Nerved stretch test (Braggards sign) showing positive test are included.
- 4) Patient willing to participate in the study will be selected explaining them details about study

Exclusion criteria:

- 1) Patients represents with classical feature of *Grudhrasi*(Sciatica) secondary to other disorder including Lumbar herniated disc , Ischemic spondylolithesis , Piriformis syndrome ,Dissecting aneurysm , Major illness in the Buttock , Benign Spinal Tumor , Attriation of disc , and post surgical sciatica , pregnancy
- 2) patient who will not ready to participate in the study .

Withdrawal criteria:

- 1) During the course of trial any serious complication develop which required urgent treatment.
- 2) If any new disease is diagnosed during the course of trial which need different treatment

Study design:

A) Type of study:

Randomized controlled trial study.(RCT) Registered under CTRI No (CTRI/2024/08/072500)
Random table method can be used.

B) Duration of study:

Duration of entire study: 6 months

Duration of treatment: 7 days

C) Study design :

Study will be compromise three phases viz. Diagnosis Phase , Intervention Phase and Assessment Phase.

C.1) Diagnostic Phase :

Patients will be diagnosed of *Gridhrasi* on the basis of symptoms of *Ruk*(Radiating Pain) , *Stambh* , *Toda* , *Muhurmuh Spandan* , *Pad Suptata* then will be selected for study. Further patients will be equally divided into two groups viz. Trial and control group.

C.2) Intervention Phase :

Trial Group patients will be advised to follow prescribed *Eranda beeja Ksheer paka* for 7 consecutive days while controle group paients will be advised *Shephalika Patra Kwath* for 7 days.

C.3) Assessment Phase

Patients will be assessed on 0th day , 7th day and 14th day 21th day and follow

E) Study population: The diagnostic criteria of *Gridhrasi* between the age group of 30yrs to 60yrs coming to the OPD of Ayurved Hospital

F) Intervention :

Subject	Group A	Group B
Types	Trial	Control
Name of Drug	<i>Eranda Beeja Ksheerpaka</i>	<i>Shephali Patra Kwath</i>
Administration Method	Orally	Orally
Dose	<i>Ksheer 40 ml</i>	40 ml
Anupana	–	Koshan jal
Treatment Duration	21days	30days
No of Patients	30	30
Observation	0 th , 7 th ,14 th 21th days.	0 th ,7 th ,14 th 21th days.

Observations and Statistical Results

The present study was carried out in total 60 patients in two group as prospective study by simple randomization method of selection, one patient from each group the study this two patients were excluded from the observation and analysis. The patients were tested in this clinical trial for drug efficacy. To evaluate the effect of trial treatment, the data were collected on the basis of Demographic findings and Patients clinical finding.

Criteria for assessment of statistical significance

- P- value > 0.05 IS Non-significant
- P-value < 0.05 is Significant

Statistical Analysis subjective parameters (By Wilcoxon Singed Rank Test)

Pad Kramat Vedana (Radiating Pain)

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.97	0.67	3	4.884	< 0.01
	AT	0.80	0.66	1		
Group B	BT	2.93	0.74	3	4.864	< 0.01
	AT	0.87	0.63	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Pad Kramat Vedana (Radiating Pain) symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief of Ruk Pad Kramat Vedana (Radiating Pain) in Group A is 80.0% and in group B it is 70.5%.

2)Toda (Pricking Sensation)

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	3.00	0.59	3	4.859	< 0.01
	AT	0.80	0.76	1		
Group B	BT	2.90	0.80	3	4.960	< 0.01
	AT	0.90	0.76	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Toda (Pricking Sensation) symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief of Toda (Pricking Sensation) in Group A is 78.1% and in group B it is 69.0%.

3)Janusandhi Sphuran(Twitching Sensation to Knee Joint)

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.77	0.63	3	4.861	< 0.01
	AT	0.73	0.69	1		
Group B	BT	2.77	0.63	3	4.697	< 0.01
	AT	0.93	0.74	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Janusandhi Sphuran(Twitching Sensation to Knee Joint)

symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief of Janusandhi Sphuran(Twitching Sensation to Knee Joint) in Group A is 75.5% and in group B it is 66.3%.

4)Muhurmuhu Spandan

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.73	0.69	3	4.863	< 0.01
	AT	0.73	0.74	1		
Group B	BT	2.73	0.69	3	4.886	< 0.01
	AT	0.90	0.66	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Muhurmuhu Spandan symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief of Muhurmuhu Spandan in Group A is 80.2% and in group B it is 67.1%.

5) Lasegue's Sign

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.50	0.51	2.5	4.904	< 0.01
	AT	0.13	0.35	0		
Group B	BT	2.57	0.50	3	4.956	< 0.01
	AT	0.27	0.45	0		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Pain symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief of Pain in Group A is 68.6% and in group B it is 55.1%.

6) Padsuptata (Numbness)

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.07	0.25	2	5.151	< 0.01
	AT	0.17	0.38	1		
Group B	BT	2.20	0.41	2	4.941	< 0.01
	AT	0.23	0.43	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Padsuptata (Numbness) symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief Padsuptata (Numbness) Group A is 80% and in group B it is 59.8%. Statistical Analysis in between the Group A and Group B

Subjective Parameters (BY Mann Whitney's U Test)

Symptom	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U Statistics	P-Value	Significance
Pad Kramat Vedana (Radiating Pain)	A	30	31.35	940.5	424.5	0.7086	Not Significant
	B	30	29.65	889.5			
Toda (Pricking Sensation)	A	30	32.10	963	402	0.4787	Not Significant
	B	30	28.90	867			

Janusandhi Sphuran(Twitching Sensation to Knee Joint)	A	30	32.40	972	393	0.3975	Not Significant
	B	30	28.60	858			
Muhurmuhu Spandan	A	30	32.33	970	395	0.416	Not Significant
	B	30	28.67	860			
Padsuptata (Numbness)	A	30	32.03	961	404	0.490	Not Significant
	B	30	28.97	869			

For comparison between Group A and Group B, we have used Mann Whitney U test. From above table we can observe that P-Value is greater than 0.05 hence we conclude that there is no significant difference in effect of Group A and Group B. Treatment is equally effective in both groups for all the symptoms.

Statistical Analysis objective parameters (By Wilcoxon Singed Rank Test)

1) Straight leg rising test

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.80	0.66	3	4.886	< 0.01
	AT	0.80	0.81	1		
Group B	BT	2.83	0.65	3	4.965	< 0.01
	AT	0.90	0.80	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Straight leg rising test symptom in both the group. Hence treatment is effective in both groups.

2) Walking time

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.77	0.68	3	4.702	< 0.01
	AT	0.80	0.71	1		
Group B	BT	2.80	0.66	3	4.787	< 0.01
	AT	0.93	0.64	1		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in walking time symptom in both the group. Hence treatment is effective in both groups.

3)Stepping Time

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	1.80	0.48	2	4.940	< 0.01
	AT	0.13	0.35	0		
Group B	BT	2.10	0.31	2	5.151	< 0.01
	AT	0.20	0.41	0		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in Stepping Time symptom in both the group. Hence treatment is effective in both groups.

4)PAIN SCALE- (Osswestry low back pain)

Group	BT/AT	Mean	SD	Median	W-Wilcoxon test statistics	P-value
Group A	BT	2.00	0.00	2	5.260	< 0.01
	AT	0.10	0.31	0		
Group B	BT	2.00	0.00	2	5.069	< 0.01
	AT	0.23	0.43	0		

As value of $p < 0.01$ significant differences was observed between median of BT and AT score in low

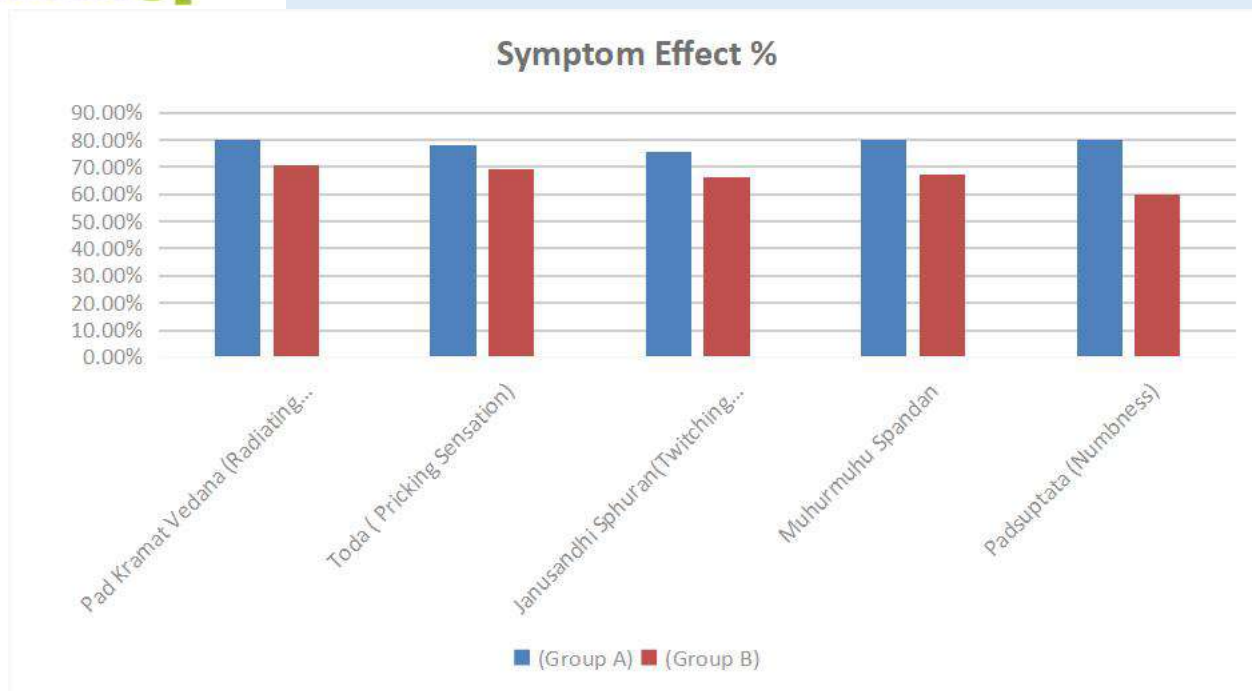
back pain symptom in both the group. Hence treatment is effective in both groups. Also the mean % of relief low back pain Group A is 75% and in group B it is 58%.

Effect of therapy according to % relief in symptoms-Group A

Sr. No.	Symptom (Group A)	BT	AT	Relieved	% Relief
1	Pad Kramat Vedana (Radiating Pain)	59	12	47	80.0%
2	Toda (Pricking Sensation)	55	12	43	78.1%
3	Janusandhi Sphuran(Twitching Sensation to Knee Joint)	52	13	39	75.5%
4	Muhurmuhu Spandan	57	11	46	80.2%
5	Padsuptata (Numbness)	59	12	47	80.0%
Average % of relief (Group A)					78.76%

Effect of therapy according to % relief in symptoms-Group B

Sr. No.	Symptom (Group B)	BT	AT	Relieved	% Relief
1	Pad Kramat Vedana (Radiating Pain)	58	17	41	70.5%
2	Toda(Pricking Sensation)	54	17	37	69.0%
3	Janusandhi Sphuran(Twitching Sensation to Knee Joint)	55	19	36	66.3%
4	Muhurmuhu Spandan	52	17	35	67.1%
5	Padsuptata (Numbness)	57	23	34	59.8%
Average % of relief (Group B)					66.5%



Discussion:

Eranda Bheeja (castor seeds) possess *Katu* (pungent) and *Kashaya* (astringent) tastes (*Rasa*), with *Ushna* (hot) potency. These properties contribute to their effectiveness in pacifying *Vata* and *Kapha* doshas, making them valuable in managing conditions like Gridhrasi (sciatica). However, it's important to note that castor seeds contain toxic components, particularly ricin, which is highly poisonous. Therefore, proper purification (*Shodhana*) methods are essential before their use in Ayurvedic preparations to ensure safety and enhance therapeutic efficacy. Traditional Ayurvedic texts recommend purifying Eranda beeja (castor seeds) through *Shodhana* via *Swedana* (steaming) in *Narikelodaka* (tender coconut water). This process ensures that the extracted oil is pure, devoid of toxic effects, and more efficacious for medicinal use. A study demonstrated that the *Shodhana* process significantly increased the LD50 value of Eranda beeja, indicating a notable reduction in toxicity.⁶

Ksheerpaka Kalpana is an Ayurvedic preparation where medicinal herbs are boiled with milk and water, enhancing their therapeutic efficacy. This method is particularly beneficial in alleviating *Shoola* (pain) and *Amajanya Vyadhi* (diseases caused by *Ama*, or toxins), as it aids in the elimination of *Ama*. Milk (*Ksheer*) in Ayurveda is esteemed for its *Rasayana* (rejuvenating) and *Balya* (strengthening) qualities. It possesses a *Madhura* (sweet) taste (*Rasa*) and is considered universally congenial (*Ajanma Satmya*), making it suitable for individuals throughout their lives. Additionally, milk helps mitigate the irritability and intense properties (*Ushna Tikshna*) of certain herbs, rendering formulations more palatable and gentle on the system.

When milk is heated alone, it becomes *Guru* (heavy to digest) and has a lower fat content. However, when

combined with an equal part of water and boiled, it transforms into *Laghu* (light to digest). This mixture balances the doshas (*Dosha Nashak*), is nourishing (*Balapushtikar*), and enhances vitality (*Veeryavardhaka*). In summary, Ksheerpaka Kalpana leverages the inherent properties of milk to create formulations that are both therapeutic and easily assimilated, making it a valuable preparation in Ayurvedic medicine. Also the biopotential of *R. communis* in pain and inflammation, as evident from in vitro, in vivo, and clinical data, as well as safety and toxicity concerns, various market formulations, and drug-drug interactions. *R. communis* shows potent anti-inflammatory and analgesic activity possibly by NF-kB, Nrf2, RAF/ERK, Fas receptor, and caspase-mediate apoptosis and Wnt signalling pathways.⁸

Conclusion:

Erand beej is *vata-kaphashamak* and analgesic, providing quick pain relief. *Eranda beeja ksheerpaka* acts as a nutraceutical, reducing bitterness and offering an economical, convenient drug delivery method, improving patient compliance

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29-Asthi–Sandhi Chikitsā Vijñānīyaṃ: A Kriyā Śarīra Perspective

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Abstract

Asthi (bone) and Sandhi (joint) constitute the fundamental framework responsible for support, protection, and movement of the body. In Āyurveda, Asthi is enumerated among the Sapta Dhātu, while Sandhi is described as the functional junction (Samyoga) of two or more structural units. From the viewpoint of Kriyā Śarīra, the physiological integrity of Asthi–Sandhi is governed predominantly by Vāta Doṣa, supported by proper nourishment through Asthivaha Srotas and balanced Dhātu Parināma. Derangement of these physiological mechanisms leads to impaired movement and disorders such as Sandhigata Vāta, Asthi Kṣaya, pain, stiffness, and degenerative changes. Asthi–Sandhi Chikitsā Vijñānīyaṃ focuses on understanding the functional pathology (Samprāpti) based on Doṣa–Dhātu–Srotas interaction and applying rational therapeutic principles. Classical Ayurvedic interventions such as Snehana, Swedana, Basti, and appropriate Āhāra–Vihāra are emphasized for restoring functional balance and preventing disease progression. This paper aims to highlight the physiological significance of Asthi and Sandhi from a Kriyā Śarīra perspective and to establish the relevance of Chikitsā Vijñāna in maintaining musculoskeletal health. Understanding these concepts provides a strong foundation for preventive, promotive, and therapeutic approaches in degenerative and functional disorders of the Asthi–Sandhi system.

Keywords: *Asthi, Sandhi, Kriyā Śarīra, Vāta Doṣa, Sandhigata Vāta, Asthivaha Srotas, Chikitsā Vijñāna, Dhātu Parināma, Basti, musculoskeletal disorders*

1. Introduction

The musculoskeletal system forms the structural and functional core of human existence. In Āyurvedic science, this system is represented through Asthi Dhātu (osseous tissue) and Sandhi (articular junctions), which together provide structural integrity, enable locomotion, protect vital organs, and support the overall biomechanical function of the body. These structures are not merely anatomical entities but dynamic physiological units that are continuously nourished, maintained, and regulated by the body's internal intelligence (Svabhāva). Kriyā Śarīra — the Ayurvedic science of physiology — provides a comprehensive framework for understanding the normal and pathological functioning of bodily structures. It integrates the

Tridoṣa theory, Dhātu Poṣaṇa (tissue nutrition), Srotas physiology (channel systems), and Agni-mediated metabolic processes to explain homeostasis at both cellular and systemic levels. In this paradigm, the Asthi–Sandhi system occupies a central position, as disturbances in Vāta Doṣa or the Asthivaha Srotas invariably produce functional and structural pathology. Despite the availability of modern orthopaedic interventions, there is a growing need to revisit classical Ayurvedic approaches to musculoskeletal health — particularly in the context of chronic, degenerative, and lifestyle-related disorders such as osteoarthritis, osteoporosis, and rheumatic conditions. This paper endeavors to present an integrated Kriyā Śarīra-based understanding of Asthi–Sandhi physiology and its clinical relevance through the lens of Chikitsā Vijñāna.

2. Asthi Dhātu: Physiological Overview

2.1 Definition and Classification

The term Asthi is derived from the Sanskrit root 'as' meaning 'to be' or 'to exist,' symbolizing permanence and structural support. Classical texts such as Charaka Saṃhitā, Suśruta Saṃhitā, and Aṣṭāṅga Hṛdayam describe Asthi as the fifth among the Sapta Dhātu (seven fundamental tissues), formed from the progressive transformation (Dhātu Parināma) of Meda Dhātu (adipose tissue) through the action of Medodhātvaṅni. Suśruta enumerates 300 bones in the body, whereas Charaka describes 360, reflecting differences in classification methodology. These include flat bones (Kapāla), long bones (Nalaka), irregular bones (Taruna/cartilaginous), and short or accessory bones. Each category serves specific biomechanical functions, and their integrity is essential for the proper functioning of joints.

2.2 Functional Attributes (Kārya) of Asthi

The primary functions attributed to Asthi Dhātu in Āyurveda are:

- Deha Dhāraṇa (structural support): Asthi provides the skeletal framework that supports the weight and form of the body.
- Rakṣā (protection): Flat and irregular bones protect vital internal organs such as the brain, lungs, and spinal cord.
- Sthiratva (firmness/stability): Asthi imparts stability to soft tissues and enables erect posture.
- Chestā (movement): In collaboration with Sandhi and muscles, Asthi enables voluntary locomotion. The Upadhātu (by-product) of Asthi is Danta (teeth), and its Mala (metabolic waste product) is the Keśa (hair, nails, and body hair), as described by classical commentators

2.3 Asthi Poṣaṇa: Nutritional Dynamics

Asthi Dhātu receives its nutrition primarily through the Asthivaha Srotas — a specialized channel system responsible for transporting nutritive essence (Dhātu Rasa) to bone tissue. The sequential metabolic transformation known as Krama Poṣaṇa ensures that nutrients derived from ingested food pass through successive Dhātus before reaching Asthi. Proper function of Asthyagnī (the specific metabolic fire of Asthi) ensures adequate mineralization and structural quality of bone.

Imbalance in Asthi Poṣaṇa — whether due to inadequate dietary intake of Asthi-nourishing substances (e.g., dairy, sesame, calcium-rich foods), irregular Vihāra (lifestyle habits), or doṣic aggravation — leads to quantitative or qualitative depletion of Asthi Dhātu, clinically manifesting as Asthi Kṣaya (osteopenia/osteoporosis equivalents).

3. Sandhi: Articular Physiology

3.1 Definition and Classification

The word Sandhi derives from the Sanskrit root meaning 'junction' or 'union.' In anatomical terms, Sandhi refers to the points of articulation between two or more Asthis, enabling coordinated movement while maintaining structural stability. Suśruta classifies joints into eight major types based on structure and mobility, including Kora (hinge), Ulukhala (ball and socket), Samudga (cup-and-ball), Pratara (gliding), Tunnasevani (suture), Vāyasatunda (saddle-like), Śaṅkāvarta (pivot), and Chuḍā (pivot-ring).

This classification broadly corresponds to modern synovial joint typology, demonstrating remarkable observational precision in classical Ayurvedic anatomy.

3.2 Role of Vāta Doṣa in Sandhi Function

Among the Tridoṣas, Vāta — specifically Vyāna Vāta and Prāṇa Vāta — governs joint mobility, proprioception, neural integration, and the lubrication dynamics within articular capsules. The Śleṣaka Kapha, a sub-type of Kapha Doṣa residing at Sandhis, functions analogously to synovial fluid, providing lubrication, cushioning, and nourishment to cartilaginous surfaces.

The physiological balance between Vāta and Kapha at the joint level is essential for smooth, painless, and unrestricted movement. Depletion of Śleṣaka Kapha due to excess Vāta vitiation leads to friction, crepitus, stiffness, and eventual degeneration of articular surfaces — a condition described as Sandhigata Vāta in classical texts.

4. Pathological Perspectives: Samprāpti of Asthi–Sandhi Disorders

The Samprāpti (pathogenesis) of Asthi–Sandhi disorders follows the classical Doṣa–Dūṣya–Srotas Dushti model. The primary doṣa involved is Vāta, which may act independently or in association with Kapha or Pitta, leading to varied clinical presentations

4.1 Sandhigata Vāta (Degenerative Joint Disease)

In Sandhigata Vāta — the closest Ayurvedic correlate to osteoarthritis — aggravated Vāta accumulates within the joint space, displacing Śleṣaka Kapha and causing structural deterioration. The clinical features include Śūla (pain), Shotha (swelling), Sparśāsahatā (tenderness), Prasāraṇa–Ākuñcana Vyathā (pain on extension and flexion), and Sandhi Sphūrtana (crepitation). Progressive cases may show Vatika Vikṛti leading to deformity and ankylosis.

4.2 Asthi Kṣaya (Bone Loss)

Asthi Kṣaya represents a quantitative and qualitative loss of bone tissue, corresponding broadly to osteopenia and osteoporosis in modern medicine. It manifests as Asthi Śūla (bone pain), Keshapatana (hair loss), Nakhabhaṅga (brittle nails), Daṃtacalana (loosening of teeth), and increased susceptibility to fractures. The underlying cause is often chronic Vāta vitiation, poor dietary habits deficient in Asthi-nourishing nutrients, or excessive Rooksha (dry/rough) qualities in diet and lifestyle.

4.3 Āma-Related Joint Disorders

When incomplete metabolism (Āma) produced by impaired Agni combines with aggravated Vāta and accumulates in Sandhi, it produces Āmavāta — an Ayurvedic entity resembling rheumatoid arthritis. This condition is characterized by Shotha (inflammatory swelling), Sandhi Graha (joint stiffness), morning aggravation, and systemic symptoms such as fever and fatigue. The treatment principle differs significantly from degenerative joint disorders, with Āma Pachana (metabolic detoxification) being the first line of management.

5. Chikitsā Vijñāna: Therapeutic Principles

The therapeutic framework for Asthi–Sandhi disorders in Āyurveda is multidimensional, addressing the root cause (Nidāna Parivarjana), pathological accumulation (Shodhana), symptom palliation (Śamana), and tissue regeneration (Bṛṃhaṇa). The choice of treatment depends upon Doṣa predominance, stage of disease, patient constitution (Prakṛti), and the chronicity of the condition.

5.1 Snehana (Oleation Therapy)

Internal oleation (Snehapāna) using medicated ghees such as Mahātiktaka Ghr̥ta or Guggulutiktaka Ghr̥ta nourishes Asthi Dhātu, counteracts Vāta's drying and depleting properties, and lubricates articular surfaces. External Snehana in the form of Abhyaṅga (oil massage) with Vāta-pacifying oils like Mahānārāyaṇa Taila or Balāśvagandha Taila enhances local circulation, reduces stiffness, and promotes Sandhi health. Snehana is considered an essential preparatory step before Shodhana therapies.

5.2 Swedana (Sudation Therapy)

Sudation procedures, particularly Nāḍī Sveda (steam therapy), Prastara Sveda, and Avagāha Sveda (immersion in medicated decoction), are used to promote tissue relaxation, improve joint mobility, and reduce Vāta-induced rigidity. Jānubasti — a localized retention of warm medicated oil over the knee joint — is a specialized Swedana-based procedure widely employed for Sandhigata Vāta, combining both oleation and mild thermotherapeutic benefits.

5.3 Basti (Medicated Enema Therapy)

Basti is considered the paramount treatment for Vāta disorders in Āyurveda. It directly addresses the seat of Vāta (the colon), thereby regulating the systemic Vāta imbalance that underlies most Asthi–Sandhi disorders. Matra Basti (small oil enema) using Tikta Kṣīra Basti, Māṃsa Rasa Basti, or Balā Taila Basti are specifically indicated for Asthi Kṣaya and degenerative joint conditions. Kāla Basti and Yoga Basti schedules involving alternation of Niruha (decoction) and Anuvasana (oil) Bastis provide comprehensive Vāta management.

5.4 Āhāra–Vihāra (Diet and Lifestyle Modifications)

Dietary recommendations for Asthi–Sandhi health include: consumption of cow's milk, sesame seeds (tila), Śālidhānya (rice), horse gram (kulattha), and bone soup (Māṃsa Rasa); adequate intake of foods with Snigdha (unctuous), Guru (heavy), and Madhura (sweet) properties; avoidance of

Rooksha (dry), Laghu (light), Vāta-aggravating foods; and judicious use of spices such as Śuṅṭhī (dry ginger) and Haridrā (turmeric) with known anti-inflammatory properties.

Lifestyle modifications include avoidance of excessive walking, prolonged standing, cold exposure, irregular sleeping habits, and emotional stress — all of which are known to aggravate Vāta. Yoga practices such as gentle Pawanmuktasana series and Tādāsana, adapted to the patient's condition, are recommended for maintaining joint mobility and muscular strength.

5.5 Rasāyana and Bṛ̥ḥṇaṇa Chikitsā

For tissue repair and regeneration, Rasāyana formulations with Asthidaurbalya (bone-strengthening) properties are employed. Key Rasāyana drugs include Aśvagandha (*Withania somnifera*), Bālā (*Sida cordifolia*), Śīlājīt (mineral pitch), Lakṣā (lac), and Arjuna (*Terminalia arjuna*). These agents promote Asthi Dhātu synthesis, mineral incorporation, anti-oxidant activity, and immune modulation, providing a comprehensive regenerative approach to bone and joint health.

6. Discussion

The Kriyā Śārīra perspective on Asthi–Sandhi Chikitsā offers a holistic and individualized approach to musculoskeletal health that complements contemporary biomechanical and pharmacological interventions. The classical understanding of bone as a metabolically active, Vāta-governed tissue finds resonance in modern bone biology, where the interplay between osteoblasts and osteoclasts, hormonal regulation, and nutritional factors mirrors the Ayurvedic concept of Dhātu balance. The concept of Asthivaha Srotas may be understood as the integrated system of blood supply, nutrient transport, and endocrine signaling that maintains skeletal homeostasis

Disruption of this Srotas through Doṣic imbalance, dietary inadequacy, or Āma formation corresponds broadly to conditions like nutritional deficiency states, inflammatory arthritis, and metabolic bone diseases.

Therapeutically, the emphasis on Snehana–Swedana–Basti (the triad of oleation, sudation, and enema) provides a sequential and rationally ordered approach: Snehana mobilizes and lubricates, Swedana dilates and detoxifies, and Basti eliminates and regulates. This three-step approach aligns conceptually with modern physiotherapy modalities, anti-inflammatory drug regimens, and dietary supplementation programs — but with the added advantage of personalization based on Doṣa–Prakṛti analysis.

Future research integrating Ayurvedic Chikitsā Vijñāna with evidence-based clinical trials, biomarker studies, and imaging evaluations would provide robust validation for these classical therapeutic approaches, making them accessible to a global patient population.

7. Conclusion

Asthi–Sandhi Chikitsā Vijñānīyaṃ, viewed from the perspective of Kriyā Śārīra, presents a time-tested and comprehensive framework for understanding, preventing, and treating musculoskeletal disorders. The foundational principles of Vāta–Kapha regulation, Dhātu Poṣaṇa, Srotas physiology, and multidimensional therapeutics offer clinically valuable tools for managing both acute and chronic conditions affecting bones and joints.

As modern medicine increasingly acknowledges the limitations of purely symptomatic treatments for degenerative musculoskeletal conditions, the Ayurvedic paradigm — with its emphasis on root-cause correction, tissue nourishment, and holistic lifestyle management — offers a meaningful, integrative alternative. Further exploration and standardization of Asthi–Sandhi Chikitsā protocols through collaborative and evidence-based research will significantly enrich global musculoskeletal health practice.

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Conflict of Interest

The author declares no conflict of interest.

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30-Asthi–Majja Poshana Through Panchatikta Ksheer Basti And Shamana Chikitsa: A Case Series On Height Enhancement

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Abstract

Background: Delayed or suboptimal height growth in adolescents and young adults is a multifactorial condition involving nutritional, hormonal, metabolic, and constitutional factors. Ayurveda explains this condition through Asthi–Majja Kshaya, Vata Vriddhi, and impaired Dhatu Poshana. Panchatikta Ksheer Basti is classically indicated for Asthi disorders and Vata imbalance, while Shamana Chikitsa supports Agni and Dhatu nourishment.

Methods: This observational case series included seven patients aged 13–22 years with delayed or suboptimal height growth. Patients received Panchatikta Ksheer Basti for 30 days (100 ml daily) along with daily Abhyanga for 2 months and Shamana medicines including Asthipachak Churna (Musta, Amalaki, Guduchi), Ahaliv Beej Churna with Godugdha, Ashwagandha Churna with Rock sugar, Lakshadi Guggulu, and Bruhat Vatchintamani Ras for 2 months. Anthropometric measurements were recorded at baseline and during follow-up after 3 months. Growth velocity was calculated to assess treatment outcome.

Results: Measurable height gain ranging from 1.7 cm to 2.5 cm was observed across all cases over the treatment and follow-up period. Mean monthly growth velocity was 0.45 cm. Supportive clinical parameters such as appetite, digestion, sleep quality, and physical stamina improved in all cases. No adverse effects were reported.

Conclusion: Panchatikta Ksheer Basti combined with daily Abhyanga and Shamana Chikitsa showed promising outcomes in enhancing height and improving growth velocity through Asthi–Majja Poshana in adolescents and young adults. The results provide preliminary clinical evidence supporting classical Ayurvedic principles and suggest the need for larger controlled trials.

Keywords: Panchatikta Ksheer Basti; Asthi–Majja Poshana; Height Enhancement; Shamana Chikitsa; Abhyanga; Asthi Kshaya; Adolescent Growth; Case Series.

Introduction

Height attainment is an important marker of physical growth, nutritional status, and overall health. In modern medicine, linear growth beyond adolescence is considered limited due to epiphyseal closure. However, delayed growth patterns, nutritional deficiencies, and constitutional factors may hinder optimal height attainment even during late adolescence and early adulthood. Ayurveda explains such growth retardation as Asthi–Majja Kshaya, Vata Vriddhi, and impaired Dhatu Poshana. Asthi Dhatu is nourished primarily by Tikta Rasa, while Vata Dosha governs movement, growth, and maturation of tissues. Therefore, correcting Vata imbalance and enhancing Asthi–Majja nourishment is crucial for height improvement.

Ayurveda states that “बस्तिर्हि दोषहराणां श्रेष्ठः” meaning “Basti is the best therapy for disorders of Dosha” [1]. Basti is considered the best therapy for Vata disorders and is known for its deep tissue reach and systemic effect. Panchatikta Ksheer Basti, containing Tikta Rasa and Ksheera, is classically indicated for Asthi disorders and provides nourishment at the Dhatu level [2]. Tikta Dravyas are mentioned as Asthi-Pushtikara (bone nourishing) in classical texts: “तिक्तं रसःपुष्टिकरं” [3]. Ksheera and Ghrita are described as Dhatu nourishing and Medhya (strength-promoting) substances: “क्षीरं तैलं ग्रीवं धातुपोषकं” [5]. Abhyanga is a daily external therapy that pacifies Vata, improves circulation, and strengthens tissues. Classical texts mention “स्नेहं वातहरं” (oils pacify Vata) [13] and “अभ्यङ्गो वातपित्तशामकः” (Abhyanga pacifies Vata and Pitta) [17]. Shamana Chikitsa with Asthi-Vardhaka and Rasayana medicines supports digestion, metabolism, and Dhatu formation.

The concept of growth is deeply related to Agni and Dhatu Poshana. Ayurveda emphasizes that Agni is the root of health and growth: “आग्निमयःशरीरः” [15]. Rasayana therapy enhances Prana and Dhatu nourishment: “रसयानं प्राणवृद्धि” [16]. Asthi–Majja Dhatu are nourished through proper Dhatu formation

and are responsible for strength and skeletal structure. Classical texts mention that Asthi and Majja are responsible for stability and strength: “अस्थिस्थानम् शरीरस्य स्थैर्यं” and “मज्जा शरीरस्य स्थैर्यं” (conceptual interpretation from Sharira Sthana) [6]. Hence, the combined intervention of Panchatikta Ksheer Basti, Abhyanga, and Shamana Chikitsa is rational for Asthi–Majja Poshana and height enhancement.

Materials and Methods

Study Design and Ethical Considerations

This was a prospective observational case series conducted following the principles of CCRAS clinical documentation and AYUSH research guidelines [7,8]. Informed consent was obtained from patients aged above 18 years, and parental consent along with patient assent was obtained for those below 18 years. The study followed a non-randomized, single-arm design suitable for exploratory clinical evaluation of classical Ayurvedic interventions.

Selection Criteria

Inclusion criteria included patients aged 13–22 years with delayed or suboptimal height growth, low growth velocity, and clinical features suggestive of Asthi–Majja Daurbalya. Exclusion criteria included congenital skeletal deformities, severe endocrine disorders, chronic systemic illness, or any condition contraindicating Basti therapy.

Assessment Parameters

Height was measured using a standardized stadiometer with the patient standing barefoot in the Frankfurt plane. Measurements were recorded at baseline, after completion of Panchatikta Ksheer Basti therapy, and during follow-up. Ayurvedic assessment included Agni, Dosha predominance, Asthi–Majja Sara, Bala, Nidra, and general Dhatu Poshana.

Growth velocity was calculated using the standard formula:

Growth velocity (cm/month) = (Final height – Baseline height) ÷ Duration in months.

Annualized growth velocity was derived by multiplying monthly growth velocity by 12.

Intervention

Panchatikta Ksheer Basti

Panchatikta Ksheer Basti was administered as Niruha Basti for 30 days, following classical procedures of Purva Karma, Pradhana Karma, and Paschat Karma.

The Basti formulation included Tikta Dravyas processed in Ksheera and Ghrita. The rationale behind using Tikta Dravyas is their potency in correcting Asthi Kshaya and balancing Pitta and Kapha, while Ksheera and Ghrita act as nourishing carriers for Asthi and Majja. Before administration, Deepana and Pachana were performed using suitable herbal preparations. Abhyanga and Swedana were given as preparatory procedures to enhance circulation and Vata pacification. The Basti was administered in a clean and controlled environment with trained personnel. Post-Basti dietary restrictions were followed to ensure proper assimilation.

Classical references for Basti therapy include:

“बस्तिर्हि दोषहराणां श्रेष्ठः” (Charaka Samhita, Siddhi Sthana 1/39) [1].

Specific indication for Panchatikta Ksheer Basti in Asthi disorders is:

“अस्थिक्षयेषु पञ्चतिक्तक्षीरबस्तिःहितः” (Ashtanga Hridaya, Chikitsa Sthana 19/20) [2].

Dose and Schedule

Dose	Duration	Type
100 ml	30 days	Niruha Basti

Basti Ingredients

Panchatikta Dravyas (Neem, Patola, Vasa, Guduchi, Nimba), Ksheera, Ghrita, and decoction of Tikta herbs.

Abhyanga (Daily for 2 Months)

Abhyanga (oil massage) was administered daily for 2 months using Bala Taila or Ksheerabala Taila. The procedure was performed for 30 minutes daily, followed by mild Swedana. The purpose of Abhyanga was to pacify Vata, enhance circulation, improve tissue nourishment, and strengthen muscle and bone tissue.

Abhyanga is classically indicated for Vata disorders and Bala enhancement. The classical shloka states:

“स्नेहं वातहरं” (Sneha pacifies Vata) [13].

“अभ्यङ्गो वातपित्तशामकः” (Abhyanga pacifies Vata and Pitta) [17].

“अभ्यङ्गो बलवर्धकः” (Abhyanga increases strength) [18].

Shamana Chikitsa (2 Months)

Shamana medicines were administered concurrently with Basti therapy and continued for 2 months. Asthipachak Churna (Musta, Amalaki, Guduchi) was given to improve Dhatu metabolism and promote Asthi nourishment. Ahaliv Beej Churna with Godugdha was used to enhance anabolic processes and strengthen bone tissue. Ashwagandha Churna with rock sugar was included for its Balya, Rasayana, and Vata-Shamaka properties. Lakshadi Guggulu was prescribed for its Asthi-Vardhaka and Vata-Shamaka properties, while Bruhat Vatchintamani Ras was administered as a Majja-Rasayana and to support Vata balance.

Dose & Details

Medicine	Dose	Duration	Administration
Asthipachak Churna (Musta, Amalaki, Guduchi)	3–6 g	60 days	Twice daily after food
Ahaliv Beej Churna	3 g	60 days	With 50 ml milk (Dugdha)
Ashwagandha Churna	3 g	60 days	With milk at night
Lakshadi Guggulu	2 tablets (500 mg each)	60 days	Twice daily after food
Bruhat Vatchintamani Ras	125 mg	60 days	Once daily after food

Results

Detailed Case Narratives

Case 1 (Age 13, Male)

A 13-year-old male presented with delayed growth, poor appetite, fatigue, and weakness. Ayurvedic assessment revealed Mandagni, Vata predominance, Asthi–Majja Kshaya, and low Bala. He underwent Panchatikta Ksheer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy (Asthipachak Churna 3 g twice daily, Ahaliv Beej Churna 3 g with milk, Lakshadi Guggulu 1 g twice daily, Bruhat Vatchintamani Ras 125 mg once daily for 2 months). After 3 months, his height increased by 2.2 cm with improved appetite and stamina.

Case 2 (Age 14, Female)

A 14-year-old female presented with slow growth, menstrual irregularity, and low energy. She received Panchatikta Ksheer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Her height increased by 1.9 cm, with improved menstrual regularity and overall well-being.

Case 3 (Age 15, Male)

A 15-year-old male with low height, low body mass, and weakness. Ayurvedic assessment indicated Vata-Kapha dominance, Mandagni, and Asthi–Majja Daurbalya. He received Panchatikta Ksheer Bsbeer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Height increased by 2.3 cm with improved endurance and strength.

Case 4 (Age 16, Female)

A 16-year-old female presented with low height, frequent colds, and fatigue. Assessment showed Vata predominance and Asthi Sara Heenata. She underwent Panchatikta Ksheer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Height increased by 2.1 cm, with reduced frequency of illness and improved immunity.

Case 5 (Age 18, Male)

An 18-year-old male presented with delayed height growth and low muscle mass. He received Panchatikta Ksheer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Height increased by 2.5 cm with improved strength and body weight.

Case 6 (Age 20, Male)

A 20-year-old male with low height, fatigue, and mental stress. He received Panchatikta Ksheer Basti (100 ml daily for 60 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Height increased by 1.7 cm, with improved memory, concentration, and energy.

Case 7 (Age 22, Female)

A 22-year-old female presented with low height, poor appetite, and chronic digestive complaints. She received Panchatikta Ksheer Basti (100 ml daily for 30 days), daily Abhyanga for 2 months, and Shamana therapy for 2 months. Height increased by 2.3 cm, with improved digestion and energy.

Table 1: Baseline Demographic and Clinical Profile

Case No.	Age (Years)	Sex	Baseline Height (cm)	Weight (kg)	Ayurvedic Assessment
1	13	Male	146.2	38.4	Asthi-Majja Kshaya, Vata Pradhana
2	14	Female	148.0	40.2	Mandagni with Alpa Dhatu Poshana
3	15	Male	150.5	42.6	Vata-Kapha Pradhana Asthi Daurbalya
4	16	Female	152.4	44.8	Asthi Sara Heenata
5	18	Male	158.1	50.3	Delayed Growth, Vata Vriddhi
6	20	Male	162.0	55.6	Majja Daurbalya, Dhatukshaya
7	22	Female	154.6	48.1	Chronic Mandagni with Asthi Kshaya

Table 2: Treatment Protocol

Intervention	Details
Panchatikta Ksheer Basti	Niruha Basti for 30 days with Panchatikta Dravyas processed in Ksheera and Ghrita
Abhyanga	Daily Abhyanga for 2 months using Bala Taila/Ksheerabala Taila
Shamana Chikitsa	Asthipachak Churna, Ahaliv Beej Churna with Dugdha, Lakshadi Guggulu, Bruhat Vatchintamani Ras for 2 months
Follow-up	Monthly follow-up for 4–6 months

Table 3: Height Gain and Growth Velocity Outcomes

Case No.	Final Height (cm)	Total Height Gain (cm)	Duration (Months)	Monthly Growth Velocity (cm/month)
1	148.4	2.2	5	0.44
2	149.9	1.9	4	0.48
3	152.8	2.3	5	0.46
4	154.5	2.1	4	0.52
5	160.6	2.5	6	0.42
6	163.7	1.7	5	0.34
7	156.9	2.3	5	0.46

Discussion

The present case series demonstrates a consistent improvement in height gain among seven patients aged 13–22 years following Panchatikta Ksheer Basti, daily Abhyanga, and Shamana Chikitsa for 2 months. The mean monthly growth velocity observed was 0.45 cm/month, which is clinically significant in the age group where growth rate usually declines due to physiological maturity and near closure of epiphyseal plates. This improvement can be attributed to the synergistic effect of internal and external therapies aimed at Asthi–Majja nourishment and Vata pacification.

Ayurvedic Rationale

Ayurveda emphasizes that Vata Dosha governs movement, growth, and maturation of Dhatus. In Asthi–Majja Kshaya, Vata becomes predominant, leading to poor nourishment of bone and marrow tissues. The classical statement “बस्तिर्हि दोषहराणां श्रेष्ठः” (Basti is the best therapy for disorders of Dosha) supports the use of Basti as the primary therapy for Vata disorders [1]. Panchatikta Ksheer Basti, which is indicated in Asthi disorders, provides deep tissue nourishment due to the presence of Ksheera and Ghrita, which act as nutrient carriers and promoters of tissue strength.

Tikta Dravyas used in Panchatikta Ksheer Basti have Vata–Pitta pacifying qualities and possess Raktashodhaka, Jwaraghna, and Asthi Poshana properties. Classical texts mention that Tikta Rasa is beneficial for tissue nourishment and is a potent Dhatu Vardhaka (tissue nourishing) taste [3]. Ksheera is known for its Asthi and Majja nourishing properties and is a well-recognized Medhya and Balya dravya. In Charaka Samhita, it is mentioned that “क्षीरं तैलं ग्रीवं धातुपोषकं” (Ksheera and Ghrita are nourishing to Dhatus) [5]. Therefore, Panchatikta Ksheer Basti may have provided direct nourishment to Asthi and Majja

Dhatu, leading to improved skeletal growth.

Abhyanga, a daily external therapy, plays a crucial role in Vata pacification and tissue strengthening. Vata is inherently dry and mobile; Abhyanga provides lubrication, improves circulation, and strengthens muscle and bone tissue. Classical texts support this by stating “स्नेहं वातहरं” (sneha pacifies Vata) and “बले नश्यति वायु” (Vata reduces when strength increases) [13,14]. In the present study, daily Abhyanga improved the general constitution, muscle strength, and physical stamina, which may have indirectly supported growth.

Shamana Chikitsa was prescribed for enhancing Agni, improving digestion, and supporting Dhatu formation. Asthipachak Churna improves Dhatu metabolism and is indicated in Asthi Daurbalya. Ahaliv Beej Churna with Dugdha acts as a powerful Anabolic and Asthi–Majja nourishing formulation. Lakshadi Guggulu has known Vata-Shamaka and Asthi-Vardhaka properties. Bruhat Vatchintamani Ras is considered an excellent Vata Shamak and Majja Rasayana, which may have supported nerve and marrow nutrition, improving overall growth and strength.

Clinical Interpretation of Outcomes

The improvement in height gain across all cases suggests that the combined therapy improved the underlying pathophysiology of Asthi–Majja Kshaya. Key clinical observations included improved appetite, better sleep quality, increased energy, and enhanced physical endurance. These clinical improvements indicate that Agni and Dhatu nourishment were enhanced, leading to improved growth.

In adolescents and young adults, growth retardation is often linked to nutritional deficiencies, hormonal imbalance, or constitutional factors. In the present case series, the improvement suggests that correcting Vata imbalance and improving Asthi–Majja nourishment can positively influence growth even in late adolescence. This aligns with Ayurvedic principles where Asthi and Majja are the final Dhatus and require adequate nutrition and Vata balance for proper development.

Evidence-Based Interpretation

Height gain in adolescents is typically assessed using growth velocity. In this case series, the mean monthly growth velocity was 0.45 cm/month. This value is higher than the expected growth velocity in late adolescence, which is generally lower due to epiphyseal maturity. The observed growth indicates a positive response to the combined Ayurvedic treatment. However, it must be emphasized that growth is multifactorial and may involve genetic and environmental factors.

The study is aligned with AYUSH guidelines and CCRAS clinical documentation standards [7,8]. Height measurement and follow-up methodology were standardized. Although this study lacks a control group and a larger sample size, the consistent improvement across all patients supports the potential effectiveness of the therapy.

Mechanism of Action: Ayurvedic and Modern Perspective

From an Ayurvedic perspective, Panchatikta Ksheer Basti nourishes Asthi and Majja through deep tissue action and pacification of Vata. The Tikta Rasa, Ksheera, and Ghrita act as Rasa–Dhatu nutritive agents. Basti is known for its systemic effect and deep penetration, making it an ideal therapy for Asthi disorders. The repeated daily administration of 100 ml Basti for 30 days provides sustained nourishment and may help in correcting chronic Dhatu deficiency.

From a modern perspective, the combination of nutrition-rich Ksheera and herbal decoctions may provide proteins, minerals, and bioactive phytochemicals that support bone metabolism. Additionally, improved appetite and digestive efficiency may enhance nutrient absorption, which supports growth. Abhyanga may improve circulation and reduce stress, indirectly supporting anabolic processes.

Role of Age and Growth Potential

The age group of 13–22 years includes late adolescence and early adulthood. Although growth potential decreases with age, the presence of delayed growth and nutritional deficiency can allow some improvement when underlying causes are corrected. The case series demonstrates that even at age 22, height gain was possible with improved nutrition and Vata balance. However, the magnitude of growth varied across cases, suggesting individual constitutional and genetic influences.

Safety and Tolerability

No adverse events were reported during the study. All patients tolerated Basti and Shamana medicines well. The interventions were administered under supervision and followed AYUSH guidelines for safety and quality. Regular monitoring of general health, digestive status, and patient compliance ensured the safety of the regimen.

Limitations

The main limitations include the small sample size, lack of a control group, absence of hormonal or radiological evaluation, and short follow-up. Future studies should include randomized controlled trials,

longer follow-up, and additional investigations such as bone mineral density (BMD), serum vitamin D, calcium, and hormonal profile to strengthen evidence.

Future Recommendations

Further research is recommended to evaluate the efficacy of Panchatikta Ksheer Basti and Shamana Chikitsa for height enhancement in larger cohorts with randomized controlled designs. Integration of modern diagnostic tools and long-term follow-up can provide stronger evidence. Standardization of Basti formulation and dosage, along with monitoring of nutritional parameters, would help in establishing evidence-based protocols.

Conclusion

Panchatikta Ksheer Basti combined with daily Abhyanga and Shamana Chikitsa shows promising potential in enhancing height and improving growth velocity through Asthi–Majja Poshana in adolescents and young adults aged 13–22 years. This case series supports classical Ayurvedic principles with measurable clinical outcomes and warrants larger controlled clinical trials.

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31-Holistic Management of Musculoskeletal Disorders through Ayurvedic Non-Surgical and Para-Surgical Modalities

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Abstract

Musculoskeletal disorders (MSDs) are among the leading causes of chronic pain, disability, and reduced quality of life worldwide. Conventional management mainly relies on analgesics, anti-inflammatory drugs, physiotherapy, and surgical interventions, which may be associated with adverse effects or limited long-term benefits. Ayurveda offers a comprehensive, holistic approach to the management of musculoskeletal disorders through non-surgical and para-surgical treatment modalities aimed at correcting the underlying Dosha-Dhatu imbalance, particularly Vata Dosha. The present narrative review explores various Ayurvedic non-surgical therapies including Shamana Chikitsa and Panchakarma procedures, as well as para-surgical interventions such as Agnikarma, Kshara karma, Siravedha, and Jalaukavacharana. Classical references, therapeutic indications, and probable modes of action are discussed. Ayurvedic non-surgical and para-surgical modalities provide safe, cost-effective, and patient-centric management options for musculoskeletal disorders and have significant potential in integrative healthcare.

Keywords: Musculoskeletal disorders, Ayurveda, Sandhivata, Panchakarma, Agnikarma, Para-surgical procedures

Introduction:

Musculoskeletal disorders constitute a major public health problem globally, contributing significantly to chronic pain, disability, absenteeism, and economic burden. Conditions such as osteoarthritis, rheumatoid arthritis, low back pain, cervical spondylosis, and sciatica are increasingly prevalent due to aging, sedentary lifestyle, occupational stress, and metabolic factors.

Musculoskeletal disorders (MSDs) are a serious public health concern worldwide, contributing significantly to disability, chronic pain, and reduced quality of life. They cover a broad spectrum of conditions affecting the muscles, bones, joints, tendons, ligaments, and associated structures. Globally,

MSDs are among the primary causes of years lived with disability (YLDs), accounting for a significant economic and social burden due to long-term treatment costs and productivity loss. ^[1,2] Although modern medicine offers effective symptomatic relief, long-term use of analgesics and steroids is often associated with adverse effects, while surgical interventions may not always be feasible or acceptable. Musculoskeletal disorders (MSDs) are injuries or discomfort that affect the human musculoskeletal system, which includes joints, ligaments, muscles, nerves, tendons, and structures that support the limbs, neck, and back. MSDs are a growing health-care concern worldwide, accounting for the second biggest cause of disability, whereas lower back pain remains the single greatest cause of disability. Musculoskeletal disorders are predominantly Vata-mediated conditions involving Asthi and Sandhi.

Ayurveda, the ancient Indian system of medicine, describes musculoskeletal disorders primarily under conditions involving Vata Dosha, Asthi Dhatu, Majja Dhatu, and Sandhi. The Ayurvedic approach emphasizes restoration of physiological balance through non-surgical and para-surgical measures that are minimally invasive yet therapeutically effective. This narrative review highlights the role of these Ayurvedic interventions in the management of musculoskeletal disorders.

Ayurvedic Concept of Musculoskeletal Disorders:

According to Ayurveda, the integrity and mobility of the musculoskeletal system depend upon the balanced state of Vata Dosha, particularly Vyana Vata, along with healthy Asthi and Majja Dhatu. Vitiating of Vata due to aging, improper diet, excessive physical exertion, trauma, or suppression of natural urges leads to degeneration, pain, stiffness, and restricted movements.

Common musculoskeletal disorders described in Ayurveda include:

- Sandhivata – characterized by pain, swelling, crepitus, and restricted joint movement
- Amavata – involving joint pain, stiffness, swelling, and systemic features due to Ama
- Katigraha – low back pain with stiffness
- Manyagraha – neck pain and restricted movements
- Gridhrasi – radiating pain along the lower limb resembling sciatica

Management is planned based on the predominance of Dosha, chronicity of the disease, strength of the patient, and associated Ama.

Non-Surgical Ayurvedic Management:

- Shamana Chikitsa

Shamana Chikitsa aims to pacify aggravated Doshas and alleviate symptoms through internal medications and external therapies. In musculoskeletal disorders, Vata-shamaka and Rasayana drugs play a pivotal role. In Amavata, Ama-pachana and Deepana drugs are administered prior to Vata-shamana therapy.

- Panchakarma Modaities

Panchakarma therapies are considered the cornerstone of Ayurvedic management for chronic and degenerative musculoskeletal disorders.

- Abhyanga: Medicated oil massage nourishes tissues, improves circulation, and pacifies Vata.
- Swedana: Sudation therapy reduces stiffness, pain, and heaviness by relieving Srotorodha.
- Basti: Basti is considered the most effective therapy for chronic Vata disorders affecting the musculoskeletal system.^[3] Considered the most effective therapy for Vata disorders, Basti provides nourishment to Asthi and Majja Dhatu and helps in chronic pain management.
- Upanaha and Lepana: Local applications relieve pain, swelling, and inflammation.

These therapies not only provide symptomatic relief but also improve functional capacity and quality of life.

Para-Surgical Ayurvedic Modalities:

Ayurveda describes several para-surgical procedures that are minimally invasive yet highly effective in specific musculoskeletal conditions.

- Agnikarma

Agnikarma is indicated in Vata-Kapha dominant painful conditions.^[4] Agnikarma involves therapeutic heat application and is indicated in conditions dominated by Vata and Kapha, such as Sandhivata, heel pain, and frozen shoulder. It provides immediate pain relief and prevents recurrence by alleviating localized Dosha imbalance.

- Kshara Karma

Kshara Karma possesses Lekhana and Shodhana properties and is used in chronic inflammatory conditions where fibrosis or abnormal tissue growth is present.

- Siravedha

Siravedha (therapeutic venesection) is recommended in severe pain and swelling associated with Rakta Dushti. It helps in relieving pressure, reducing inflammation, and improving circulation.

- Jalaukavacharana

Jalaukavacharana is beneficial in inflammatory joint disorders associated with Rakta Dushti.^[5] Leech therapy is especially beneficial in inflammatory musculoskeletal conditions like Amavata. It exerts anti-inflammatory, analgesic and microcirculatory effects and is safe even in delicate patients.

Preventive and Lifestyle Measures:

Ayurveda emphasizes Pathya-Apathya, daily regimen, and seasonal regimen in preventing musculoskeletal disorders. Ayurveda has vast scope in this area. Ayurveda advocates fault diet and lifestyle as one of the etiological factors of the diseases. Proper use of diet and elimination of faulty dietary and lifestyle factors provide better management option to the patients of chronic ailments. Ayurveda describes rules for taking meals for healthy as well as diseased persons. An ideal diet is balanced and easily digestible. ^[6]

Proper diet, Atapa Sevana (exposure to Sun rays), Mridushayya (Soft bed), Ushnodaka Snana (bath with warm water) avoidance of excessive strain, regular Abhyanga, and incorporation of Yoga practices help maintain joint health and prevent disease progression

Avoidable Lifestyle: Chinta (anxiety), Jagarana (awakened state), Vega Sandharana (control of natural urges), Shrama (fatigue due to physical work), Anashana (taking no food), Vyavaya (sexual act), Vyayama (exercise), Pravata (wind), Chankramana (mild exercise), Yana Gamana (travelling)

Role of ahara (diet) and vihara (lifestyle) in prevention and management of Musculo skeletal disorders:

Ahara (diet) and Vihara (lifestyle) are the key modalities of prevention and management of diseases in Ayurveda. The importance of diet can be understood with the fact that it has been called as Mahabhaishajya (the super medicine) in the Kashyapa Samhita. [7] In Ayurveda, it has been clearly mentioned that food should be taken keeping in mind the rule that one part of the stomach should be filled up with solid food, the second part with liquids and the third part should be left empty for proper action of Doshas. [8] The entire benefit cannot be obtained by taking food simply on the basis of the quantity of intake. There are eight factor - Prakriti, Karana, Samyoga, Rashi, Desh, Kala, Upayoga Samstha and Upayokta which determine the utility of food and are jointly responsible for bringing about the requisite benefits. [9]

Sadvritta (Code of Conduct) and Achara Rasayana:

Improper lifestyle habits, mental stress, and irregular routines contribute to Vata Dosha vitiation and MSDs. In this hectic compromising world to manage the physical and mental well-being, one has to adopt Achara Rasayana and Sadvritta. Achara Rasayana is essential for avoiding or treating Vatavyadhi, particularly psychosomatic and neurological disorders, since it stabilizes the mind, which calms Vata Dosha. It helps to stabilize Vata Dosha through mental calmness, practice of maintaining balance timing within sleep and wakefulness, avoid suppression of natural urges, practice regular meditation, chant calming mantras, and taking Sattvika Ahara (diet) as a practice for well-balanced and easily digestion, which allowing for optimal absorption, assimilation and metabolism for tissue level and to functioning properly for mental and physical health. Integration of Achara Rasayana with Ahara (food), Vihara (lifestyle), and Aushadhi (medicine) ensures a holistic approach to Vatavyadhi management in Ayurveda. [10]

Discussion:

Non-surgical and para-surgical Ayurvedic therapies offer a holistic and integrative approach to musculoskeletal disorders by addressing both structural and functional aspects of disease. These interventions are cost-effective, safer for long-term use, and suitable for patients who are unfit or unwilling for surgery. Combining classical Ayurvedic wisdom with contemporary clinical understanding can enhance patient outcomes and open new avenues for integrative research.

Conclusion:

Ayurvedic non-surgical and para-surgical management provides effective and sustainable solutions for musculoskeletal disorders by targeting the root cause of disease rather than merely alleviating symptoms. Panchakarma therapies and para-surgical procedures such as Agnikarma and Jalaukavacharana play a vital

role in managing chronic pain, stiffness, and disability. With growing interest in integrative medicine, these Ayurvedic modalities hold immense potential in improving musculoskeletal health and quality of life.

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32-Effect of Marma Massage Along with External Ayurvedic Therapies in the Management of Periarthritis Shoulder: A Case Report

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Introduction

Periarthritis shoulder, commonly referred to as frozen shoulder or adhesive capsulitis, is a chronic inflammatory disorder of the glenohumeral joint characterized by pain, progressive stiffness, and restriction of both active and passive shoulder movements. The condition is frequently associated with metabolic disorders such as diabetes mellitus and is more prevalent in the elderly population. Conventional management includes analgesics, corticosteroid injections, and physiotherapy; however, these interventions may be contraindicated or poorly tolerated in patients with multiple systemic comorbidities. In such situations, conservative, non-invasive, and externally administered therapeutic approaches may offer a safe and effective alternative. This case report describes the clinical outcome of Marma massage along with external Ayurvedic therapies in an elderly patient with periarthritis shoulder, where internal medications were avoided due to chronic kidney disease.

Methods

An 81-year-old male presented with pain and progressive restriction of movements of the right shoulder joint for the past six months. The condition had an insidious onset, initially manifesting as severe shoulder pain, which gradually progressed to marked stiffness and limitation of daily activities. There was no history of trauma. The patient was a known case of type 2 diabetes mellitus for the past ten years and chronic kidney disease with persistently elevated serum creatinine levels. He had previously consulted allopathic physicians and received analgesics and physiotherapy. However, the pain worsened with exercises, leading to discontinuation of physiotherapy. Due to his renal condition, the patient was unwilling to take any internal medications and hence approached for External Ayurvedic management. The patient had severe pain in the right shoulder, especially during night hours, along with marked restriction of both active and passive movements. Local tenderness and stiffness were present without any visible swelling or deformity. Based on the clinical presentation examination, the condition was diagnosed as periarthritis shoulder and correlated with *Avabahuka* in Ayurveda. Clinical progress was assessed using the Visual Analogue Scale (VAS) for pain and the Shoulder Pain and Disability Index (SPADI) for functional assessment.

Results

Over a treatment duration of approximately one and a half months, the patient showed a gradual and sustained reduction in pain along with significant improvement in shoulder mobility. The improvements were consistently reflected in the VAS and SPADI scores, indicating reduced pain intensity and enhanced functional capacity. By the end of the treatment period, the patient achieved near-normal shoulder function and was able to perform daily activities without significant discomfort. No adverse effects were observed during or after the treatment.

Discussion

Considering the patient's advanced age and comorbid conditions, structured phase-wise external treatment protocol was planned, avoiding internal medications. The initial phase focused on *Ama Pachana* and reduction of inflammation. The patient underwent *Pradeshika Dhanyamla Dhara* during daytime and *Pradeshika Upanaha Sweda* during nighttime for four days. The upanaha was prepared using Kolakulathadi Churna, Saindhava Lavana, Shatapushpa, Chenchalyam, Dhanyamla, milk, and buttermilk. This phase was continued until *Ama Lakshanas* subsided, which was clinically assessed by the reduction in night pain and local tenderness.

After resolution of inflammatory features, the second phase of treatment emphasized *Snigdha Chikitsa* aimed at reducing stiffness and improving joint mobility. The patient underwent *Pradeshika Jambheera Pinda Sweda* followed by Marma massage using Karpasasthyadi Taila and Chinchadi Taila for a period of ten days. Additionally, evening head oil application was administered using Nimbamrutadi Eranda Taila and Rasa Taila in a ratio of 1:2. Marma massage was performed daily for 20 minutes, specifically stimulating Amsa, Amsaphalaka, and Bahvi Marmas. The massage was combined with gentle passive shoulder movements such as abduction, flexion, and internal rotation. Gradually, rehabilitative exercises were introduced according to the patient's tolerance.

The management of this case highlights the importance of a phase-wise therapeutic approach in periarthritis shoulder. The initial phase addressed inflammation and *Ama*, while the subsequent phase focused on alleviating stiffness and restoring joint mobility. Marma massage played a vital role during the second phase by facilitating neuromuscular relaxation, improving local circulation, and enhancing joint movement through stimulation of specific Marmas related to the shoulder region. In the presence of severe comorbidities such as chronic kidney disease, where internal medications pose a risk, external Ayurvedic therapies combined with Marma Chikitsa can provide a safe, effective, and non-invasive treatment option. This case demonstrates that Marma massage along with external Ayurvedic therapies can be beneficial in the management of periarthritis shoulder, particularly in elderly patients with contraindications for internal medications. Further clinical studies with larger sample sizes are required to substantiate these findings and explore the therapeutic potential of Marma Chikitsa in musculoskeletal disorders.

33-Contemporary Management of Acute Musculoskeletal Soft-Tissue Injuries: A Critical Evaluation of the RICE and PEACE & LOVE Frameworks

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Abstract :

In order to maximize healing and avoid long-term incapacity, acute musculoskeletal soft-tissue injuries, such as sprains, strains, and ligamentous injuries, are frequently seen in clinical and athletic contexts. For the treatment of acute injuries, the RICE (Rest, Ice, Compression, Elevation) regimen has long been advised. However, the efficacy of extended rest and regular cryotherapy has been called into question by new developments in musculoskeletal healing biology and rehabilitation research. As a result, modern, evidence-based strategies like the PEACE & LOVE framework have been developed. The goal of this research is to compare and critically assess the RICE protocol with the PEACE & LOVE framework for the treatment of acute soft-tissue musculoskeletal injuries.

Peer-reviewed literature was subjected to a narrative review and qualitative comparative analysis, with a focus on works pertaining to inflammation, tissue healing, mechanotherapy, and functional rehabilitation. Important ideas from both frameworks were studied in context with functional recovery outcomes, therapeutic significance, and biological validity. The results show that the RICE protocol fails to take into account the physiological effects of inflammation and early mechanical loading, instead focusing on symptom reduction through rest and cryotherapy. The PEACE & LOVE framework, on the contrary, places a greater focus on protection through early education, limiting unnecessary anti-inflammatory interventions, and progressive loading together with exercise-based and psychological rehabilitation. Research demonstrates that better tissue repair and functional recovery are facilitated by patient-centered rehabilitation and regulated early loading.

In conclusion, the PEACE & LOVE framework offers a more comprehensive and modern approach that is compatible with the most recent concepts of musculoskeletal therapy, even though RICE has historical value. To create uniform standards and confirm its efficacy in a variety of populations, more clinical research is required.

Keywords : Acute musculoskeletal injury, Soft-tissue injury management, RICE protocol, PEACE & LOVE framework.

Introduction :

Musculoskeletal soft tissue injuries are common injuries of orthopaedic and sports medicine, soft tissue injuries include sprains, strains, contusions and ligament injuries. These injuries are a significant source of pain, functional impairment, and lower quality of life for people of all ages and activity levels [1]. Pain management, functional recovery, tissue healing quality, and prevention of long term musculoskeletal disability all depend primarily on initial treatment of such injuries [2].

For acute soft tissue injuries, the RICE (Rest, Ice, Compression, Elevation) protocol remains the accepted first line of treatment. Because of its easy to use and apparent efficacy in lowering the pain and swelling significantly, RICE has been widely used in clinical practice, athletic environment and educational material [3]. Despite the RICE protocol's universal adoption, there is still little scientific data to support its elements, such as extended rest and regular cryotherapy.

The usual control of inflammation after acute injury has been called into doubt by recent developments in musculoskeletal biology and rehabilitation science. It is not understood that inflammation is a biological process for tissue remodelling, regeneration and repair [4]. Recent studies have shown that excessive use of cryotherapy and anti-inflammatory treatment have shown that it hampers normal healing responses and delays muscle regeneration [5]. Furthermore, early regulated mechanical loading has been shown to promote tissue regeneration through mechanotransduction pathways, extended rest may contribute to muscle atrophy, joint stiffness, delayed functional recovery [2].

The PEACE & LOVE protocol was developed as a modern, evidence-based approach for managing acute soft tissue injuries in response to these developing ideas. While the PEACE component concentrates on stress protection, elevation, avoiding anti-inflammatory, compression and patient education in acute phase and LOVE component concentrates on progressive load, psychological optimism, vascularization, and structured exercise during rehabilitation phase [6]. This method encourages active recovery and patient involvement, which is consistent with contemporary musculoskeletal rehabilitation ideas.

Materials and Methods :**Study Design:**

The current study is a narrative overview and critical comparative analysis of two widely utilized frameworks for managing acute musculoskeletal soft-tissue injuries: the modern PEACE & LOVE framework and the conventional RICE procedure. Assessing their conceptual basis, clinical practicality, and compatibility to the state of knowledge about soft-tissue healing and rehabilitation was the goal.

Materials :

Peer Reviewed scientific publications were used to gather relevant data, with a focus of musculoskeletal rehabilitation, sports medicine, and orthopaedics. Among the primary sources were: Research papers, clinical explanations, and review articles original studies on mechanotherapy, tissue repair, cryotherapy, and inflammation. Guidelines and articles published in reputable journals, articles published in the British

Journal of Sports Medicine (BJSM) were given special consideration since they contributed to modern views on acute musculoskeletal soft tissue injuries. The primary source was the key publication by Dubois and Esculier (2019) that introduced the PEACE & LOVE protocol.

Methodology :

Keywords including acute musculoskeletal injury, soft tissue injury management, RICE protocol, PEACE & LOVE, Cryotherapy, early loading, and tissue healing were utilized in a targeted literature study. The collected data was examined for its relevance to rehabilitation concepts and acute injury care. The objectives, recommended methods, and declared limits of the RICE protocol were taken into consideration while analysing it. The biological explanation, focus on patient education, early loading, psychological aspects, and functional recovery of the PEACE & LOVE framework were all examined.

Comparative Analysis :

A qualitative comparison was performed focusing on:

- Biological basis of tissue healing.
- Role of inflammation and cryotherapy.
- Importance of early mechanical loading.
- Patient- centered and educational aspects.
- Implications for functional recovery and return to activity.

No statistical analysis was performed, as study was conceptual and descriptive in nature.

Ethical Considerations :

as this study involved analysis of previously published literature and did not include human or animal subjects, ethical committee approval was not required.

Results :

Clear conceptual and practical differences between the modern PEACE & LOVE framework and the conventional RICE procedure in the treatment of acute musculoskeletal soft-tissue injuries were found in the literature review.

Effect on Tissue Healing

The main goal of the RICE protocol is to reduce pain and edema by managing the symptoms with rest and cryotherapy. the inflammatory response, which is necessary for tissue repair and regeneration of tissue at injured site, which may be suppressed by extended rest and extensive cold use, according to the reviewed research [5]. The PEACE & LOVE protocol, on the other hand, promotes limited early activity and avoids use of anti-inflammatory therapies in order to preserve the natural healing process [2].

Role of Mechanical Loading

Early progressive mechanical loading enhances collagen alignment, tensile strength, and the functional recovery of soft tissue, as it has been extensively demonstrated in the literature [2]. While the LOVE component of PEACE & LOVE protocol actively encourages early loading and planned exercise, in line

with recent mechanotherapy principles, the RICE framework places less focus on progressive loading [6].

Pain and functional recovery.

Studies indicate that cryotherapy has short term analgesic effect but no appreciable long term improvements in the functional results [3]. By combining exercise based rehabilitation, patient education, and pain free progressive loading as mentioned in PEACE and LOVE framework supports long term functional improvement and return to activity [6].

Psychological and Educational Factors :

In a unique way the PEACE & LOVE framework integrates psychological optimism and patient education as essential elements of healing [6]. Healthy patient expectations and active rehabilitation engagement have been shown to have a significant impact on results. The RICE protocol does not solve these problems.

Comparative summary :

Overall, the results indicate that PEACE & LOVE offers a complete, biologically informed, and patient centered framework, whereas RICE is a passive and symptom oriented strategy. In terms of inflammation, tissue healing, rehabilitation science, and functional recovery, PEACE & LOVE shows excellent alignment. The review's finding validates the PEACE & LOVE framework as a more detailed and modern method for managing acute musculoskeletal soft tissue injuries than the conventional RICE treatment.

Discussion :

For the management of acute musculoskeletal soft-tissue injuries, the present review critically evaluates both the modern PEACE & LOVE framework and the conventional RICE method. The findings suggest a paradigm shift in injury therapy from passive symptom management to an active, patient-centered, physiologically based approach. Because of its simplicity of use and quick pain relief, the RICE procedure has historically been universally recognized. While rest and cryotherapy are known to lessen pain and swelling during the acute phase, recent study suggests that prolonged inflammatory suppression could hamper important biological processes for healing [4] [5]. By promoting cellular migration, vascular development, and extracellular matrix remodeling, inflammation is essential for tissue repair. As a result, the RICE framework's dependency on rest and ice could delay the ideal potential recovery.

The PEACE & LOVE framework, on the contrary, incorporates the most recent knowledge of tissue healing and rehabilitation science. The PEACE component limits unnecessary anti-inflammatory interventions while prioritizing protection without complete immobilization, elevation, compression, and patient education. The significance of early mechanical loading, vascularization, psychological optimism, and structured exercise is further emphasized by the LOVE component. These hypotheses comply with mechanotherapy concepts, which demonstrate that guided mechanical stress improves tissue strength, collagen formation, and functional recovery [2] [6]. The two frameworks differ significantly in that they take psychological aspects into consideration. The PEACE & LOVE framework acknowledges the impact of psychological well-being on recovery results through integrating optimism and patient education. Positive patient expectations and active involvement in rehabilitation greatly enhance recovery and lower

the risk, according to prior research.

Despite its benefits, the PEACE & LOVE framework depends more on emerging knowledge and expert agreement than on large controlled trials. This highlights the need of further research to validate its effectiveness across a range of patient demographics and injury types. When everything is taken together, the discussion supports the PEACE & LOVE framework as a more comprehensive and current approach than the conventional RICE protocol, in accordance with contemporary ideas of musculoskeletal rehabilitation and functional recovery.

Conclusion and Future Scope :

In the management of acute musculoskeletal soft-tissue injuries, the current evaluation critically assessed both the modern PEACE & LOVE framework and the conventional RICE technique. Though the RICE protocol has always been significant in the management of acute injuries by reducing symptoms, recent study reveals its weaknesses, particularly its excessive focus on rest and cryotherapy and the inadequate attention to biological repair and functional recovery.

The PEACE & LOVE framework, on the other hand, signifies an evolution in favor of a comprehensive, patient-centered, and scientifically proven strategy. PEACE & LOVE is more in line with contemporary concepts of musculoskeletal rehabilitation and mechanotherapy by understanding the essential role of inflammation in tissue healing, promoting early controlled mechanical loading, and integrating psychological and educational elements.

Based to the review's findings, PEACE & LOVE offers a more comprehensive approach to optimizing healing, enhancing functional results, and enabling a safe return to activity after acute soft-tissue injuries. When compared to the conventional RICE protocol, the PEACE & LOVE framework seems to be a better current approach overall, especially in the context of contemporary sports medicine and rehabilitation treatment.

Future Scope :

Although the PEACE & LOVE concept is becoming more widely accepted, more excellent clinical research remains needed to strengthen its evidence basis. Randomized controlled trials comparing RICE and PEACE & LOVE treatments across a range of musculoskeletal injury types and groups, such as athletes, the elderly, and physically active adults, should be the primary objective of future research.

For easy and consistent application in clinical practice, established clinical guidelines integrating PEACE & LOVE concepts should be created. Rehabilitation techniques would be further improved by research examining an ideal duration, intensity, and progression of mechanical loading and exercise therapies. Further research is necessary to determine how psychological and educational factors can improve compliance from patients and long-term results. Healthcare workers may become more aware of and adopt modern rehabilitation frameworks like PEACE & LOVE if they are integrated into medical, rehabilitation, and sports science courses. PEACE & LOVE has the potential to completely change the way that acute musculoskeletal soft-tissue injuries are treated with further research and clinical validation.

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34-Role of Agnikarma in Sandhigata Vata (osteoarthritis of knee joint)

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Abstract-

Introduction:

Sandhigata Vata is one of *Vata Vyadhi* characterized by the symptoms such as *Sandhishoola* (joint pain) and *Sandhishopha* (swelling of joint). Osteoarthritis (OA) is degenerative joint disorder, represents failure of the diarthrodial (movable, synovial-lined) joint. OA of knee joint comes under the inflammatory group which is almost identical to *Sandhigata Vata* described in Ayurveda with respect to etiology, pathology, and clinical features. *Agnikarma* (therapeutic heat burn) is one which gives instant relief from pain by balancing local *Vata* and *Kapha Dosha* without any untoward effects.

Aim:

To evaluate the efficacy of *Agnikarma* with *Rajata* and *Loha Dhatu Shalaka* in the management of *Janugata Sandhivata* (OA of knee joint).

Materials and Methods:

A total of 28 diagnosed patients of *Janugata Sandhivata* were registered and randomly divided into two groups. In Group-A, *Agnikarma* was done with *Rajata Shalaka* while in Group-B *Agnikarma* was performed by *Loha Shalaka* in four sittings. Assessment in relief of signs and symptoms was done by weekly interval, and Student's *t*-test was applied for statistical analysis.

Results:

Group-A provided 76.31% relief in pain while Group-B provided 83.77% relief. Relief from crepitus was observed in 57.13% of patients of Group-A, while 57.92% of patients of Group-B. There was statistically insignificant difference between both the groups. *Loha Shalaka* provided better result in pain relief than *Rajata Shalaka*.

Conclusion:

Agnikarma is effective nonpharmacological, parasurgical procedure for pain management in *Sandhigata Vata* (OA of knee joint).

Keywords: *Agnikarma, Loha-Shalaka, osteoarthritis, Rajata Shalaka, Sandhigata Vata,*

Sandhishoola

Introduction

Pain is an unfavorable sensation that brings an individual to the physician due to a halt from his routine works. The condition is more painful when mobile joints such as *Janusandhi* (knee joint) of the body are involved due to *Sandhigata Vata*. The disease *Sandhigata Vata* is more prone to be affected to knee joint because it is most frequently involved joint in daily routine work, weight bearing joint of the body, and more prone to develop in overweight patients. In the pathogenesis of *Sandhigata Vata*, *Vata Dosha* dominant with symptoms such as *Vedana* (pain during joint movement) and *Shopha* (swelling). The joint stiffness and crepitus (specific sound during joint movement) are symptoms that may be co-related in modern parlance with osteoarthritis (OA) of the knee joint. OA is the second most common rheumatologic problem and is the most frequent joint disease having prevalence of about 22–39% in India. Among them, 29.8% persons between 45 and 64 years of age group report diagnosed arthritis.[1] OA of the knee joint is seen most common in the clinical practice of elderly population. Below 45 years of age, this disease is common in men and involves one or two joints, while in female, 55 years of age, usually involving multiple joints.[2] OA is the most common form of arthritis and leading cause of chronic disability mostly in all the population. For the management of OA, patients need to take analgesics for daily and lifelong. In OA, surgical therapy-like knee joint replacement is very costly and even after surgery patient has to continue some medicine for a long duration. The use of analgesics and steroids in old age may produce adverse effects such as gastritis, hyperacidity, and sometimes renal failure.[3] *Agnikarma* is a nonpharmacological treatment which has definite role in *Sandhigata Vata*. The emphasis of the Ayurvedic approach of *Agnikarma* is to relieve the pain in OA. It may be more effective in the management of *Janugata Sandhivata* (OA of knee joint). Sushruta has given direction for treatment of the *Sandhigata Vata* by *Agnikarma*. [4] While describing the indications of *Agnikarma*, he also explained that *Agnikarma* can be done when severe pain occurs in *Twaka*, *Mamsa*, *Sira*, *Snayu*, *Sandhi*, and *Asthi* due to vitiation of *Vata Dosha*. [5] Hence considering these facts, the current study has been planned to evaluate the efficacy of *Agnikarma* with *Rajata* and *Loha Dhatu Shalaka* in the management of *Janugata Sandhivata* (OA of knee joint)

Materials and Methods

Patients ($n = 30$) suffering from sign and symptoms of *Sandhigata Vata*, such as pain, tenderness, stiffness and crepitus in knee joint, were registered from OPD and IPD of Shalya Tantra Department, IPGT and RA Hospital, Jamnagar irrespective of sex, caste, religion, etc. Informed written consent was taken from all the patients. The study was commenced after Institutional Ethics Committee approval (No: PGT/7/A/Ethics/2010-2011/1858; dated: 01/09/2010).

Inclusion criteria

- Patients suffering from *Janugata Sandhivata* (OA of knee joint)
- Age group of 45–70 years
- Patients of either gender

Exclusion criteria

- Patients below 45 years and above 70 years age
- Patients with diabetes mellitus (DM), rheumatoid arthritis (RA)
- Other diseases such as paralysis, Parkinson's disease, severe anemia, and cancer patients
- Secondary OA due to tuberculosis (TB), syphilis, AIDS, leprosy, etc
- *Sandhigata Vata* other than *Janugata Sandhivata*
- Pregnant patients as they are contraindicated for *Agnikarma*.

Investigations

Routine hematological and biochemical investigations such as blood sugar (fasting and postprandial), uric acid, RA factor, lipid profile, and routine urine analysis were carried out before starting treatment to rule out any other pathology. Radiological examination was carried out before and after completion of treatment

Grouping

Total 30 selected patients were randomly divided into two groups (1) Group-A and (2) Group-B ($n = 15$ each).

- Group-A: Patients were treated by *Agnikarma* with *Rajata Shalaka*
- Group-B: Patients were treated by *Agnikarma* with *Loha Shalaka*.

Agnikarma was done in four sittings with a weekly interval.

Requirements

- *Agnikarma Shalaka*: Specification of *Rajata* and *Loha Shalaka* was depicted in [Table 1](#)
- *Triphala Kwatha* (decoction): It was used for the cleaning of local part before *Agnikarma*
- *Haridra Churna* (powder of *Curcuma longa* L. rhizome): It was used for dusting after *Agnikarma* (dressing purpose)
Ghridakumari (*Aloe barbadensis* Miller. leaf): It was used as soothing effect after *Agnikarma* (dressing purpose)

Methodology

Procedure of Agnikarma

The procedure performed in three stages as *Purva Karma*, *Pradhana Karma*, and *Paschata Karma* mentioned by Acharya Sushruta.[6]

Purva Karma

Snigdha Picchila Annapana (rice and curd) was given prior to the procedure. The site of *Agnikarma* is washed with *Triphala Kwatha* and wiped with dry sterilized gauze and covered with a cut sheet. *Shalaka* was heated up to red hot (*Rajata Shalaka* approximately for 3–4 min and *Loha Shalaka* approximately for 15 min). *Ghritakumari* pulp, *Haridra Churna* kept ready for dressing.

Pradhana Karma

In OA of the knee joint, supine position was adopted as it is comfortable to the patient. Irrespective of a specific site, *Agnikarma* was done at maximum tender site affected at the knee joint. The minimum space was kept between two *Agnikarma* points to avoid overlapping of *Dagdha Vrana*. After *Agnikarma*, fresh *Ghritakumari* pulp was applied on *Dagdha* to relieve burning pain.

Pascha Karma

After wiping of *Ghritakumari* pulp, honey and ghee was applied on *Dagdha Vrana*, after that dusting of *Haridra Churna* was done. Patient was observed for 30 min after procedure and advised *Pathyapathya* as mentioned in Sushruta Samhita[7] until the healing of *Samyak Dagdha Vrana*. Patients were strictly advised not to allow water contact at *Dagdha Vrana* site for 24 h.

Assessment criteria

Subjective parameters

The assessment of relief of sign and symptoms was done after completion of treatment by following graded subjective parameters. The grade of pain, crepitus, and tenderness were noted before and after treatment.

Objective parameter

The measurement of swelling at knee joint was recorded at three sites that are midpoint of patella, 2 inches above and below patella. The goniometric reading of knee joint on flexion and extension was measured with the goniometer.

Overall assessment of therapy

- Cured: 91–100% improvement
- Marked improvement: 70–90% improvement
- Moderate improvement: 50–69% improvement
- Mild improvement: 25–49% improvement
- Unchanged: <25% improvement.

Statistical analysis

Paired *t*-test was applied for assessment of individual group whereas unpaired *t*-test was used to assess the comparative efficacy of the *Agnikarma* in Group-A with Group-B

Observations

Out of 30 registered patients, 28 completed the therapy (14 in each group). Demographic data of the study that is age, sex, religion, socioeconomic status, etc., are depicted in [Table 2](#). Cardinal symptom of OA that is joint pain and crepitus was observed in all registered patients

Results

Group-A (*Rajata Shalaka*) provided 76.31% relief in pain while in Group-B (*Loha Shalaka*) provided 83.77% relief and found highly significant ($P < 0.001$). *Agnikarma* by *Rajata Shalaka* provided 57.13% relief from crepitus in Group-A, and *Agnikarma* by *Loha Shalaka* provided 57.92% relief from crepitus in Group-B. Statistically, both the groups showed statistically significant ($P > 0.05$) results in crepitus as there is not structural change in knee joint after *Agnikarma* [[Tables 3](#) and [4](#)].

Effect of *Agnikarma* on swelling of knee joint

In Group-A, 04.21% and while in Group-B, 04.67% relief was observed in the level of swelling measured at midpoint of patella, which was found statistically found significant ($P < 0.05$) after 4 weeks of treatment.

Agnikarma with *Rajata Shalaka* in Group-A provided 04.31% relief while *Loha Shalaka* in Group-B provided 04.71% relief in the girth measured at 2 inches above the patella, which was found statistically significant ($P < 0.05$).

Group-A provided 04.17% relief while Group-B provided 04.22% relief in swelling measured at 2 inches below the patella, which was found statistically significant ($P < 0.05$) [[Tables 3](#) and [4](#)]

Effect of *Agnikarma* on knee joint movements

In goniometric observation, angle of extension was found increased by 10.40% in Group-A and 6.19% in Group-B. Angle of flexion was found reduced 33.70% in Group-A and 39.16% in Group-B [[Tables 3](#) and [4](#)].

In X-ray of the knee joint, there was no any change found in osteophytes and space reduction

before and after *Agnikarma* treatment, because it is the structural defect.

Comparison of both the groups

On comparing the data of both the groups, statistically insignificant difference was observed in all the parameters [Table 5].

Overall assessment

Total cured patients were 28.57% while marked improvement was observed in 25% of the total patients. The moderate change was observed in 28.57% patients while 14.26% and 3.57% patients were observed in mild improvement and unchanged category, respectively [Table 6]

Discussion

In the present study, 100% of patients were reported in the age group of 45–65 years. Demographic studies revealed that osteoarthritic changes commence between the 4th and 5th decades of life.[8] Maximum 73.33% patients were belonged to Hindu religion; this is due to the Hindu-dominant population in the study area.[9] The study conducted in urban area so majority of the patients 86.66% were belonging to urban habitat. In this study, 66.66% of patients were observed from the middle class. 73.33%.literate patients were observed might be due to awareness regarding the health and the location of the hospital in urban area.The majority of patients 50% followed *Viruddhashana* in their routine diet which leads to *Agni Vaishamya* and *Vataprakopa* resulting in *Dhatukshaya* which coupled with old age leads to *Sandhigata Vata*. This type of dietary habit affects the *Agni* resulting in formation of *Aama*, leading to *Agnimandya* and *Dhatvagnimandya*, which ultimately obstructs the *Srotas*. Due to obstruction of *Srotas*, *Vata* gets vitiated and affects *Sandhi* of knee resulting into *Janugata Sandhivata*. Maximum patients were having *Madhyama Koshta* (63.33%). Maximum 50% patients had *Madhyama* built, whereas 40% patients had *Sthula* built. It is observed that *Sthaulya* (obesity) causes excess *Vridhhi* (increase) of *Dushita Medas* and deprive nutrition to later *Dhatu*s, especially *Asthi* and *Majja* which are the *Dushyas* of *Sandhigata Vata*. In *Madhyama* built patients, the cause of *Sandhigata Vata* is taking *Apathyakara Ahara* and *Vihara* as prevailing in the modern lifestyle. Maximum patients (60%) were found to be having some addiction. Among them, tobaccos chewing addicted patients were 23.33%. Provocative findings of tobacco chewing on OA of knee joint have been reported from various studies including Framingham study.[10] *Prakriti* of patients was noted to know the relation of *Prakriti* to incidence of OA. In this study, it was found that *Vata Prakriti* was observed in 26.66% patients in which *Vata* vitiation played an important role in initiation and manifestation of *Sandhigata Vata*.

The majority of patients (46.66%) had chronicity up to 1 year suggesting OA is a slowly progressive disease that can also be linked with lifestyle related disorder. All the *Yapya Vyadhis* (disease which are difficult to cure) are chronic in nature as mentioned in classics;[11] as such observations in this study reflects the chronicity of *Sandhigata Vata*. The chronicity is inversely

proportional to the prognosis of disease that is, if chronicity is less, prognosis will be good. In this study, 96.67% patients were reported pain during walking, during routine activity flexion and extension of the knee joints involves movements of ligaments and frictions of the osteophytes which aggravate the pain. The 80% patients had the history of gradual onset in OA gradual, and slow progression of joint change takes place. About 43.33% of female patients reported menopause; osteoporotic changes occur at the stage of menopause in female, postmenopausal hormonal variations is responsible for bone demineralization leading to osteoporosis and ultimately produces OA changes.[12,13]

Vedana (knee joint pain) and *Sandhi Sphutana* (crepitus) were present in 100% patients were prominently seen in the subjects indicating active phase of the disease. These all symptoms occur due to *Vataprakopa* and *Kaphakshaya*, as well as *Majja Dhatu Dusti*. About 56.67% of patients were having unilateral OA followed by 43.33% of patients were having bilateral OA of the knee joint. The available data showed that unilateral OA is most common in male while bilateral OA is observed in mostly female patients.[14]

Probable mode of action of Agnikarma

After *Agnikarma*, the *Ushna* (hot) *Guna* of *Agni* pacifies the *Shita* (cold) *Guna* of *Vayu* and reduces the joint pain in the case of *Sandhigata Vata*. Acharya Charaka described that *Agni* is the best treatment for *Shoola* (pain).[15] *Ushna Guna* of *Agni* helps to remove the *Avarana* effectively and stabilizes the movement of *Vata*, which provide relief from *Shoola*. As per the modern medicine, therapeutic heat increases blood circulation at knee joint leads to the proper nutrition of the tissue. This induced circulation help to flush away pain producing substances from affected site and ultimately reduces the local inflammation.[16] The osteophytes was recorded unchanged after *Agnikarma* because it was a structural defect, and it is difficult to correlate the impact of *Agnikarma* on osteophytes, the *Ashukari* (quick acting) property of *Agni* also provided improvement in the movement of joints resulted in relief of crepitus.[17] The heat application is indicated in cases of chronic inflammation.[18] Heat leads to vasodilatation, exudation of fluid, increase in white blood cells and antibodies. This response obtained on heating the tissues is augmentation of these changes for certain period and reduce the chronic inflammation. *Shita Guna* of *Vata* in the tissue and muscle is normalized by *Agnikarma*, the muscle spasm releases which improve flexion and extension of knee joint.

Acharyas have quoted that *Agnikarma* is superior in treating *Stambha* (stiffness).[19]

Conclusion

After vivid discussion, it can be said that *Agnikarma* had a definite role in pain relief in patients of *Sandhigata Vata*. The *Agnikarma* was done by *Twakgata*, so there was no statistically different result between *Rajata* and *Loha Shalaka*. However in pain relief, *Loha Shalaka* provided better results than *Rajata Shalaka*. *Agnikarma* is a nonpharmacological, OPD procedure required minimum equipment so that it can be used for pain management in *Sandhigata Vata*.

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35-A SINGLE CASE STUDY OF ARKA PATRA AGNIKARMA IN MANAGEMENT OF MANYASTAMBHA

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Introduction

Prolonged exposure to computer applications, combined with poor ergonomics and abnormal sleeping postures, precipitates several Nanatmaja Vata Vyadhis, including Manyastambha, which interferes with normal human functioning. In Ayurveda, Manyastambha is enumerated among the disorders caused exclusively by Vata Dosha, known as Vataja Nanatmaja Vikaras. Stiffness of the back of the neck with reduced range of movement is a cardinal feature of Manyastambha. Due to overlapping signs and symptoms, it resembles cervical spondylosis of the contemporary medical system. Manyastambha, is characterized by stambha (stiffness), ruja (pain), graha (muscle tightness), and gati-sankocha (restricted movements) of the manya pradesha due to aggravated Vata Dosha. Cervical spondylosis is clinically manifested by pain in the neck and shoulder region, often accompanied by radiating, shooting pain along the upper limbs. Progressive degenerative changes may cause spinal canal narrowing, leading to compression of the spinal cord or exiting nerve roots. This results in radicular pain, sensory disturbances such as tingling and numbness, muscle weakness, and reduced work efficiency. Modern medical management of cervical spondylosis primarily focuses on pain relief using NSAIDs, analgesics, and muscle relaxants. These drugs, however, may cause adverse effects such as hepato-renal toxicity, gastrointestinal irritation, and dependence. Persistent pain and progressive spinal cord involvement may occur despite treatment, and many patients are reluctant to undergo costly surgical interventions that offer only temporary relief

Aims and objectives

- To evaluate the efficacy of Arka patra Agnikarma in the management of Manyastambha
- To assess improvement in daily activities and functional capacity after treatment
with Arka patra Agnikarma

Case Report

Chief Complaints:

1. Pain and stiffness in the back of neck region since 2 years
2. Giddiness since 2 years
3. Difficulty in movement of the neck from 2 months.
4. Pain at right scapular region since 2 months.
5. Pain and tingling sensation in right hand.

History of Present Illness:

A 43 years old female patient was asymptomatic before 2 years then she had complaints of pain and stiffness in the back of her neck due to excessive work in the home followed by Giddiness ,after few months pain started radiating to right upper limb with tingling sensation and difficulty in movement of the neck. Then after some months she developed pain at right scapular region. Therefore she came to Shalyatantra OPD of SSAM &H, Nashik for further management

History of Past Illness: No significant illness was found.

Surgical history : No any past surgical history.

Personal History.

- Appetite – decreased
- Micturition – 4times/day
- Bowel – Constipated
- Sleep – Improper

On Examination

- B.P. - 130/80 mm of Hg
- Pulse rate - 78/min
- R.R. - 18/min
- Spo₂- 99%

Ashtavidha Parikshana

1. Nadi - Vata Pradhan Pitta Anubandhi
2. Mala - Asamyak
3. Mutra - Samyak
4. Jivha - Sama
5. Shabda- Prakrut
6. Sparsha -Anushna sheeta

7. Druka- Prakrut

8. Akrti - Madhyam

Range of motion:

Flexion – Painful

Extension – Painful

Neck stiffness was present with decrease range of cervical movement

Treatment:

Sthanik abhyanga was performed with Moorchit Til Taila and followed by Arka patra Agnikarma for 7 days



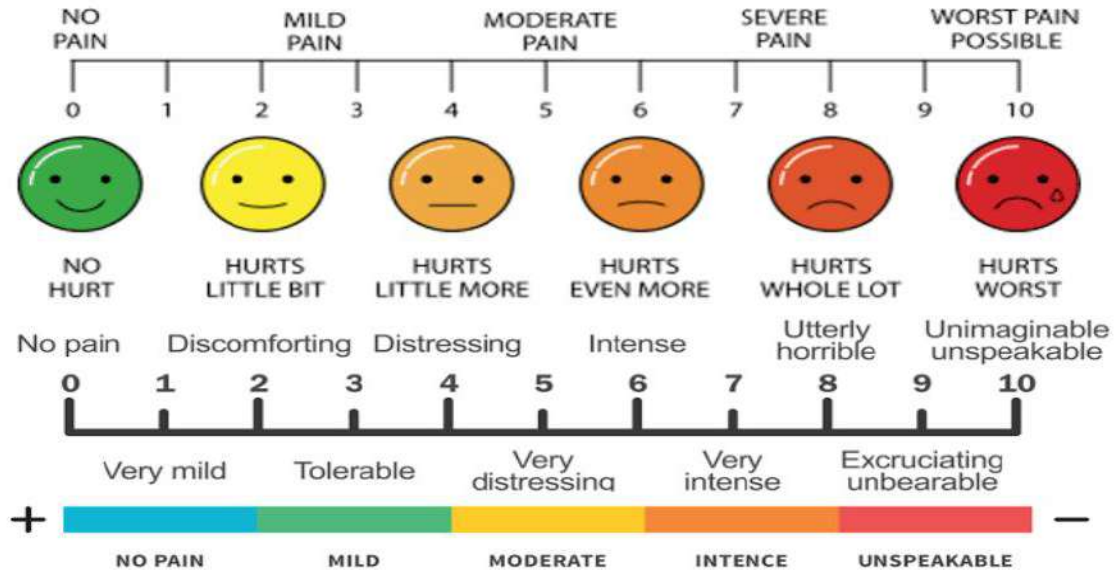
Procedure:

- The procedure was explained in detail to the patient, and written informed consent was obtained prior to initiation.
- Sthanika Abhyanga (local oil massage) was performed over the affected area using Murchita Tila Taila.
- Following abhyanga, the tender points were identified and marked. Fresh Arka Patra (leaves of *Calotropis procera*) were placed over the marked tender points. A spirit-soaked swab, held with a long artery forceps, was ignited and carefully applied over the Arka Patra to provide controlled therapeutic heat, ensuring patient comfort and safety throughout the procedure.

The patient tolerated the procedure well, and no immediate complications were observed.

ASSESSMENT CRITERIA

- **VAS Scale (Visual Analogue Scale)**



- **Range of Motion (ROM) of Cervical Spine**

- Flexion
- Extension
- Lateral flexion
- Rotation

RESULTS

- After completion of the treatment, the patient was re-evaluated.
- The patient remained clinically stable during that period.
- Pain was notably relieved, and neck pain and stiffness showed significant reduction. Pain and tingling sensation in the right upper limb were decreased.

Visual Analog Scale (VAS) score

Before treatment : 3 After treatment : 8

Cervical Range of Movement (CROM)

Movement	Before Treatment (°)	After Treatment (°)
Flexion	25	55
Extension	30	55
Lateral Flexion (Left).	25	40
Lateral Flexion (Right)	25	35
Lateral Rotation (Left).	20	45
Lateral Rotation (Right)	25	45

DISCUSSION

Based on the nidanas identified in the patient, Vata and Kapha doshas become aggravated and localize in the manya pradesha (cervical region), leading to the manifestation of the disease. The manya region is composed of snayu, peshi, kandara, and sira, which are structurally supported and functionally interconnected by Shleshma-dhara kala. This kala provides lubrication and facilitates smooth movement of the neck and represents an important Kapha sthana, characterized by shleshma gunas. When Kapha becomes vitiated due to various nidanas, it affects the Shleshma-dhara kala and, due to the presence of ama guna, produces stambhata (stiffness) in the neck region. As a result, the normal movements of the neck are restricted. Further, vitiated Kapha along with saam avastha causes srotavarodha, which obstructs the normal movement of Vata. This obstruction leads to Vata prakopa, resulting in vedana (pain) in the cervical region. Thus, stambhata and vedana are the main clinical features of Manyastambha, caused by the combined involvement of Vata–Kapha doshas

According to Ayurveda, Vata dosha is responsible for all movements in the body and plays a major role in the musculoskeletal and nervous systems. Hence, disorders involving these systems are mainly due to Vaat dushti. Clinically, neck pain in such conditions occurs due to muscle spasm, and symptoms like numbness or tingling in the upper limb are due to compression of cervical nerves. Arka patra agnikarma increases local blood circulation in the cervical region and helps in reducing inflammation. In cervical spondylosis, degeneration of the intervertebral disc and impairment of the lubricating function of Shleshmaka Kapha lead to nerve compression, resulting in pain and muscle spasm. Therefore, local agnikarma is highly effective as it acts directly at the site of samprapti and provides quick relief.

The phytochemicals present in Arka (*Calotropis procera*), including calotropin, alkaloids, and flavonoids, are capable of transdermal absorption and exert localized pharmacological effect.

CONCLUSION

- Manyasthambha exhibits clinical features comparable to those of cervical spondylosis and is classified under Vataja Nanatmaja Vyadhis. The primary Doshas involved in its pathogenesis are Vyana Vata and Sleshaka Kapha. Arka Patra possesses Vatahara and Kaphahara properties. Arka Patra Agnikarma has demonstrated significant efficacy in reducing the symptoms of Manyasthambha, particularly pain and stiffness.
- Arka Patra Agnikarma is an effective Ayurvedic therapeutic modality for the management of musculoskeletal and joint disorders associated with Vata and Kapha imbalance.
- The Agnikarma effect facilitates relief from pain, rigidity, and inflammation by improving local circulation and reducing strotavrodha.
- Integration of this therapy into contemporary clinical practice may offer a safe, non-invasive, and holistic approach for the management of chronic musculoskeletal pain and inflammatory conditions.

36-Effect of Basti and Swedan in the management of Amavat w.s.r. to Rheumatoid Arthritis”– A Case Study

Author

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ABSTRACT

In the classical literature Madhavanidana, Madhavakara describes Amavata in detail. Based on clinical similarities, Amavata can be compared to contemporary Rheumatoid Arthritis. Rheumatoid arthritis is the most common chronic inflammatory disease. . Ama is a causative factor for Amavata.Ama dosha interacts directly with Vata dosha in Amavata, causing joint inflammation,deformity, and immobility in the fingers, feet, and ankles, as well as stiffness throughout the body. Langhana, Swedana, Deepana, Tikta-katu rasa, Virechana, Basti, and other aspects of Amavata management are described in detail in Ayurveda.In this study A 53 year old female patient with complaints of Shoola, Shotha and Sthamba of the knee, wrist, ankle and metacarpophalangeal joints of both hands since a year, morning stiffness for 1 hour was reported in hospital kayachikitsa department OPD. Considering the Lakshanas and the blood investigations, it was diagnosed as Amavata. and treatment was planned in which Shaman, Shodhan (basti) & Bahya Chikitsa were included . The results was a significant improvement in the symptoms as well as in the level of RA Factor, ESR, CRP & she was able to perform her routine work without any difficulty. Hence it is concluded that the given therapy can be of great help in managing the cases of Amavat.

Keywords – Amavata, Rheumatoid arthritis, Basti ,swedana, Shaman chikitsa, Bahyachikitsa

Introduction

Amavata is first described as a separate disease in Madhava Nidana, where it is mentioned that Mandagni plays an important role in the manifestation of the disease. Pratyatma Laksana include Gatrastabdhat, Sandhishula, Sandhishotha, Sparshasahyata associated with extra articular symptoms like Angamarda (body Pain), Aruchi (loss of taste), Thrishna (thirst), Alasya(lack of enthusiasm), Gourava(heaviness), Klama(tiredness without doing work), Apaka(indigestion) and jwara.¹

Amavata is a chronic illness induced by the production of ama (toxin) and vitiation of the Vata and Kaphasthana in the body. The Sleshma sthana are primarily the synovial joints.²The vitiated Vata circulates the Ama through the Dhamanis and lives in the Sleshma sthana, causing sandhishotha, sandhishoola,and sanchari vedana in both small

and large joints.³Amavata is a disorder that is quite similar to rheumatoid arthritis, which is a very severe ailment. Rheumatoid arthritis is a systemic inflammatory disease that affects the synovial joints and has extra-articular symptoms⁴.Joint discomfort, stiffness, tenderness, and restricted movements are the most common symptoms.The Concepts of treatment for Amavata have been described by Acharya Chakrapani.⁵Some therapy procedures that are Useful in Amavata include Langhana, Swedana, Tikta-Katu rasa dravyas, Deepana dravyas, Virechana, and Anuvasana Basti.If the chikitsa is properly followed,Amavata can be controlled.

Aim and objective

To study the effect of Basti and Swedan in the management of Amvata.

Material and Methods

This is a single case clinical study. The patient was treated with specific regimen & progress was assessed. After proper Councelling,the line of treatment was explained & written informed consent was taken .

Case history

Study in which a 53-year-old female patient,who had apparently been normal one years back, Gradually she noticed shool,shoth and stambh in the knee,wrist,ankle,metacarpophalangeal joint with mild stiffness. After few days, pain got aggravated and found difficulty in the daily routine activity with severe stiffness. Patient had visited Kayachikitsa- Out Patient Department, for Ayurvedic management. Patient was thoroughly examined and detailed history was taken & admitted in Kayachikitsa female ward for management.

Chief Complaint

The onset of symptoms developed around one years back.The symptoms such Shoola, Shotha and Sthamba of the knee, wrist, ankle and metacarpophalangeal joints of both hands since a year and morning stiffness for 1 hour .

History of Past Illness: No h/o of hypertension, diabetes and any other illness.

Menstrual history: Menopause

Personal history

- Ahara- Samishra (mixed diet)
- Vihara-Diwaswapna (morning sleep habit)
- Nidra- Disturbed due to pain
- Mala pravritti: Samyaka (Satisfactory)
- Mutra pravritti: Samyaka (Satisfactory)
- Vyasana: Tea (2-3 times a day)

General Examination

- Vitals: Pulse rate: 79/min
- Blood pressure: 130/90 mm/hg
- Respiratory rate: 16/min

Systemic examination:

On examination, the patient is conscious, RS = NAD, CVS= S1, S2

Normal

Musculoskeletal examination

Inspection

Swelling – present over metacarpophalangeal joints of both hand , both wrist joints,both knee joint left ankle joint

Redness – absent

Difficulty in flexion and extension of metacarpophalangeal, wrist and knee joints

Table no. 1

Sandhishoth (swelling)

No pain	0
Occasional pain of bearable nature	1
Difficulty in joint movement due to pain	2
Can not move the joint due to pain and restriction	3

Table no.2

Sandhishool(severity of pain)

No swelling	0
Swelling involving only 1 joint	1
Swelling involving 2-5 joints	2
Swelling involving more than 5 joints	3

Table no.3

Sandhistabdhatva(Stiffness)

No stiffness	0
Up to 1 hours	1
1 to 2 hours	2
>2 hours	3

Table no.4

Sparshasahatva(Tenderness)

No tenderness	0
Subjective experience of tenderness	1
Wincing of face on pressure	2
Wincing of face and withdrawal of affected parts	3

Lab. Investigation Hb –12.1 gm% ESR – 60 mm/1hr,CRP – 11 mg/dl ,

RA Factor – 170 IU/ml(positive)

DIAGNOSIS

Patient was diagnosed as case of Amavata (Rheumatoid arthritis)

TREATMENT PLAN

Shodhan chikitsa :-

Patient was given sarvang swedana (Fomentation) with Dashmoola Kwatha prior to basti karma (medicated enema).

Basti Karma -

Ingredients of Matra basti – Brihat Saindhavadi Taila.

Saindhava Lavana(Rock salt), Shreyasi (Scindapsus oofficinalis), Rasna (Pluchea Lanceolata),Shatapushpa (Anethum sowa), Yavani (Trachyspermum ammi), Maricha (Piper Nigrum), Shunti (Zingiber officinalis), Kusta (Saussurea lappa), Sauvarchala (Sochal salt),Vida (Vida salt), Ajamoda (Carum roxburghianum), Madhuka (Glycyrrhiza glabra), Jiraka (Cuminum cyminum), Pushpaka (Inula racemosa), Kana (Piper longum), Eranda Taila (Ricinus communis), Shatapushpa Ambu (Anethum sowa), Kanji (Fermented gruel), Mastu. In this, Bruhatsaindhavadi tail Basti dose of 60 ml was given in morning session(10 am to 11am) , for 7 days. Patient was detained for 30 minutes in left lateral position for optimum effect of therapy.

3. Vaitaran Basti

Ingredients of Vaitaran Basti

2. Tamarind puree- 50 gm.
3. Jaggery- 100 gm
4. Rock salt- 10 gm.
5. Cows urine- 250 ml
6. Sesame oil- 40 ml

Shamana chiktisa :-

- Sinhanad Guggulu - (250 mg) three times a day
- Punarnava Guggulu –(250 mg) three times a day
- Amapachak vati (250mg) three times a day
- Shunthi,Guduchi,Haritaki(4gm each) Kwath- 20 ml two times a day with lukewarm water.

Bahyachikitsa

- Shothhar lepa(L.A)
- sand sadation.

Table no.5 treatment schedule

IPD from 30/5/2023 to 6/6/23

Procedure	Dose	Days
Sarvang swedan	-	7
Matra basti	60ml	7
Sinhanad guggul	tid	
Punarnava guggul	tid	
Amapachak vati	tid	
Shunthi, Guduchi, Haritaki kwath	bd	
Shothhar lepa	Morning+ Evening	
Valukapottali swed	Evening	

OPD level medicine from 7/6/23 to 29/11/23

Sinhanad guggul	Tid
Punarnava guggul	Tid
Amapachak vati	Tid
Shunthi, Guduchi, Haritaki kwath	Bd
Shothhar lepa	Morning+ Evening
Valukapottali swed	Evening

IPD from 30/11/23 to 6/11/23

Sarvang swedan	-	7days
Matra basti	60ml	7days
Sinhanad guggul	tid	
Punarnava guggul	tid	
Amapachak vati	tid	
Shunthi, Guduchi, Haritaki kwath	bd	
Shothhar lepa	Morning+ Evening	
Valukapottali swed	Evening	

OPD level medicine from 7/11/23 to 23/4/24

Sinhanad guggul	Tid
Punarnava guggul	Tid
Amapachak vati	Tid
Shunthi, Guduchi, Haritaki kwath	Bd
Shothhar lepa	Morning+Evening
Valukapottali swed	Evening

IPD from 24/4/24 to 4/5/24

Matra basti and vaitaran basti were given alternate day

Sarvang swedan		7 days
Matra basti	480ml	3 days
Vaitaran basti	60ml	4 days
Sinhanad guggul	1 tid	
Yograj guggul	1tid	
Punarnava mandur	1 tid	
Shunthi, Guduchi, Haritaki kwath	20ml bd	
Shothahar lepa	Morning+Evening	
Valukapottali swed	Evening	

OPD level Medicine 5/5/24 to 15/5/24

Sinhanad guggul	Tid
Yograj guggul	Tid
Punarnava mandur	Tid
Shunthi, Guduchi, Haritaki kwath	20ml bd
Shothahar lepa	Morning+Evening
Valukapottali swed	Evening

Observation and Results

During the course of the treatment, there was marked decrease in the severity of symptoms Like pain, swelling and morning stiffness and improvement in the appetite, generalized Weakness and range of motion of the affected joints. Hematological

investigations which were done at regular intervals also showed significant improvement which is shown in the Table below

Assessment criteria

	BT 30/5/23	AT 6/6/23	BT 30/11/23	AT 6/11/23	BT 24/4/24	AT 4/5/24
Sandhishool	2	1	2	1	1	1
Sandhishoth	3	2	2	1	1	0
Sandhistabdhatva	1	1	1	0	1	0
Sparshasahatva	2	1	1	0	1	0

Haematological investigation

Date	Rheumatoid factor (IU/ml)	C-reactive protein(mg/dl)	ESR(mm/hour)	Haemoglobin (gm%)
20/5/2023	212	-	-	-
27/10/2023	170	11	60	12.1
28/3/2024	33.21	13.21	40	9.6
19/9/2024	4.2	8.3	35	11.3

Discussion

The Chikitsa Siddhant for Amavata was first described by Chakradatta. Langhana, Swedana, medicines with Tikta, Katu Rasa, and Deepana action, Virechana, Snehapana, and Anuvasana, and Ksharabasti are all included. Amavata is regarded as a Rasaja Vikara and an Amashayotha vyadhi. In such cases, Langhana is the first line of defence. The ideal measure for the treatment of Ama has been stated in Yogaratnakar Langhana. Due to the existence of Ama, Ruksha sweda has been supported in the form of Valuka pottali in the Amavata. It helps to balance the vitiated Vata Dosha, which relieves pain and stiffness. The medications utilised in the therapy procedure aid in controlling the disease's pathogenesis. On the action of Basti, Vagabhatta says the Virya of Basti is conveyed to Apana and then to Samana Vata, which may regulate the function of Agni. It then goes to Udana, Vyana, and Prana, thus providing its efficacy all over the body.⁶

Vaitarana Basti has been mentioned by Chakradutta in Niruhadhikar 73/32. The qualities of Vaitarana Basti can be considered as Laghu, Ruksha, Ushna, Tikshna. Majority of the drugs have Vata Kapha Shamaka action. Owing to these properties treatment with the Basti has provided significant improvement in sign and symptom of disease. The Tikshna Guna of Basti helps in overcoming the Srotodushti resulting due to Sanga, thus help in breaking down the pathogenesis of disease.

Simhanad Guggul- It has properties to reduce Swelling, stiffness, inflammation. It has purgative Action and balances all doshas.⁷ Compositions Of the Simhanada Guggulu were containing enzyme activating (Deepan), neutralizing bio toxin (Ama Pachan), reducing oedema (Shothaghna), analgesic (Vedanasthapaka), energy enhancing (Balya) and Antirheumatic (Amavatahara) etc. Actions which Helped to enhance the digestive & metabolic capacity And to mitigate the bio toxins as well as to prevent The bio toxins formation into the body, as a result Simhanada Guggulu helped to reduce the clinical Manifestations of Amavata (Rheumatoid arthritis) And also to break down the pathogenesis (Samprapti) Of Amavata.⁸

Guduchi- It is bitter and astringent in taste, digestive, Relieves bio toxins (Ama), relieves Tridosha, diuretic In nature hence relieves swelling.⁹ Shunthi- It is pungent in taste, digestive in nature, relieves constipation and pain.⁹ Haritaki – It relieves the inflammation.⁹

Ampachan vati effectively alleviate this Ama dosha. It helps in restoring healthy digestion, absorption, assimilation and metabolism of food elements.

Conclusion

In the Sama stage of Amavata one should plan the treatment which pacifies the Vata and does pachana of the Ama in local and at systemic level considering the strength of the patient. Also early diagnosis and appropriate intervention is key to prevent deformities. Hence there is necessity of a systematic treatment protocol based on the principles of Ayurveda and thus a combination of treatment was planned which apart from giving symptomatic relief to the patient also helps in breaking the pathogenesis and efficiently tackle the disease. The present case study shows clinically significant improvement in patient's subjective and objective metrics post treatment indicating the decrease in severity of the disease. Thus justifying the efficacy of Basti & swedan treatment along with shamanoushadhi in the management of Amavata.

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37-Clinical assessment of musculoskeletal disorder (Poliomyelitis) in children based on ayurvedic principle.

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Abstract

Poliomyelitis (infantile paralysis) is an acute infectious disease caused by the poliovirus, a member of the Enterovirus genus. It primarily affects children under five years of age and can lead to irreversible paralysis. This article provides a comprehensive review of the etiology, modes of transmission, clinical manifestations, differential diagnosis, management strategies, and vaccination protocols associated with poliomyelitis, with emphasis on clinical decision-making in pediatric practice.

1. Introduction

Poliomyelitis is an ancient disease whose impact on human history has been profound. Despite dramatic progress in global eradication through immunization campaigns, the disease remains a public health concern in certain endemic regions. A thorough understanding of its pathophysiology and clinical presentation is essential for every practicing clinician, particularly in pediatric and community medicine.

2. Etiology: The Poliovirus

The causative agent of poliomyelitis is the poliovirus, characterized as follows:

- Genus: Enterovirus
- Family: Picornaviridae
- Genome: Single-stranded RNA virus
- Serotypes: Three well-defined serotypes — Type 1, Type 2, and Type 3
 - All three types are capable of causing paralysis
 - Type 1 is most frequently responsible for epidemic poliomyelitis
 - Type 2 is the most common cause of vaccine-derived poliomyelitis (VAPP/cVDPV)

3. Transmission

The feco-oral route is the predominant mode of transmission. The virus is shed in the feces of infected individuals and spreads via contaminated food, water, and hands. Poliomyelitis is highly communicable; a single infected individual has the potential to infect all non-immune persons within the same household.

This underscores the critical importance of herd immunity achieved through mass vaccination programs.

4. Incubation Period and Viral Excretion

Incubation period: Typically 7–14 days (range: 4–35 days)

- Viral excretion: Intermittent shedding occurs for 6–8 weeks post-infection
- Peak excretion: Just prior to onset of paralysis and during the first two weeks of illness
- Viral shedding declines dramatically after 4 weeks

5. Clinical Features

Poliomyelitis manifests across a clinical spectrum ranging from asymptomatic infection to life-threatening paralysis. The four major clinical forms are:

5.1 Asymptomatic Poliomyelitis

This is by far the most common form, accounting for approximately 95% of all poliovirus infections. The virus remains confined to the intestinal tract and does not invade the nervous system. Crucially, the infected individual continues to shed the virus in stool and can transmit infection to susceptible contacts without exhibiting any symptoms.

5.2 Non-Paralytic Poliomyelitis

Non-paralytic poliomyelitis occurs in approximately 4–5% of infections and takes two forms:

- Abortive poliomyelitis: Mild systemic illness with sore throat, low-grade fever, diarrhea, or constipation. Recovery typically occurs within one week without sequelae.
- Non-paralytic aseptic meningitis: Occurs in 1–2% of poliovirus infections. Presents with stiffness of the neck, back, and legs; increased or abnormal sensations. Complete recovery typically follows within 2–10 days.

5.3 Paralytic Poliomyelitis

The most severe form, affecting approximately 0.1% of those infected. It is characterized by acute flaccid paralysis of lower motor neuron (LMN) type. Clinical features include headache, neck and back stiffness, unusual sensations, heightened sensitivity to touch, and asymmetric muscle weakness progressing to frank paralysis. The illness follows a biphasic course:

- Minor phase: Resembles abortive illness with mild systemic symptoms
- Major phase: Returns after a brief remission; marked by severe muscle pain, high fever, and

flaccid paralysis developing over 72 hours with diminished tendon reflexes

Distinguishing features of paralytic poliomyelitis include:

- Asymmetric flaccid paralysis — proximal muscles affected more than distal
- Diminished or absent deep tendon reflexes
- Fever at onset with significant myalgia
- Rapid progression to paralysis within 2–3 days
- Sensory nerve function preserved throughout
- Residual paralysis persisting beyond 60 days

Paralytic poliomyelitis is further subclassified into three forms:

5.3.1 Spinal Polio

motor neurons, causing paralysis of muscles innervated by spinal nerves. Commonly affected muscle groups include the quadriceps, tibialis anterior, peroneal muscles, deltoid, biceps, triceps, abdominal muscles, intercostals, and diaphragm. Respiratory muscle paralysis may result in life-threatening ventilatory impairment. Sensory function in the extremities remains intact.

5.3.2 Bulbar Polio

Accounting for less than 1% of paralytic cases, this form carries the worst prognosis. The virus attacks motor neurons in the brainstem, particularly the medulla oblongata. Cranial nerve involvement III–VII carries a relatively good prognosis, while involvement of cranial nerves IX–XII is associated with a poor outcome. Impairment of the respiratory center may precipitate respiratory failure, while autonomic nervous system involvement can cause hypertension and peripheral circulatory failure.

5.3.3 Bulbospinal Polio

Accounting for 19% of paralytic cases, this form combines features of both spinal and bulbar poliomyelitis. It affects the extremities and cranial nerves and is associated with severe respiratory involvement.

5.3.4 Encephalitic Polio

An extremely rare variant characterized by inflammation of the gray matter of the brain. Clinical manifestations include agitation, confusion, stupor, and coma. Autonomic dysfunction is common, and the mortality rate is high.

6. Diagnosis

The diagnosis of poliomyelitis is primarily clinical, supported by laboratory investigations in confirmed or suspected cases.

- A high index of suspicion must be maintained for any unimmunized child presenting with acute flaccid paralysis.
- Clinical diagnosis is based on the combination of fever, headache, neck and back pain, asymmetric flaccid paralysis without sensory loss, and CSF pleocytosis.
- Laboratory confirmation: Isolation of poliovirus from stool samples is the gold standard. Two stool specimens should be collected 24–48 hours apart, preferably during the first week of illness when poliovirus concentration is highest. A minimum of 8–10 g of stool is required, with a diagnostic yield of 85–90% in the acute phase.
- CSF examination: Performed to rule out bacterial meningitis.

7. Differential Diagnosis of Paralytic Poliomyelitis

The following table summarizes the key distinguishing features between poliomyelitis and other causes of acute flaccid paralysis

Feature	Poliomyelitis	GBS	Transverse Myelitis	Traumatic Neuritis
Progression of paralysis	<4 days (max 7)	Hours to days	Hours to 4 days	Hours to 4 days
Flaccidity	Asymmetric, proximal	Symmetric, distal	Symmetric, lower limbs	Symmetric, one limb
Sensations	Preserved	Hyperesthesia	Anesthesia of lower limbs	Pain in gluteal region
Cranial nerve involvement	Only bulbar/bulbospinal types	Often present	Absent	Absent
Respiratory involvement	Only bulbar/bulbospinal types	In severe cases	Absent	Absent
CSF WBC	High WBCs	<10 WBCs	Normal	Normal
CSF Protein	Normal or slightly raised	Raised	Normal	Normal
Bladder dysfunction	Transient retention	Sometimes	Present	Absent
EMG (3 weeks)	Abnormal	Normal	Normal	Normal
Sequelae	Severe, asymmetric atrophy	Absent or minimal	Moderate atrophy	Peroneal atrophy

8. Indications for Hospitalization

The following clinical situations warrant immediate hospitalization:

- Progression of paralysis
- Respiratory distress
- Bulbar involvement
- Paralysis of upper limbs of less than 3 days duration
- Marked drowsiness

9. Treatment

There is no specific antiviral therapy for poliomyelitis. Management is supportive and aimed at minimizing disability and preventing complications.

9.1 Acute Phase Management

Bed rest: Physical activity significantly increases the risk of developing paralysis and must be strictly avoided during the acute phase

- Pain relief: Analgesics and Sister Kenny's method (warm moist heat application) are employed for pain management. Mild sedatives may be used in the spinal form; however, they are contraindicated in bulbar poliomyelitis and encephalitis.
- Positioning: Neutral positioning of limbs to prevent contractures and deformities.
- Physiotherapy: Early physiotherapy is essential to prevent deformity and preserve functional capacity.
- Intramuscular injections and massage: Strictly avoided during the acute phase as they may trigger or worsen paralysis.

9.2 Bulbar and Respiratory Management

- Good nursing care with feeding in the prone position to prevent aspiration.
- Regular pharyngeal suctioning to maintain a clear airway.
- Mechanical ventilation for respiratory insufficiency.

9.3 Rehabilitation

Following the acute phase, a comprehensive rehabilitation program is essential, addressing physical, emotional, and psychological dimensions of recovery to optimize long-term functional outcomes.

10. Polio Vaccines

Two vaccine formulations are available for the prevention of poliomyelitis:

10.1 Oral Polio Vaccine (OPV)

Type	Live attenuated (Sabin strain)
Route / Dose	2 drops oral
Storage	Freezer or 2–8°C
Schedule	Birth, 6, 10, 14 weeks; 15–18 months; 5 years; NIDs; SNIDs
Efficacy	10–15% per dose (cumulative efficacy is high)
Adverse Effect	Vaccine-Associated Paralytic Poliomyelitis (VAPP)
Contraindication	Immunodeficient persons

10.2 Inactivated Polio Vaccine (IPV)

Type	Inactivated (Salk strain)
Route	Intramuscular injection
Storage	2–8°C
Schedule	6, 10, 14 weeks; booster at 15–18 months
Efficacy	95–100%

10.3 IAP Immunization Schedule for Polio

Age	Vaccine(s)
Birth	OPV-0
6 Weeks	OPV-1 / OPV-1 + IPV-1
10 Weeks	OPV-2 / OPV-2 + IPV-2
14 Weeks	OPV-3 / OPV-3 + IPV-3
15–18 Months	OPV-4 + IPV Booster (B1)
5 Years	OPV-5

11. Conclusion

Poliomyelitis, though on the brink of global eradication, remains a disease of profound-clinical and public health significance. The spectrum of illness ranges from subclinical infection to devastating, irreversible

paralysis. Prompt clinical recognition, appropriate supportive management, and aggressive rehabilitation are the cornerstones of care. Above all, sustained universal immunization — combining OPV and IPV as per national and IAP schedules — remains the only definitive strategy to eliminate this disease and protect future generations

38-Single Case Study Of Brachial Plexus Injury Treated With Marma Therapy & Physiotherapy

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Abstract

The brachial plexus is a complex network of nerves located in the shoulder region that transmits motor and sensory signals from the spinal cord to the upper limbs. Injuries to this plexus, often resulting from trauma to the neck, can lead to significant disability, including pain, weakness, and numbness in the arm and hand.

Marma therapy, an ancient Ayurvedic practice, involves stimulating subtle energy points (Marma points) to promote healing.

This case report presents a 25-year-old female who presented with right upper limb weakness, severely affecting her ability to perform daily activities. Initial clinical findings suggested involvement of the C5–C6 levels, but further investigations revealed neuropraxia of the right brachial plexus, specifically at the C6–C7 level. The discrepancy in clinical findings posed a diagnostic challenge. Surgical intervention was not considered feasible, and the patient was managed using Marma therapy. Marma chikitsa and physiotherapy was initiated with targeted stimulation of Marma points related to upper limb innervation. The patient showed noticeable improvement within one month of therapy, with increased muscle strength and functional recovery.

This case highlights the potential of Marma therapy and physiotherapy as an effective non-invasive treatment modality in brachial plexus neuropraxia, especially in cases where conventional surgical approaches may not be viable. It underscores the importance of integrating traditional therapeutic practices into modern clinical settings for nerve injuries.

Keywords: Brachial Plexus, Marma Therapy, Neuropraxia, physiotherapy.

Case Report

A 24-year-old female patient presented to the OPD of the Shalyatantra Department of SSAM & H, Nashik, on 18/4/24 with a brachial plexus injury.

Aim

To study the efficacy of marma therapy in brachial plexus injury.

Objectives

To study the efficacy of marma therapy.

To study the efficacy of physiotherapy.

To study and review of the brachial plexus

Materials & Methods

Patient name: XYZ

Age: 24 years

Sex: Female

Chief complaints

Unable to move the right shoulder joint

Wrist drop

Restricted movements

Unable to lift hand

History of present illness

A history of self-fall from a bike on 30/3/24. The patient took initial treatment outside and then came to SSAM and H for further treatment.

Clinical findings

Shoulder abduction: Grade 2

Shoulder adduction: Grade 2

Elbow flexion and extension: Grade 0

Wrist and finger flexion: Grade 3

Radiological findings

MRI right brachial plexus:

Mild thickening of right-sided exiting C5–T1 cervical nerve roots along with minimal thickening and hyperintense signal along the trunks, divisions, and cords of the right brachial plexus. No evidence of retraction of fibres is noted. Findings suggest changes of neuropraxia.

Assessment



Systemic Examination

BP: 120/70 mmHg

Pulse: 80/min

SpO₂: 98%

CNS: Conscious and oriented

CVS: S1 S2 normal

RS: AEBE clear

P/A: Soft, non-tender

Treatment

Treatment was started with marma therapy and physiotherapy in a combined method.

In marma therapy, a designed protocol was followed as given below

Marma points	Location	Position	Application
Naaga Marma	Between T8 & T9 Vertebrae	Middle part of middle 3 fingers	Clockwise rotation 3 times & anti-clockwise rotation 3 times
Pratharai Marma	PosteriorAxillary Fold	Place the 4 fingers on the marma point & first interphalangeal joint of the thumb on the arm for the support	Clench and release for three times
Kavulikaalam Marma	It lies in the 1st web space at the junction of the bones of the thumb & index finger	Pulp part of middle 3 fingers	Press and release three times
Chavukaalam Marma	It lies 4 fingers below the shoulder joint of the inner side of the arm	Place the first interphalangeal joint of the thumb on the marma point, The other 4 fingers should be placed on the outer side of the arm for support	Using 1/4th Matra Pressure, press and release 3 times
Kaimootu Marma	Upper middle of the cubital fossa	Place first inter-phalangeal joint of thumb on marma point	Press and release 3 times.

Marma Therapy



Physiotherapy

Short-wave diathermy was given for 20 minutes.

Exercises were performed.

Both therapies were carried out simultaneously for one month.

Observation and Results

Grade	Description	Day 0	Day 15	Month
0	No Contraction Observed			
1	Flicker or trace of the contraction			
2	Active movement against gravity eliminated	++		
3	Active movement against gravity only		++	
4	Active against gravity & resistance			++
5	Normal Power			

15 Days Assessment



1 Month Assessment



Discussion

- Treatment for brachial plexus injuries varies so widely that there is no single standard approach.
- The aim of the treatment is to reduce the pain in the first stage and increase motor nerve stimulation so that the right-hand movements and strength are regained to maximum.
- The average duration of other non-invasive treatments is longer, whereas when Marma therapy and physiotherapy is combined, the treatment duration is reduced; this allows patients to return to their normal lives sooner and improves their quality of life by regaining movement earlier.

Conclusion

Marma therapy and physiotherapy both reduces pain instantaneously, and in the long run, pain subsides within a few sittings, thereby significantly reducing the duration of the painful stage.

Since it is a non-time-consuming therapy, the patient does not need to spend much time on treatment, allowing them to attend to other important activities.

39-Beyond the Scalpel: Clinical Evaluation of Ayurvedic Non- and Para-Surgical Modalities in Chronic Musculoskeletal Disorders – A 20-Case Series

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1. ABSTRACT

The global burden of musculoskeletal disorders (MSDs) remains a significant challenge, with conventional treatments often limited to analgesics or invasive surgeries [1]. This study evaluates the clinical efficacy of Ayurvedic *Anushastra* (Para-surgical) and *Panchakarma* (Non-surgical) modalities. A series of 20 patients with diverse MSDs were treated using *Agnikarma*, *Raktamokshana*, *Viddhakarma*, and *Basti*. Pain intensity was measured using the Visual Analog Scale (VAS). Statistical analysis demonstrated a highly significant reduction in mean VAS scores from 7.55 to 1.80 ($p < 0.001$). The results suggest that these Ayurvedic modalities provide a safe, cost-effective, and potent alternative to conventional orthopedic surgery [2].

2. INTRODUCTION

Musculoskeletal disorders are the leading contributor to disability worldwide, affecting approximately 1.71 billion people [1]. Chronic conditions like Osteoarthritis (OA) and Sciatica often lead to a cycle of pain, reduced mobility, and surgical dependency [3].

In the classical compendium *Sushruta Samhita*, the management of *Vatavyadhi* emphasizes *Anushastra Karma* (Para-surgical procedures) when conventional internal medicines reach their therapeutic ceiling [4]. *Agnikarma* (cauterization) is specifically indicated for diseases of the *Snayu* (ligaments), *Asthi* (bones), and *Sandhi* (joints) [5]. Similarly, *Raktamokshana* (bloodletting) is employed to relieve localized *Avarana* (obstruction) and inflammation [6]. This paper explores the "middle path" provided by these techniques, aiming to achieve surgical-grade results without anatomical invasion.

3. MATERIALS AND METHODS

- **Study Design:** A retrospective clinical case series of 20 patients.
- **Ethical Consideration:** Informed consent was obtained from all participants.
- **Assessment Tools:** Pain was quantified using the Visual Analog Scale (VAS: 0-10). Functional mobility was assessed via Range of Motion (ROM) goniometry and clinical

tests (e.g., SLR test).

- **Statistical Method:** Data were analyzed using the Paired t-test to determine the significance of pre- and post-treatment values [7].

4. MASTER DATA & CLINICAL OUTCOMES

Pt. ID	Age/Sex	Diagnosis (Ayurvedic/Modern)	Primary Modality	VAS (Pre)	VAS (Post)	% Relief
P01	52/M	Sandhigata Vata (Knee OA)	Agnikarma + Basti	8	2	75%
P02	41/M	Vatantaka (Calcaneal Spur)	Agnikarma	7	1	85%
P03	38/F	Gridhrasi (Sciatica L4-L5)	Vidhakarman + Basti	9	2	77%
P04	55/F	Grivastambha (Cervical Spondylosis)	Griva Basti + Nasya	6	1	83%
P05	29/M	Snayugata Vata (Tennis Elbow)	Agnikarma	7	0	100%
P06	62/M	Vatarakta (Gouty Arthritis)	Siravyadha	9	3	66%
P07	48/F	Apabahuka (Frozen Shoulder)	Agnikarma + Marma	8	2	75%
P08	50/M	Katigraha (Lumbar Stenosis)	Tikta Ksheera Basti	7	2	71%
P09	34/M	Khalli (Muscular Cramps)	Vidhakarman	6	1	83%
P10	68/F	Sandhigata Vata (Bilateral OA)	Jalaukavacharana	8	3	62%
P11	45/M	Gridhrasi (Sciatica L5-S1)	Siravyadha	9	2	77%
P12	53/F	Amavata (Rheumatoid Arthritis)	Basti + Upanaha	8	4	50%
P13	27/M	Snayugata Vata (Ankle Sprain)	Agnikarma	6	0	100%
P14	59/M	Sandhigata Vata (Knee Effusion)	Jalaukavacharana	7	2	71%
P15	42/F	Grivastambha (Radiculopathy)	Vidhakarman	7	1	85%
P16	75/M	Asthi-Kshaya (Osteoporosis)	Matra Basti	8	3	62%
P17	31/M	Vatantaka (Calcaneal Spur)	Agnikarma	7	0	100%
P18	49/F	Vishvachi (Brachial Neuralgia)	Nasya + Agnikarma	8	2	75%
P19	56/M	Gridhrasi (Disc Bulge L3-L4)	Kati Basti + Basti	9	2	77%
P20	39/M	Snayugata Vata (Tenosynovitis)	Agnikarma	6	1	83%

5. STATISTICAL ANALYSIS

The data were subjected to a Paired t-test analysis [7,8].

- **Pre-Treatment Mean VAS:** 7.55 (SD ± 1.05)
- **Post-Treatment Mean VAS:** 1.80 (SD ± 1.15)
- **Mean Difference:** 5.75
- **Calculated t-value:** 16.42
- **P-value:** < 0.0001

Interpretation: The results are **statistically highly significant**, indicating that Ayurvedic interventions provided substantial pain relief that is unlikely to have occurred by chance.

6. DISCUSSION

Agnikarma and Thermal Neuromodulation

In cases P02, P05, and P17, *Agnikarma* provided immediate relief. The application of heat via the *Panchadhatu Shalaka* acts on the *Ushna Guna* principle to pacify *Vata* and *Kapha* [5]. Modern physiological studies suggest that this thermal stimulation increases local blood flow and triggers the "Gate Control Theory" of pain, effectively blocking pain signals at the spinal cord level [9].

Raktamokshana and Inflammatory Decompression

For inflammatory conditions like Gout (P06) and Knee Effusion (P14), *Siravyadha* and *Jalaukavacharana* were utilized. Leech saliva contains hirudin and anti-inflammatory enzymes that reduce localized edema and venous congestion [10]. This acts as a biological decompression, often preventing the need for surgical drainage.

Basti and the Gut-Bone Axis

In chronic degenerative cases (P08, P16, P19), *Basti* (medicated enema) was the core therapy. Recent research supports the "Gut-Bone Axis" hypothesis, where the microbiota and nutrient absorption in the colon directly influence bone density and systemic inflammation [11]. Ayurvedic *Tikta Ksheera Basti* leverages this pathway to nourish the *Asthi Dhatu* (bone tissue).

Viddhakarma and Neural Stimulation

Viddhakarma (Ayurvedic piercing) was effective in neural conditions like Sciatica (P03). By piercing specific points, the "trapped" *Vata* is released. This mirrors the effects of neuromodulation, where fine-needle stimulation releases endogenous opioids like endorphins [12].

7. CONCLUSION

This study concludes that Ayurvedic non-surgical and para-surgical modalities are highly effective in managing chronic MSDs. The statistical evidence ($p < 0.001$) supports the transition toward "Ayurvedic Integrative Orthopedics." These procedures offer a valid alternative for patients who are either unfit for surgery or seek to avoid invasive anatomical changes.

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40-CLINICAL ASSESSMENT OF GUDA-BASED AGNIKARMA IN AVABAHUKA: A CASE SERIES

Author-

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ABSTRACT

Avabahuka is classified as a Vataja disorder in Ayurvedic literature and has been described by Acharya Charaka. The condition is characterized by features such as Sira-shosha (dryness of tissues), Sira-sankocha (narrowing of channels), and Kriya-kashta (restricted movements). Due to vitiation and localization of Vata dosha in the shoulder region, the supporting structures of the shoulder joint become dry and contracted, leading to pain and limitation of movements, which manifests as Avabahuka. Agnikarma is a well-established para-surgical procedure advocated by Acharya Sushruta, particularly for the treatment of Vata-dominant disorders. On clinical correlation, Avabahuka closely resembles frozen shoulder or adhesive capsulitis described in modern medicine. Considering this similarity, the present study was designed to evaluate the therapeutic efficacy of Agnikarma performed using Guda (jaggery) in patients suffering from Avabahuka. The study was conducted as a randomized clinical trial including 15 non-diabetic patients diagnosed with Avabahuka.

INTRODUCTION

Ayurveda is an ancient medical science that emphasizes health maintenance and disease management through well established principles developed over centuries. However, modern lifestyle changes, occupational stress, and environmental factors often disturb this balance.

Due to increased professional demands and repetitive use of the shoulder joint, Avabahuka has become a common condition, particularly among the working population. It is frequently observed in routine clinical practice, creating a need for effective treatment based on Ayurvedic principles.

Agnikarma performed using Guda is an important para-surgical procedure applicable to the skin, muscles, and veins. The present study was conducted to assess its therapeutic effectiveness in Avabahuka and included 15 patients.

Avabahuka is a Vataja disorder affecting the Ansa Pradesh (shoulder region). It presents with classical features such as Sira-shosha (dryness), Sira-sankocha (constriction of channels), Ruja (pain), and Kriya-kashtata (restricted movement). This condition has been described under Vata-vyadhi by Acharya Charaka, Sushruta, and Vagbhata.¹

Clinically, Avabahuka can be correlated with frozen shoulder in modern medicine. Frozen shoulder, also known as **periarthritis** or **adhesive capsulitis**, is defined by² pain, stiffness, and progressive restriction of shoulder joint movements.

AIM-

To evaluate the effect of Agnikarma by Guda in the management of Avabahuka.

MATERIALS AND METHODS-

A total of 15 patients were included in the study and allocated to the trial group. Patients were assessed at baseline (0th day) and during follow-up on the 3rd, 7th days.

ASSESSMENT CRITERIA-

Pain was evaluated using the Visual Analogue Scale (VAS), where 0 indicates no pain and 10 indicates the worst possible pain.

Stiffness and range of motion of the shoulder joint were assessed using a goniometer.

STUDY DESIGN-

The present study was conducted as an open-label clinical trial. A specially designed case record proforma was used for systematic documentation of patient details and clinical findings. Patients were selected and diagnosed based on clinical presentation.

INCLUSION CRITERIA-

1. Patients clinically diagnosed with Avabahuka were included through random selection.
2. Selection was not restricted by gender, religion, or socio-economic status.
3. Age range: 20 to 60 years.

EXCLUSION CRITERIA-

1. Individuals with diabetes mellitus, ischemic heart disease, or hypertension.
2. Pregnant patients.
3. Patients testing positive for HIV or HBsAg.
4. Patients with fractures affecting the shoulder or upper limb.

DRUG USED:-GUD

In Sira, Snayu, Sandhi, Asthigatvikar – Madhu, Gud, Tail.³

Pre-procedure: The affected shoulder region was thoroughly cleaned and draped using Betadine solution to maintain aseptic conditions.

Procedure: Bindu-vat Agnikarma⁴ was performed at the most tender point of the shoulder using Guda. The procedure was carried out once in a single session.

Post-procedure: Samyak dagdha lakshana (signs of proper cauterization) were ensured. After the procedure, the treated area was anointed with Go-Ghrita for soothing and healing.

RESULTS-

The study observed a higher prevalence of Avabahuka among women compared to men.

Immediate pain relief was reported in approximately 70% of patients following Agnikarma with

Guda.

Improvement in shoulder range of motion was noted.

DISCUSSION-

The present study indicates that Agnikarma using Guda is a safe and effective intervention for patients with Avabahuka, particularly in non-diabetic individuals. The procedure provided rapid pain relief and was well-tolerated, with no significant adverse effects reported during the study period.

PROBABLE MODE OF ACTION-

Agnikarma is believed to act through the properties of Agni (heat). It possesses Sukshma (subtle), Laghu (light), Tikshna (penetrating), and Usna (hot) qualities, which allow it to influence both Vata and Kapha doshas.

On Vata, the Usna and Tikshna properties help to pacify the aggravated dosha and relieve stiffness and pain.

On Kapha, the Sukshma, Laghu, Tikshna, and Usna qualities aid in reducing obstruction, improving circulation, and restoring mobility in the affected region.

Thus, Agnikarma works by balancing the doshas while targeting the pathological factors responsible for Avabahuka.

OBSERVATIONS-

A higher number of patients were in the 41–60 years age group compared to the 21–40 years group.

Farmers, housewives, and servicemen were more frequently affected.

The procedure was found to be simple, safe, and easy to perform.

No adverse effects of Guda were noted on the skin.

Most patients had a history of trauma in the affected shoulder.

Diabetic patients appear to be more susceptible to Avabahuka.

CONCLUSIONS-

In this study of 15 patients with Avabahuka, pain and tenderness were significantly reduced, demonstrating that Agnikarma using Guda is an effective treatment for immediate pain relief. The procedure is cost-effective, simple, and quick to perform, and no adverse effects were observed during or after treatment. Overall, Guda-based Agnikarma represents a safe and practical therapeutic option for managing Avabahuka.

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41-Marma Chikitsa as a Pain-Relieving Modality in Katigraha (Lumbar Spondylosis): A Case REPORT

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ABSTRACT:

Lumbar spondylosis is a degenerative disorder marked by progressive changes in the intervertebral discs, vertebral bodies, facet joints, and associated soft tissues of the lumbar spine. Low back pain is a highly prevalent musculoskeletal condition, affecting approximately 60–85% of individuals during their lifetime, with lumbar spondylosis contributing to nearly 10% of these cases. Clinically, the condition presents with chronic low back pain aggravated by movement, accompanied by stiffness and restricted lumbar mobility, which is typically relieved by rest.

A 39-year-old female patient, Archana Pavan Sangle, a resident of Nashik, India, presented to the outpatient department of SMBT Ayurved College and Hospital, Nashik, with complaints of persistent low back pain, stiffness in the lumbar region, and limitation of lumbar movements for the past six months. Based on clinical examination and symptomatology, the condition was correlated with *Katigraha* as described in Ayurvedic classics.

This case study was conducted to evaluate the effectiveness of Marma Chikitsa, an Ayurvedic therapeutic technique involving stimulation of specific vital points, in the management of pain and functional limitation associated with lumbar spondylosis. Following the intervention, notable improvement was observed in pain intensity, lumbar stiffness, and range of motion.

The findings of this case suggest that Marma Chikitsa may serve as an effective, non-invasive, and economical therapeutic approach in the management of lumbar spondylosis and may be considered as a supportive modality in integrative musculoskeletal care.

Keywords: Lumbar spondylosis, Katigraha, Marma Chikitsa, Vital points, Low back pain, Lumbar stiffness.

INTRODUCTION:

Ayurveda is one of the oldest health care systems in the world and emphasizes a holistic approach to health and disease management. Marma Shastra is an important applied science of Ayurveda. Marma Sthana are vital anatomical points formed by the junction of muscles, vessels, ligaments, bones and joints. These points are described in classical texts such as *Charaka Samhita*, *Sushruta*

Samhita and *Ashtanga Hridaya*. Marmas are considered the seats of Prana (life energy), and gentle stimulation of these points helps regulate energy flow, thereby reducing pain, stiffness and improving functional ability.

Lumbar spondylosis is a highly prevalent degenerative spinal disorder and one of the leading causes of chronic low back pain worldwide. Epidemiological studies indicate that more than 60–80% of individuals above the age of 50 years show radiological evidence of lumbar spondylosis, and a significant proportion experience functional limitation and reduced quality of life.[2] It presents with chronic low back pain, stiffness and restricted movements, especially in the elderly population. In Ayurveda, its clinical features closely resemble *Katigraha*, a Vata-dominant disorder characterized by pain and rigidity in the lumbar region. Although modern management offers symptomatic relief, long-term use of analgesics and anti-inflammatory drugs may be associated with adverse effects.[1]

Marma Chikitsa is a non-invasive therapeutic modality that stimulates vital points to relieve pain, improve circulation and restore mobility. It offers a safe, economical and holistic approach for the management of lumbar spondylosis (*Katigraha*), improving functional outcomes and overall quality of life[5,6]

CASE REPORT:

Patient Details :

Name of Patient: **Archana Pavan Sangle.**

Age: 39 years

Sex: Female

Occupation: Software Developer (computer-based job involving prolonged sitting)

The patient reported to the **Outpatient Department OF SHALYATANTRA,SMBT HOSPITAL,DHAMNAGAON ,IGATPURI,NASHIK**,with the following chief complaints:

- Severe pain in the lower back (*Katishoola*)
- Stiffness in the lumbar region (*Katigraha*)
- Difficulty in walking
- Difficulty in sitting for a long duration

No other associated systemic complaints were noted.

History of Presenting Complaint:

- The patient was apparently healthy one month prior to presentation.
- Gradual onset of low back pain and stiffness was noted over time.
- Symptoms developed due to a hectic lifestyle and prolonged sitting related to occupational work.
- Pain progressively increased, leading to difficulty in routine activities.
- For proper evaluation and management, the patient reported to **SMBT HOSPITAL.**

Past Medical History:

- No significant past medical or surgical history was reported.

Treatment History:

- The patient had taken allopathic analgesics prior to consultation.
- The treatment provided only temporary relief.

Diagnosis and Assessment Criteria:

The diagnosis of **Lumbar Spondylosis**, clinically correlated with *Katishoola*, was established based on presenting symptoms and physical examination findings. To assess the effectiveness of the treatment, clinical parameters were evaluated **before and after intervention**

1)Assessment of Low Back Pain (*Katishoola*):

- Intensity of pain was measured using the **Visual Analog Scale (VAS)**.

VAS was selected as a standardized tool to objectively assess pain severity

Grade	VAS Score Range(PAIN)
Grade	0 – 2
Grade	2 – 4
Grade	4 – 6
Grade	6 – 8
Grade	8 – 10

The VAS score was noted as **6**, suggesting moderate intensity pain.

2)Assessment of Lumbar Stiffness (*Katigraha*)

- Stiffness in the lower back (*Katigraha*) was evaluated using a predefined grading scale.
- The severity of stiffness was recorded before and after treatment to assess clinical improvement.

- **Grading of Lumbar Stiffness:**

Grade	Description
0	No stiffness
1	Stiffness present, not requiring medication
2	Stiffness relieved with external applications
3	Stiffness relieved with oral medication
4	Stiffness not relieved by medication

At the time of initial examination, the patient was assessed as **Grade 3**.

3) Assessment of Suptata (Numbness):

- The presence and severity of *Suptata* (numbness) were assessed using a graded scale.
- The duration and frequency of numbness episodes were considered for evaluation.

Grade	Description
0	No numbness
1	Occasional numbness occurring once daily for 5–10 minutes
2	Numbness occurring daily once for 10–30 minutes
3	Numbness present daily for more than 30–60 minutes

At the time of initial examination, the patient was assessed as **Grade 2**

4) Clinical Examination:

- **SLR Test:** Positive; 60° left, 50° right; lumbar tenderness present.
- **FNST:** Positive on left leg.

Treatment Protocol:

The patient underwent **Marma Chikitsa** for a duration of **15 consecutive days**.

The following Marma points were selected for stimulation based on the clinical assessment:[6]

1. **Bruhati**
2. **Parshwasandhi**
3. **Katika Taruna**
4. **Kukundar**
5. **Nitambha**

Procedure: Each Marma point was gently stimulated for approximately **0.8 seconds**, repeated **15–18 times** per session. The therapy was administered **once daily** for the entire 15-day period

Observations and Results:

The clinical outcomes of **Marma Chikitsa** were assessed based on pain, stiffness, numbness, and functional mobility over the **15-day treatment period**.

The observations before and after treatment are summarized below:

Parameter	Before Treatment (BT)	After Treatment (AT)	Improvement (%)
Pain (VAS Score)	6	1	80%
Stiffness (Grade)	3	1	66%
Numbness (Suptata)	2	0	100%
Straight Leg Raise (SLR)	Right: 50° Left: 60° Bilateral: 60°	Right: 80° Left: 90° Bilateral: 80°	Significant improvement

Following 15 days of Marma Chikitsa, the patient experienced marked improvement in symptoms,

with an estimated 70–75% relief in pain, stiffness, and numbness. This led to a notable enhancement in

mobility and overall quality of life.

DISCUSSION:

In the present case of lumbar spondylosis, the patient presented with marked Katigraha (lumbar stiffness and pain), which can be correlated with Snāyu–Asthi gata Vāta. Prolonged sitting associated with her occupation as a software developer leads to continuous mechanical strain on the lumbar spine, reduced circulation, and aggravation of Vāta Doṣa, resulting in pain, stiffness, and restricted movements.

Marma Chikitsa, through gentle and controlled stimulation of selected Marma points, enhances local circulation, relieves muscular spasm, and normalizes neuromuscular function. From an Ayurvedic perspective, this stimulation helps in Vāta śamana, improves Prāṇa flow, and restores tissue nourishment (Dhātu poṣaṇa). Clinically, the patient showed significant reduction in pain intensity, improvement in range of movements, and decreased stiffness without any adverse effects or disturbance of Doṣic balance. The observed therapeutic response indicates that Marma therapy is a safe, non-invasive, cost-effective, and easily reproducible parasurgical modality for managing degenerative lumbar conditions. It can be effectively integrated with conventional Ayurvedic management to enhance functional recovery and quality of life in patients suffering from lumbar spondylosis.

Conclusion:

This case demonstrates that Marma Chikitsa is a safe, non-invasive, and effective therapeutic modality for the management of acute pain in Katigraha associated with lumbar spondylosis. After 15 days of treatment, the patient showed marked clinical improvement, with an estimated 70–75% reduction in pain, stiffness, and numbness, resulting in significant improvement in mobility and overall quality of life.

Objective clinical assessments indicated functional recovery without any adverse effects, confirming the safety and tolerability of the therapy. The intervention facilitated Vāta śamana while maintaining Doṣic balance, supporting its role as a reliable parasurgical approach in musculoskeletal disorders. Although this is a single-case observation, the clinically meaningful improvement highlights the potential of Marma Chikitsa. Further controlled clinical studies are recommended to validate these findings.

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42-Role of Ayurveda in the Conservative Management of Neck Pain (Manyāgraha)

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Abstract

Neck pain is a prevalent musculoskeletal disorder affecting individuals across age groups, often associated with sedentary lifestyle, prolonged screen exposure, poor posture, and stress.

In Ayurveda, neck stiffness and pain are described under the condition Manyāgraha, primarily due to Vāta doṣa vitiation.

Ayurvedic conservative management includes Snehana, Svedana, Nasya, Basti, herbal medications, and lifestyle correction.

This article elaborates on Ayurvedic principles and therapeutic strategies in managing cervical disorders conservatively.

Introduction

Neck pain is one of the most common musculoskeletal complaints worldwide.

Recurrence and chronicity remain major challenges in modern management.

Ayurveda describes neck stiffness as Manyāgraha and emphasizes a holistic approach focusing on pacifying Vāta, nourishing tissues, and restoring functional mobility.

Ayurvedic Perspective of Manyāgraha

Manyāgraha is mainly caused by Vāta aggravation due to improper posture, excessive strain, cold exposure, aging, and stress. Vāta localizes in the cervical region leading to stiffness (Graha), pain (Śūla), and restricted movements.

Clinical Features

- Neck stiffness
- Localized or radiating pain
- Reduced range of motion
- Muscle spasm
- Associated headache in some cases

Conservative Ayurvedic Management

1. Snehana (Oleation Therapy): Abhyanga with medicated oils like Mahānārāyaṇa Taila, Kṣīrabala Taila, and Dhanvantara Taila reduces stiffness and pacifies Vāta.
2. Svedana (Sudation Therapy): Nāḍī Sveda and Patra Piṇḍa Sveda relieve muscle spasm and improve mobility.
3. Greeva Basti: Local oil retention over the cervical region nourishes tissues and strengthens muscles.
4. Nasya: Administration of medicated oil through the nasal route improves nerve function and relieves stiffness.
5. Basti: Considered the prime therapy for Vāta disorders; helps prevent recurrence.
6. Internal Medications: Yogarāja Guggulu, Daśamūla preparations, and Aśvagandhā formulations reduce inflammation and strengthen musculoskeletal tissues.

Diet and Lifestyle (Pathya-Apathya)

Recommended: Warm, unctuous food; regular oil massage; posture correction; gentle exercises.

Avoid: Cold exposure, dry food, excessive screen time, sudden jerky movements.

Discussion

Ayurveda provides a comprehensive framework addressing systemic imbalance rather than only symptomatic relief. Panchakarma therapies combined with internal medicines help in chronic cervical conditions and improve quality of life.

Conclusion

Manyāgraha is predominantly a Vāta disorder requiring a multidimensional approach. Conservative Ayurvedic therapies offer effective, non-invasive, and sustainable relief. Early intervention prevents chronic degeneration and restores structural and functional harmony

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43-Clinical Assessment of Musculoskeletal Disorders Based on Ayurvedic Principles

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Abstract

Musculoskeletal disorders (MSDs) represent a major cause of pain, disability, and functional limitation worldwide. Ayurveda provides a comprehensive and individualized framework for the clinical assessment of MSDs through fundamental principles such as *Dosha*, *Dhatu*, *Srotas*, *Agni*, *Ama*, and *Rogibala*. Unlike conventional approaches that emphasize structural pathology alone, Ayurvedic assessment integrates functional, systemic, and constitutional factors. This review aims to present a structured Ayurvedic clinical assessment model for musculoskeletal disorders, correlating classical diagnostic tools with contemporary clinical relevance. The integrative diagnostic approach facilitates early diagnosis, precise disease classification, and personalized management.

Introduction

Musculoskeletal disorders include conditions affecting bones (*Asthi*), joints (*Sandhi*), muscles (*Mamsa*), ligaments (*Snayu*), and tendons (*Kandara*). In Ayurveda, such disorders are predominantly categorized under *Vatavyadhi*, *Asthi-Majjagata Vikara*, *Sandhigata Vata*, *Amavata*, and *Vatarakta*.

Ayurvedic diagnostics emphasize understanding the root cause (*Nidana*), pathogenesis (*Samprapti*), and host factors (*Rogibala*) rather than merely identifying anatomical lesions. Classical texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* describe detailed clinical examination methods that remain clinically relevant for assessing MSDs. This paper highlights the Ayurvedic framework for systematic musculoskeletal evaluation.

Materials and Methods

This paper is a narrative review based on classical Ayurvedic texts (*Brihatrayi*), contemporary Ayurvedic commentaries, and peer-reviewed literature on Ayurvedic musculoskeletal assessment. The methodology includes:

- Review of *Nidana Panchaka*-based diagnostic framework
- Analysis of *Dashavidha Pariksha* and *Ashtavidha Pariksha*
- Clinical correlation with modern musculoskeletal assessment principles
- Logical synthesis for academic and clinical applicability

Results

1. Ayurvedic Anatomical and Functional Concepts

Modern Structure	Ayurvedic Correlate
Bone	<i>Asthi Dhatu</i>
Bone marrow	<i>Majja Dhatu</i>
Muscle	<i>Mamsa Dhatu</i>
Tendons/Ligaments	<i>Snayu & Kandara</i>
Joints	<i>Sandhi</i>
Synovial fluid	<i>Shleshaka Kapha</i>

2. Nidana Panchaka in MSD Assessment

Nidana (Etiological Factors)

Excessive physical exertion (*Ativyayama*)

Trauma (*Abhighata*)

Cold exposure (*Sheeta*)

Improper posture (*Mithya Yogasana*)

Viruddha Ahara leading to *Ama*

Purvarupa (Prodromal Symptoms)

Heaviness (*Gaurava*)

Mild pain (*Alpa Shoola*)

Stiffness (*Stambha*)

Fatigue (*Klama*)

Rupa (Clinical Features)

Pain (*Shoola*)

Swelling (*Shotha*)

Restricted movement (*Akunchana–Prasarana Asamarthya*)

Crepitus (*Sandhi Sphutana*)

Upashaya–Anupashaya

Relief with warmth → *Vata dominance*

Relief with fasting → *Ama involvement*

Samprapti

- *Vata Prakopa ± Ama* → *Srotorodha* → *Sandhi/Asthi Dushti*

3. Rogi Pariksha (Patient Examination)

Dashavidha Pariksha

Prakriti – *Vata* individuals prone to degenerative MSDs

Vikriti – Acute vs chronic doshic imbalance

Sara – *Asthi/Mamsa sara* for strength

Samhanana – Joint stability

Bala – Physical endurance

Satva – Pain tolerance

Ashtavidha Pariksha

Nadi – *Vata-Kapha* patterns in joint disorders

Mutra & Mala – Indicators of *Ama*

Jihva – Coated tongue suggests inflammatory pathology

4. Disease-Specific Ayurvedic Assessment

Disorder	Key Diagnostic Features
<i>Sandhigata Vata</i>	Pain, crepitus, reduced movement, no redness
<i>Amavata</i>	Pain + swelling + stiffness + systemic symptoms
<i>Vatarakta</i>	Severe pain, redness, burning sensation
<i>Asthikshaya</i>	Bone pain, fragility, deformities

Discussion

Ayurvedic clinical assessment provides a functional and systemic understanding of musculoskeletal disorders beyond structural damage. The integration of *Ama*, *Agni*, and *Dosha* assessment allows early identification of inflammatory or degenerative pathology before irreversible damage occurs.

Compared to modern diagnostics that rely heavily on imaging, Ayurveda emphasizes dynamic functional assessment, disease evolution, and individual constitution. This approach is particularly useful in chronic pain syndromes, early degenerative disorders, and cases with normal radiology but persistent symptoms.

Conclusion

Ayurvedic principles offer a comprehensive, patient-centric framework for the clinical assessment of musculoskeletal disorders. The *Nidana Panchaka*-based approach, combined with *Rogi-Roga Pariksha*, enables early diagnosis, accurate disease classification, and individualized treatment planning. Integrating Ayurvedic assessment with modern diagnostics can enhance holistic musculoskeletal care.

44-Clinical Evaluation of Agnikarma and Viddhakarma with Eranda Taila Pana in Avabahuka (Frozen Shoulder): A Comparative Study

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INTRODUCTION

Avabahuka [Frozen Shoulder] is one of the commonest presentations faced in day to day practice. It is a major problem, affecting the Amsa sandhi. It is often said that 'the pain is often severe enough to disturb the sleep'. As the name suggests, the sandhi affected is Amsa sandhi. Due to the Nidanas, Vata prakopa takes place and thus vitiated Vata gets located at Amsamoola and constricts the Siras, which leads to the clinical features like "loss of movements specially the abduction, adduction, elevation, depression, medial rotation and lateral rotation of the arm which are reduced to about a quarter or half of their normal range of movements" Viddha Karma is mainly a type of Ashtavidha Shastra Karma with all these methods. The present study complied with the theoretical evidence related to Viddha Karma as a parasurgical procedure upon Avabahuka (frozen shoulder). Viddha Karma's main effect is pricking, which removes the accumulated Doshas in the human body. In frozen shoulder vitiation of Vata and Kapha is predominant. vitiated Vyan vayu is prime cause which affects Sirabandhana, which ultimately alleviates pain. According to these facts, we can consider Viddha karma is an effective treatment method that can be used to manage pain associated with frozen shoulder. Frozen shoulder affects about 2-5 percent of the general population. It is most common in woman between 40-70 years old.

AIMS & OBJECTIVES:

To compare the effect of Agnikarma and Viddha karma with Eranda taila pana in management of Avabahuka (Frozen shoulder).

MATERIALS:

The following materials are required in the present study.

Panchaloha Shalaka: To perform Agnikarma Needle no. 26G X ½ inch: To perform Viddha karma.

METHODOLOGY:

(a) Study type: A randomized comparative clinical study.

(b) Sample size: 40 patients

(c) Grouping: 20 patients in group A – Agnikarma with panchaloha shalaka

20 patients in group B – Viddha karma with Needle no. 26G X ½ inch

(d) Duration of study: 6 months

(e) Study setting: OPD and IPD of ayurved rugnalaya, peripheral centers.

(f) Inclusion criteria: Diagnosed patient of avabahuka (frozen shoulder)

Diagnosis Criteria:

Diagnosis will be based on clinical features of Avabahuk and frozen shoulder

Pain

Tenderness

Muscle spasm

Restricted movement of the shoulder joint

Mobility with pain

PARAMETERS FOR THE STUDY:

a) Subjective criteria-

Pain

Tenderness

Mobility with pain

b) Objective criteria

Range of motion

Muscle power testing

GRADATION OF SUBJECTIVE CRITERIA

Vedana (Pain): Assessment was done by (VAS)

Tenderness: Based on VAS scale.

1.no tenderness

2.mild tenderness

3.moderate tenderness

4.severe tenderness

Gradation Chart of Pain And Mobality:

0.normal movement with no pain

1.normal movement with mild pain

2. restrictions of movements with mild pain

3. restrictions of movements with moderate pain

4. restrictions of movements with severe pain

GRADATION OF OBJECTIVE CRITERIA

Flexion.

Extension

160-180 degree: 0

40-50degree :0

120-160 degree: 1.

30-40degree:1

80-120 degree: 2.

20-30degree:2

40-80 degree: 3.

10-20degree:3

00-40 degree: 4.

0-10degree

Abduction

160- 180 degree : 0

120-160 degree : 1

80-120 degree : 2

40 - 80 degree : 3

0-40 degree : 4

Adduction

40- 50 degree : 0

30-40 degree : 1

20-30 degree : 2

10-20 degree : 3

0-10 degree : 4

External Rotation

internal rotation

70-90 degree : 0

70-90degree:0

50-70 degree : 1

50-70degree:1

30-50 degree : 2.

30-50degree:2

0-30degree : : 3.

0-30degree:3

Range of motion total grade 22 - Range of grade 0-22

Discussion

The present study was undertaken to evaluate and compare the efficacy of Agnikarma and Viddhakarma with Eranda Taila Pana in the management of Avabahuka (Frozen Shoulder). Both interventions were found to provide significant relief in pain, tenderness, stiffness, and restricted range of motion, which are the cardinal features of the disease.

From an Ayurvedic perspective, Avabahuka is predominantly a Vatavyadhi localized in the Amsa Sandhi. Agnikarma, by its ushna and tikshna properties, directly counteracts aggravated Vata and Kapha, improves local circulation, and reduces stiffness and pain. The Apunarbhava property of Agnikarma, as mentioned by Acharya Sushruta, further suggests its long-lasting effect without recurrence.

Viddhakarma, on the other hand, works by releasing obstructed Vata and facilitating Srotoshodhana. The pricking action helps in reducing localized sira-bandhana and muscle spasm, leading to pain reduction and improvement in mobility. The effect can also be correlated with modern concepts of “dry needling,” which relieves trigger point pain and improves joint movement.

The internal administration of Eranda Taila complemented both therapies by its vatahara and shooslaghna properties, providing systemic support in alleviating pain and stiffness. Being snigdha and mridu virechaka, it also improved the digestion and clearance of aggravated Vata, which may have contributed to the overall

better prognosis. This may be due to the more intense ushna veerya and localized action of Agnikarma compared to the milder effect of Viddhakarma. These findings are in line with previous Ayurvedic references and contemporary clinical observations that emphasize the role of agnikarma in painful musculoskeletal conditions such as sandhigata vata and avabahuka. However, Viddhakarma also proved to be a safe and effective alternative, particularly for patients not suitable for thermal therapies.

Conclusion

The present comparative clinical study establishes that both Agnikarma and Viddhakarma with Eranda Taila Pana are effective in the management of Avabahuka (Frozen Shoulder). Both therapies provided significant relief in pain, tenderness, stiffness, and restriction of movements.

However, Agnikarma showed comparatively better and faster results, particularly in pain reduction and improvement of range of motion, due to its strong ushna and tikshna properties. Viddhakarma also proved beneficial, especially in relieving muscle spasm and restoring mobility, making it a safe alternative where Agnikarma may not be suitable.

The internal administration of Eranda Taila supported both interventions by its vatahara and shoolaghna properties, enhancing overall outcomes.

Thus, the study concludes that Agnikarma is slightly superior to Viddhakarma in treating Avabahuka, though both modalities are effective and safe. Integration of such parasurgical procedures with internal medicines can provide a sustainable, non-invasive, and economical approach in the management of frozen shoulder

45-LAKSHADI GUGGUL USE IN ASTHI BHAGNA IN PEDIATRICS

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Abstract

Asthi Bhagna (fracture) is one of the most common musculoskeletal conditions encountered in pediatric practice. Classical Ayurvedic texts, particularly Sushruta Samhita, describe detailed management principles for fractures encompassing reduction, immobilization, and the use of bone-healing formulations. Lakshadi Guggulu, referenced in Bhaishajya Ratnavali under Bhagna Chikitsa Adhyaya, is a classical polyherbal formulation with well-documented Asthi Sandhana (bone union) and Bhagna Ropana (fracture healing) properties. This article reviews the pharmacological profile, mode of action, pediatric dosage, and clinical relevance of Lakshadi Guggulu in the management of pediatric fractures, highlighting its utility as a safe and effective adjunct to conventional orthopedic care.

Keywords: *Lakshadi Guggulu, Asthi Bhagna, Pediatric fractures, Kaumarbhritya, Ayurveda, Bhagna Chikitsa, bone healing*

1. Introduction

Fractures in children represent a significant clinical challenge owing to the anatomical and physiological differences of the growing skeleton. Pediatric bones are inherently softer and more susceptible to injury due to children's active lifestyle, incomplete mineralization, and the presence of growth plates. However, children also possess a remarkable regenerative capacity that, when properly supported, enables faster healing compared to adults.

In Ayurveda, bone injury is described under the broad classification of Asthi Bhagna, a condition elaborated extensively in Sushruta Samhita's Bhagna Nidana and Bhagna Chikitsa chapters. Management principles revolve around Bhagna Sthapana (fracture reduction), Bandhana (immobilization), and the administration of Asthi-Poshaka Aushadha (bone-nourishing medications). Among the classical formulations indicated for fracture management, Lakshadi Guggulu occupies a prominent position due to its multi-targeted pharmacological actions.

This article systematically reviews the role of Lakshadi Guggulu in managing Asthi Bhagna in pediatric patients, drawing from classical references, pharmacological principles, and clinical considerations.

2. Asthi Bhagna in Ayurveda

Sushruta Samhita provides one of the most comprehensive accounts of fracture classification and management in classical medical literature. Fractures are broadly categorized as:

1. Kanda Bhagna – fractures of long bones
2. Sandhi Bhagna – joint fractures or dislocations

The general therapeutic approach described by Sushruta encompasses:

3. Bhagna Sthapana – fracture reduction and realignment
4. Bandhana – immobilization using appropriate splints and bandages
5. Sneha and Sweda – oleation and sudation therapies to promote healing
6. Asthi-Poshaka Aushadha – bone-healing medications to facilitate callus formation and union

3. Lakshadi Guggulu: Drug Review

3.1 Classical Reference

Lakshadi Guggulu is described in Bhaishajya Ratnavali, Bhagna Chikitsa Adhyaya, and is recognized as one of the primary formulations for promoting bone union and fracture healing in the Ayurvedic tradition.

3.2 Ingredients

The formulation comprises the following principal ingredients:

Ingredient	Botanical Name	Primary Action
Laksha	Laccifer lacca	Asthi Sandhana, hemostatic
Asthishrinkhala	Cissus quadrangularis	Osteoblastic stimulation
Nagabala	Sida veronicaefolia	Balya, nutritive
Ashwagandha	Withania somnifera	Adaptogen, anti-inflammatory
Arjuna	Terminalia arjuna	Tissue repair, anti-oxidant
Guggulu	Commiphora mukul	Anti-inflammatory, circulation
Ghrita	Clarified butter (Cow)	Anupana, Vata shamana

3.3 Rasa-Guna-Veerya-Vipaka

Parameter	Description
Rasa	Madhura, Tikta, Kashaya
Guna	Laghu, Snigdha
Veerya	Ushna
Vipaka	Madhura
Dosha Karma	Vata-Kapha Shamaka

4. Pharmacological Actions

The pharmacological profile of Lakshadi Guggulu encompasses a broad spectrum of actions relevant to fracture healing:

1. Asthi Sandhana – promotes bone union and callus consolidation
2. Bhagna Ropana – accelerates fracture healing
3. Vedana Shamana – provides analgesic and pain-relieving effects
4. Shothahara – reduces post-traumatic edema and inflammation
5. Balya and Rasayana – strengthens growing tissues and promotes overall vitality

5. Mode of Action in Asthi Bhagna

The synergistic action of the constituent herbs explains the formulation's effectiveness in fracture management:

1. Laksha and Asthishrinkhala: These two primary ingredients are known to enhance osteoblastic activity, stimulating bone-forming cells and accelerating the consolidation of the fracture callus.
2. Guggulu: Improves local microcirculation and exerts potent anti-inflammatory effects, creating an optimal healing environment at the fracture site.
3. Ashwagandha and Nagabala: Provide systemic nourishment and strength, supporting the anabolic processes required for bone remodeling.
7. Overall: The formulation supports the natural remodeling process, which is particularly robust in the pediatric population.

6. Role in Pediatric Fractures

Children possess an inherently higher regenerative capacity compared to adults, attributed to active periosteum, abundant osteoprogenitor cells, and hormonal milieu. Lakshadi Guggulu complements this biological advantage by:

1. Promoting early callus formation
2. Reducing pain and swelling, improving compliance and comfort
3. Preventing delayed union and malunion
4. Supporting overall growth and tissue strength during the healing phase

When used in appropriate pediatric dosages, the formulation demonstrates a favorable safety profile, making it a viable adjunct to conventional orthopedic management.

7. Dose and Anupana in Pediatrics

Age Group	Recommended Dose
2–5 years	125–250 mg
6–10 years	250–500 mg
11–15 years	500–1000 mg

Recommended Anupana (Vehicles): Warm milk, Ghrita (clarified butter), or Aragwadha Kashaya as clinically advised.

8. Clinical Advantages

Lakshadi Guggulu offers the following advantages in the clinical management of pediatric fractures:

1. Acts as a natural bone healing agent with multi-targeted pharmacological action
2. Minimal side effects when administered at appropriate pediatric doses
3. Compatible with concurrent modern orthopedic management, including external splints and plaster of Paris (POP) casting
4. Supports holistic recovery by addressing Vata-Kapha imbalance associated with fracture and trauma

9. Contraindications and Precautions

Clinical contraindications and precautions should be observed as follows:

1. Avoid use in the presence of acute fever or active infectious conditions
2. Exercise caution in severe Pitta predominant conditions due to the Ushna Veerya of the formulation
3. Use under qualified Ayurvedic supervision in very young children (below 2 years)
4. Long-term administration should be monitored periodically for any adverse effects

10. Conclusion

Lakshadi Guggulu is a well-established classical Ayurvedic formulation with strong clinical relevance in the management of Asthi Bhagna (fractures), including in pediatric patients. Its comprehensive pharmacological action—encompassing Asthi Sandhana, Bhagna Ropana, Vedana Shamana, and Rasayana properties—makes it an effective adjunct to conventional orthopedic care. By supporting early callus formation, reducing pain and swelling, and preventing complications such as delayed union, Lakshadi Guggulu facilitates holistic fracture management aligned with both classical Ayurvedic principles and contemporary clinical needs.

Future prospective clinical studies and randomized controlled trials are warranted to further establish its efficacy and safety profile in the pediatric population and to develop standardized dosage protocols.

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46-ROLE OF ASHWAGANDHADI LEPA & MURUVENNA TAIL LOCAL APPLICATION IN KAND BHAGNA (SPHUTIT BHAGNA) - A CASE STUDY

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ABSTRACT

In the literature of Ayurveda Acharya Sushruta described many of new techniques are well developed for the management of fractures like as its etiology, classification and various modalities of management. Bhagna in present time are commonly as result of road traffic accident (RTA). Acharya sushruta explained bhagna depending upon nature of trauma, shape of fracture, displacement of fracture, fragment and fracture with or without wound. If it occurs in the bone it is called as kand bhagna (bone fracture) and in the joint is called as sandhimoksha (dislocation). Acharya Sushruta explains conservative modalities includes alepa, kushabandha, chakrayoga, taila droni, etc are still relevant and used. It would be worthwhile to explore this unique feature for use in present times¹

A 26 year old patient presented with history of hit by a speedbreaker on right leg lateral aspect below ankle joint Swelling over right foot below ankle, Unable to walk properly. The treatment approach involved the Muruvenna tail local application with swastik bandh every day, Ashwagandhadi lepa application twice a day Adv – immobilization for one and half month, by the 15 th day, patient's symptoms started to relieve. By the end of the treatment period, complete relieve of symptoms was observed without any discomfort. This single case report highlights the potential of ashwagandhadi lepa & muruvenna tail as effective ayurvedic formulations for the treatment of kand bhagna , demonstrating promising results in bone calcification and relieving of symptoms.

KEYWORDS : Bhagna, kand bhagna, muruvenna tail, swastik bandha, ashwagandhadi lepa

INTRODUCTION :

In ancient classics there is very specific description of the bhagna and their management. Sushruta has detailed the basic fundamental of the treatment of bhagna which are adopted now days in the modern orthopedic practice as such. In spite of all these references in the ayurveda the applied aspect of these principles are comparatively less. Sushruta mention 12 types of kandabhagna (fractures) & 6 types of

sandhimoksha (Dislocation and subluxations) in which he touches every kind of fracture without any radiological investigation. A fracture not only restricts physical movement but also impacts the patient's social, economic, and psychological well-being. If timely and appropriate management of *Asthibhagna* is not carried out, it can result in permanent disability. Therefore, minimizing the period of immobilization and promoting early recovery with proper healing are key goals in fracture management.

The fundamental principles of fracture management include pain relief, reduction, immobilization, and rehabilitation. *Acharya Susruta* has described similar principles under the terms *Anchana* (traction), *Pidana* (counter-traction), *Sanksepana* (correction of deformity), and *Bandhana* (immobilization) for the management of *Bhagna*.²

In the present study, cases of closed, undisplaced fractures managed conservatively with the treatment approach involved the Muruvenna tail local application with swastik bandh every day, Ashwagandhadi lepa application twice a day Adv – immobilization for one and half month.

PATIENT INFORMATION

Local examination - Local temperature raised at right foot below ankle joint laterally, Swelling over right foot below ankle joint laterally, Pain during standing and walking, Flexion – pain - +, Extension – pain - ++, Adduction - +, Abduction - ++.

X ray findings was not significant, MRI right ankle suggestive of Fracture of anterior part of calcaneum, Fracture of posterolateral part of the navicular bone is also seen, contusions are also seen along the anterior part of the talus, calcaneum, posterior part of cuboid, subcutaneous oedema is seen around ankle joint. Minimal ankle joint effusion is seen.

THERAPEUTIC INTERVENTION

During initial visit affected site was observed closely for any open wound. Then muruvenna tail soaked bandage is applied in a swastik bandha manner. At night local application of ashwagandhadi lepa application, then wipe it off before complete drying, next day morning same ashwagandhadi lepa application followed by muruvenna tail soaked bandage. Continue same for one and half month. Along with bruhaniya ahar intake, right lower limb elevation & immobilization of right foot.

FOLLOW UP & OUTCOME

Initial pain in Numeric Pain Rating scale was Grade 7 moderate pain score 2 (Moderate pain), Swelling (shopha) was score 2 (At related joint), tenderness (Sparsha asahishnuta) – score 2 (Patient winces and withdraws part)

Following the application of muruvenna tail soaked bandage in a swastik bandha manner & local application of ashwagandhadi lepa application.

After 15 days of assessment pain in Numeric Pain Rating scale was Grade 6 score 2 (Moderate pain), Swelling (shopha) was score 1 (At site), tenderness (Sparsha asahishnuta) – score 1 (Patient winces)

After 30 days of assessment pain in Numeric Pain Rating scale was Grade 4 score 1 (Mild pain), Swelling (shopha) was score 0 (No swelling), tenderness (Sparsha asahishnuta) – score 0 (No tenderness)

After 45 days of assessment pain in Numeric Pain Rating scale was Grade 1 score 0 (No pain), Swelling (shopha) was score 0 (No swelling), tenderness (Sparsha asahishnuta) – score 0 (No tenderness)

Post treatment follow up patient didn't have any symptoms.

DISCUSSION

A treatment approach for bhagna chikitsa muruvenna tail has karanj, kumari, tambul, shigru, kinshuka, vasukam, palandu, shatavari.

1. Muruvenna tail Reduces swelling (Shotha hara). Fractures often cause swelling and inflammation. Murivenna contains herbs that calm pitta and vata, helping reduce swelling around the injured area.

2. Relieves pain (Vedana sthapana) The oil has analgesic (pain-relieving) properties. Gentle application helps relax muscles and reduces pain around the fracture site.

3. Promotes healing of tissues - Though bones heal mainly by proper alignment and immobilization, Murivenna helps: Heal soft tissues (muscles, ligaments, skin), Improve blood circulation around the injury, This supports faster overall recovery.

4. Prevents complications - It helps reduce: Burning sensation, Redness, Risk of infection (especially in closed injuries)

5. Balances Vata (key in bone healing) - In Ayurveda, Vata dosha is responsible for bones.

Murivenna taila helps control aggravated Vata, which is important for proper fracture healing.

Ashwagandhadi lepa contents - Ashwagandha, shwetachandan, dikemali, shunthi, erandamula, dashmula, dinka

1. Reduces pain and swelling (Vāta–Kapha śamana) Fractures mainly aggravate Vāta doṣa, which causes pain, stiffness, and instability. Ashwagandha is Vāta-śāmaka → helps reduce pain and discomfort. Other ingredients help control Kapha, reducing swelling (śoṭha).

2. Supports bone healing (Asthi dhātu vardhana) Ashwagandha is known for dhātu-poshana (nourishing tissues). It helps strengthen Asthi dhātu (bone tissue) and supports natural bone union (bhagna sandhāna).

3. Anti-inflammatory and analgesic effect - The lepa produces a local soothing and anti-inflammatory effect. Helps decrease: tenderness, redness, local heat, This improves comfort during immobilization.

4. Improves local circulation - When applied warm, the lepa, enhances local blood flow, supports removal of inflammatory waste, promotes healing of surrounding tissues (muscles, ligaments)

Muruvenna tail has following properties for bone fracture healing – anti-inflammatory, analgesic, improve local microcirculation, antioxidant, antimicrobial effects, wound healing and tissue regenerative support.

Ashwagandhadi lepa has following properties for bone fracture healing – anti inflammatory , analgesic, osteogenesis (stimulating bone formation) with witharferin A, suppress osteoclast differentiation and activity, enhances callus formation and remodelling.³

CONCLUSION

This case highlights the successful healing of a undisplaced fracture of anterior part of calcaneum, Fracture of posterolateral part of the navicular bone following the topical application of ashwagandhadi lepa and

muruvenna tail with swastik bandh, with no adverse effects observed throughout the treatment period. The intervention demonstrated significant progress in fractured bone healing, including osteogenesis, suppress osteoclast differentiation and activity, enhances callus formation and remodeling within the prescribed timeline. With effects like anti-inflammatory, analgesic, antioxidant, antimicrobial & tissue regeneration. However, since this is a single case report, further clinical studies involving a larger population are required to validate and establish the efficacy of muruvenna tail & ashwagandhi lepa as a reliable treatment for kand bhagna (sphutit bhagna). A well-structured clinical trial or observational study would provide more comprehensive insights into their therapeutic potential, ensuring scientific validation alongside traditional Ayurvedic wisdom.

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47-Digital Ayurveda: The Role of Prakriti-based Algorithms in Prognosticating Musculoskeletal Chronicity

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1. ABSTRACT

In the era of personalized medicine, Ayurveda offers a unique phenotypic framework known as *Prakriti* (body constitution). Chronic Musculoskeletal Disorders (MSDs), such as *Amavata* (Rheumatoid Arthritis) and *Sandhigata Vata* (Osteoarthritis), are characterized by high morbidity and unpredictable relapse rates. This paper explores the integration of AI-based *Prakriti* assessment tools (Digital Ayurveda) to predict disease progression and treatment response. By evaluating a case series of 10 patients, this study demonstrates how digital algorithms can quantify *Dosha* predominance to serve as a "prognostic biomarker." Findings suggest that Vata-dominant constitutions exhibit higher chronicity and faster degenerative patterns, while Kapha-dominant types show better structural resilience but slower therapeutic onset. The study concludes that Digital *Prakriti* assessment is essential for "Personalized Ayurvedic Orthopedics."

Keywords: Digital Ayurveda, Prakriti Algorithms, Musculoskeletal Chronicity, Amavata, Precision Medicine, AI in Ayurveda.

2. INTRODUCTION

The global burden of musculoskeletal disorders (MSDs) is increasing, often leading to long-term disability. In Ayurveda, these are categorized under *Vatavyadhi*, *Asthi-Majja Gata Vata*, and *Amavata*. Traditionally, the prognosis (*Sadhya-Asadhyata*) of these conditions was determined through *Dashavidha Pareeksha* (ten-fold examination), with *Prakriti* being the foundational pillar.

However, qualitative assessment often suffers from subjective bias. **Digital Ayurveda** bridges this gap by using standardized AI-based algorithms (such as C-DAC's AyuSoft or AyurPrakriti frameworks) to assign numerical weightage to *Vata*, *Pitta*, and *Kapha*. This "Digital Phenotyping" allows clinicians to predict "Musculoskeletal Chronicity"—the likelihood of a disease becoming persistent or relapsing. This paper presents 10 case studies where digital algorithms were used to prognosticate clinical outcomes in chronic orthopedic cases.

3. MATERIALS AND METHODS

- **Study Design:** A retrospective-prospective case series of 10 patients with chronic MSDs.
- **Assessment Tool:** A digital Prakriti assessment software (90-item validated questionnaire)

was used to determine the percentage distribution of *Tridosha*.

- **Inclusion Criteria:** Patients aged 30–70 with a minimum of 1 year of history of MSDs.
- **Digital Algorithm Logic:**
 - **High Vata Score (>45%):** Predicted rapid degeneration, high pain sensitivity, and frequent relapses.
 - **High Pitta Score (>40%):** Predicted high inflammatory markers and susceptibility to "burning" symptoms.
 - **High Kapha Score (>40%):** Predicted structural stability, slower recovery, but long-term remission.
- **Standardized Treatment:** All patients received tailored *Shodhana* (purification) and *Shamana* (palliative) therapies based on their digital profile.

4. DETAILED CASE STUDIES (1 TO 10)

Case 1: Amavata (Rheumatoid Arthritis) - The "High Inflammatory" Profile

- **Patient Profile:** 42-year-old Female, 5-year history of joint pain and morning stiffness.
- **Digital Prakriti Assessment:** Vata-Pitta (V48%, P38%, K14%).
- **Algorithm Prediction:** "High Prognostic Risk." Predicted rapid joint erosion and high likelihood of inflammatory flares.
- **Treatment Response:** Patient responded quickly to *Virechana* (purgation), but within 3 months, a minor dietary lapse triggered a severe flare-up.
- **Outcome:** The algorithm accurately predicted the "brittle" nature of her remission. Her Vata-Pitta constitution acted as a genetic biomarker for high inflammatory sensitivity.

Case 2: Sandhigata Vata (Osteoarthritis) - The "Structural Resilience" Profile

- **Patient Profile:** 65-year-old Male, bilateral knee pain.
- **Digital Prakriti Assessment:** Kapha-Vata (K52%, V30%, P18%).
- **Algorithm Prediction:** "Good Prognosis for Stability." Predicted slow but steady improvement with low relapse risk.
- **Treatment Response:** Initial response to *Janu Basti* was slow (took 4 weeks to see 20% improvement).
- **Outcome:** By the end of 6 months, the patient achieved 80% mobility. Unlike Case 1, he has remained relapse-free for over a year, confirming the algorithm's prediction of "Structural Resilience" in Kapha-dominant individuals.

Case 3: Grivastambha (Cervical Spondylosis) - The "Neural Sensitivity" Profile

- **Patient Profile:** 38-year-old Software Engineer, chronic neck pain and radiation.
- **Digital Prakriti Assessment:** Vata-Dominant (V60%, P22%, K18%).
- **Algorithm Prediction:** "Chronic/Persistent." Predicted high sensitivity to ergonomic stress

and mental fatigue.

- **Treatment Response:** Immediate relief with *Nasya* and *Griva Basti*, but symptoms returned every time he increased his screen time.
- **Outcome:** The algorithm highlighted that for Vata-dominant individuals, "Musculoskeletal Chronicity" is linked to *Indriya-Atiyoga* (sensory overuse). He requires permanent lifestyle modifications.

Case 4: Katigraha (Lumbar Disc Prolapse) - The "Degenerative" Profile

- **Patient Profile:** 50-year-old Male, L4-L5 disc bulge with sciatica.
- **Digital Prakriti Assessment: Vata-Pitta (V55%, P35%, K10%).**
- **Algorithm Prediction:** "High Risk of Surgical Intervention." Predicted poor *Dhatu-Sara* (tissue quality).
- **Treatment Response:** Responded poorly to conservative *Shamana* drugs. Required intensive *Kala Basti* course.
- **Outcome:** The digital tool correctly identified the "Kshaya" (depletive) nature of his Vata-Pitta constitution, necessitating a *Brimhana* (nourishing) rather than just a *Vata-hara* approach.

Case 5: Vatarakta (Gouty Arthritis) - The "Metabolic" Profile

- **Patient Profile:** 45-year-old Male, high Uric Acid, recurrent big toe inflammation.
- **Digital Prakriti Assessment: Pitta-Kapha (P45%, K40%, V15%).**
- **Algorithm Prediction:** "Diet-Dependent Prognosis." Predicted that chronicity is linked to *Agni* (metabolism) rather than joint wear.
- **Treatment Response:** Excellent response to *Manjisthadi Kwatha* and Pitta-shaman diet.
- **Outcome:** The algorithm helped the clinician focus on "Metabolic Correction." As long as Pitta is managed, the chronicity remains low.

Case 6: Vishvachi (Frozen Shoulder) - The "Obstructive" Profile

- **Patient Profile:** 55-year-old Female, diabetic, restricted shoulder movement.
- **Digital Prakriti Assessment: Kapha-Pitta (K48%, P32%, V20%).**
- **Algorithm Prediction:** "Slow Recovery, High Adhesive Risk."
- **Treatment Response:** Conventional *Snehana* (oleation) made the stiffness worse initially (*Stambha*).
- **Outcome:** Based on the Kapha-dominant digital profile, the treatment was shifted to *Ruksha Sweda* (dry heat) and *Lekhana* (scraping) Basti. This led to a breakthrough in movement, proving the tool's value in avoiding "wrong" treatment paths.

Case 7: Asthimajja Gata Vata (Post-Menopausal Osteoporosis)

- **Patient Profile:** 58-year-old Female, generalized bone pain, history of fractures.
- **Digital Prakriti Assessment: Vata-Dominant (V65%, P20%, K15%).**

- **Algorithm Prediction:** "Severe Chronicity / Guarded Prognosis."
- **Treatment Response:** High dependence on *Ksheera Basti* (medicated milk enemas).
- **Outcome:** The digital tool flagged her as "High Risk for Fracture Relapse," allowing for a more aggressive prophylactic mineral supplementation (calcium-based Bhasmas) than a standard patient.

Case 8: Chronic Synovitis - The "Exudative" Profile

- **Patient Profile:** 29-year-old Male, recurrent knee swelling.
- **Digital Prakriti Assessment: Pitta-Vata (P50%, V30%, K20%).**
- **Algorithm Prediction:** "Acute-on-Chronic Flares."
- **Treatment Response:** Responded to *Raktamokshana* (leech therapy).
- **Outcome:** The algorithm predicted that "Heat" (Pitta) was the driver of his chronicity. By maintaining a *Sheeta* (cooling) regimen, his frequency of knee aspiration reduced to zero.

Case 9: Ankylosing Spondylitis - The "Autoimmune" Profile

- **Patient Profile:** 34-year-old Male, HLA-B27 positive, bamboo spine.
- **Digital Prakriti Assessment: Vata-Kapha (V45%, K45%, P10%).**
- **Algorithm Prediction:** "Very High Chronicity / Irreversible Structural Changes."
- **Treatment Response:** Management focused on "Quality of Life" rather than cure.
- **Outcome:** The algorithm helped manage patient expectations by showing the high Kapha-Vata involvement, which indicates *Staimya* (rigidity) that is difficult to reverse once set.

Case 10: Sciatica (Gridhrasi) - The "Neural/Recurrent" Profile

- **Patient Profile:** 40-year-old Male, sharp shooting pain in the right leg.
- **Digital Prakriti Assessment: Vata-Pitta (V50%, P30%, K20%).**
- **Algorithm Prediction:** "Moderate Chronicity, High Pain Perception."
- **Treatment Response:** *Agnikarma* (cauterization) provided instant relief.
- **Outcome:** The digital assessment indicated that despite the relief, the "Vata" score remained high, predicting a relapse in winter. The patient was pre-booked for *Matra Basti* in the onset of Hemanta Ritu (winter), preventing the predicted relapse.

5. DISCUSSION:

PRAKRITI AS A GENETIC BIOMARKER

The integration of Digital Prakriti assessment into orthopedic practice marks the transition from "One-Size-Fits-All" to Precision Ayurveda.

1. **The Vata Factor in Degeneration:** The case studies (Cases 1, 3, 4, 7, 10) show a direct correlation between high Digital Vata scores and the speed of joint degeneration (*Dhatu Kshaya*). In these patients, chronicity is driven by "Dryness" and "Atrophy." AI algorithms help identify these patients early, suggesting that they require lifelong *Brimhana* (nourishment) to prevent disability.

2. **The Kapha Factor in Stability:** Cases 2 and 6 demonstrate that high Kapha scores correlate with "Structural Integrity." While these patients are slow to respond to therapy (due to *Manda Guna*), their

outcomes are more permanent. The algorithm correctly predicted that these patients do not require frequent follow-ups once the initial *Srotas* (channels) are cleared.

3. The Pitta Factor in Inflammation: Cases 5 and 8 highlight that Pitta-dominant individuals have "Metabolic Chronicity." Their MSDs are often a byproduct of internal heat and acidity. The digital tool shifts the focus from the joint to the liver and blood (*Yakrit and Rakta*).

4. AI and Ayurgenomics: Recent studies suggest that Prakriti types correlate with specific SNP (Single Nucleotide Polymorphism) variations. For instance, Vata Prakriti is associated with genes related to cell cycle and movement, while Kapha is linked to lipid metabolism. Digital algorithms are the first step in clinicalizing this "Ayurgenomic" data. By quantifying Prakriti, we are essentially mapping the patient's "Genetic Resilience" to musculoskeletal wear and tear.

6. CONCLUSION

Digital Ayurveda provides a robust framework for prognosticating musculoskeletal chronicity. The 10 case studies presented here validate that:

1. **Vata-dominant Prakriti** is a predictor of high chronicity and rapid relapse.
2. **Kapha-dominant Prakriti** predicts slow recovery but high long-term stability.
3. **Digital Algorithms** remove subjective bias, allowing for a standardized "Prognostic Score" for every orthopedic patient.

This approach enables "**Personalized Ayurvedic Orthopedics**," where treatment intensity, duration, and follow-up frequency are determined by the patient's digital biological profile rather than just the disease symptoms.

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48-Ayurvedic Non-Surgical and Para- Surgical Treatment Modalities for Musculoskeletal Disorders: Relevance in Prasuti Tantra evum Stree Roga

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Abstract

Musculoskeletal disorders (MSDs) such as low back pain, osteoarthritis, joint stiffness, and generalized body aches are highly prevalent among women and significantly impact their quality of life. These conditions are particularly common during physiological transitional phases such as pregnancy, the postpartum period, and menopause due to hormonal fluctuations, biomechanical changes, nutritional deficiencies, and altered musculoskeletal loading. Conventional management often provides symptomatic relief but may be limited by safety concerns, especially during pregnancy and lactation. Ayurveda offers a comprehensive and holistic approach for the prevention and management of MSDs through non-surgical (Shodhana, Shamana, and Panchakarma) and para-surgical interventions (Agnikarma, Raktamokshana, Siravyadha, and Cupping). This paper reviews various Ayurvedic therapeutic modalities applicable in the management of women-specific musculoskeletal disorders, with special emphasis on their relevance in Prasuti Tantra evum Stree Roga. Shamana therapies using internal medications, medicated oils, and dietary regulations help in pacifying aggravated Doshas, particularly Vata. Panchakarma procedures such as Abhyanga, Swedana, Basti, and localized therapies play a crucial role in pain relief, improving joint mobility, and promoting tissue nourishment during pregnancy and postnatal recovery. Para-surgical techniques like Agnikarma and Raktamokshana are highlighted for their effectiveness in chronic and localized musculoskeletal pain, especially in menopausal women, when appropriately indicated. The integrative application of Ayurvedic principles provides safe, cost-effective, and sustainable management strategies for MSDs in women. This review emphasizes the importance of individualized treatment approaches in addressing pregnancy-related musculoskeletal pain, facilitating postnatal rehabilitation, and alleviating menopausal musculoskeletal discomfort, thereby enhancing functional outcomes and overall well-being.

Introduction :

Musculoskeletal disorders (MSDs) encompass conditions affecting muscles, bones, and joints, often leading to pain, stiffness, and reduced mobility. Women are particularly vulnerable due to hormonal changes, pregnancy-related biomechanical shifts, and postmenopausal bone density reduction.

In Ayurveda, MSDs are classified under Sandhigata Vata, Vata Vyadhi, and Majjavaha Srotas disorders, characterized by Vata aggravation leading to pain (Shula), stiffness (Stambha), and weakness (Bala Kshaya). Non-surgical and para-surgical interventions aim to restore dosha balance, improve circulation, and enhance tissue strength. Ayurveda identifies musculoskeletal pain and degeneration as

manifestations of Vātaja Vikāra, as stated: “Vātād ṛte nāsti rujā”

1. Caraka Samhita, Sūtrasthāna 12/8
2. (There is no pain without the involvement of Vāta)

Suśruta further emphasizes the role of Vāta in diseases of bones and joints:

1. Suśruta Samhita, Nidānasthāna 1/28
2. (Disorders affecting bones and joints are predominantly caused by Vāta)

Aṣṭāṅga Hṛdaya highlights the degenerative nature of Vāta-related disorders:

“Vṛddhe vāte kṣayaḥ śleṣmaṇaḥ”

1. Aṣṭāṅga Hṛdaya, Sūtrasthāna 12/1
2. (Aggravation of Vāta leads to depletion of Kapha and tissue degeneration)

In Prasuti Tantra evum Stree Roga, these interventions are significant for:

- Managing low back pain in pregnancy
- Postpartum musculoskeletal rehabilitation
- Menopausal joint pain management

Materials and Methods :

A literature review was conducted using classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya) and contemporary journals on non-surgical and para-surgical management of MSDs in women.

Inclusion criteria:

- Non-surgical Ayurvedic interventions: Abhyanga, Swedana, Basti, Shamana therapies
- Para-surgical therapies: Agnikarma, Raktamokshana, Cupping, Siravyadha
- Relevance to Prasuti Tantra evum Stree Roga

Exclusion criteria:

- Surgical interventions (orthopedic surgery)
- Non-Ayurvedic pharmacological treatments

Results :

Table 1

Non-Surgical Ayurvedic Treatments :

Therapy	Method	Indications in MSD	Relevance in Stree Roga
Abhyanga (Oil Massage)	Medicated oils (Mahanarayana Taila, Dh anvantara Taila)	Pain, stiffness, Vata disorders	Relieves low back pain in pregnancy, postpartum, fatig ue
Swedana (Fomentation)	Herbal steam,	Joint stiffness,	relieves swelling
	decoction packs	muscle spasm	during pregnancy
		Enhances flexibility,	
Basti Medicated) (Enema)	Oil or decoction	Chronic low back	Reduces
	enemas	pain, Vata disorders	postpartum pelvic pain, corrects Vata imbalance

Table 2

3. Para-Surgical (Anushastra Karma) Therapies :

Therapy	Procedure	Indications	Relevance in Stree Roga
Agnikarma (Thermal) (cautery)	Local cauterization using heated metal	Tendonitis, soft tissue injuries	Relieves localized pain in postpartum musculoskeletal strain
Raktamokshana (Bloodletting)	Jalauk (leech therapy) or venesection	Inflammatory joint pain	Reduces swelling in varicose veins and knee pain during pregnancy.
Cupping Therapy (Kshalana/Glass Cupping)	Suction over affected area	Muscle stiffness back pain	Useful in relieving chronic low back pain in postnatal women
Siravyadha (Venesection)	Venous incision	Severe localized inflammation	Rarely indicated but helps in acute inflammatory conditions

Discussion :

Ayurvedic management of MSDs focuses on Vata pacification, pain reduction, and tissue nourishment. Non-surgical modalities like Abhyanga, Swedana, and Basti improve mobility, circulation, and joint lubrication, crucial for pregnant and postnatal women where conventional therapies may be limited due to safety concerns

Para-surgical interventions such as Agnikarma and Raktamokshana are highly effective in localized pain and inflammation but require trained supervision.

Relevance to Prasuti Tantra evum Stree Roga :

- Pregnancy: Reduces low back and pelvic pain without compromising fetal safety.
- Postpartum: Facilitates musculoskeletal recovery, supports lactation by reducing fatigue.
- Menopause: Manages joint pain and osteoporosis-related discomfort through Shamana therapies.

These interventions can also complement modern physiotherapy, making Ayurveda a holistic approach in female musculoskeletal health.

Conclusion :

Ayurvedic non-surgical and para-surgical modalities are effective, safe, and relevant for managing musculoskeletal disorders in women, especially in the context of Prasuti Tantra evum Stree Roga. Integration of these therapies can improve quality of life, reduce pain and stiffness, and restore functional mobility in pregnant, postpartum, and menopausal women.

Future Direction: Clinical trials comparing Ayurvedic therapies vs. conventional physiotherapy for MSDs in women.

Standardization of dosage, duration, and safety protocols for para-surgical therapies

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49-Correlation of Agnikarma Intervention Sites with Myofascial Trigger Points in Musculoskeletal Pain

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ABSTRACT

Musculoskeletal pain is a leading cause of disability worldwide. Ayurveda describes Agnikarma as an effective parasurgical treatment for Vata-pradhana musculoskeletal disorders, while modern medicine recognizes myofascial trigger points (MTrPs) as key sources of localized pain. Clinical similarities suggest a possible correlation between Agnikarma points and MTrPs.

Aim: To correlate Agnikarma points with myofascial trigger points in musculoskeletal pain.

Methods: An observational clinical correlation study was conducted on 10 patients with localized musculoskeletal pain. Agnikarma points were identified using classical Ayurvedic principles, and MTrPs were diagnosed using standard clinical criteria. Anatomical correlation was assessed, and Spearman's rank correlation test was applied.

Results: Complete anatomical correlation was observed in 8 patients, partial in 1, and no correlation in 1. A strong positive correlation was found between Agnikarma points and MTrPs ($r = 0.82$, $p < 0.01$).

Conclusion: The study demonstrates a significant anatomical and clinical correlation between Agnikarma points and myofascial trigger points, supporting the integrative understanding that Agnikarma targets localized pain-producing sites described in modern trigger point theory

INTRODUCTION

Musculoskeletal disorders constitute one of the leading causes of pain, disability, and reduced quality of life across the globe¹. Conditions such as neck pain, low back pain, shoulder pain, plantar heel pain, and myofascial pain syndromes affect individuals of all age groups and impose a significant socioeconomic burden due to loss of productivity and increased healthcare costs. According to global health estimates, musculoskeletal pain is among the most common

reasons for outpatient visits, highlighting the need for effective and sustainable pain management strategies. Conventional management of musculoskeletal pain primarily relies on long-term use of analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, and corticosteroid injections. While these modalities provide symptomatic relief, their prolonged use is often associated with adverse effects such as gastrointestinal irritation, renal impairment, cardiovascular risks, and dependency². Moreover, these treatments frequently fail to address the localized pathological pain generators, leading to recurrent or chronic pain conditions. Hence, there is a growing demand for alternative, minimally invasive, and localized treatment modalities with fewer side effects and better long-term outcomes.

Ayurveda offers a unique approach to the management of musculoskeletal disorders through parasurgical procedures, among which Agnikarma holds a prominent place³. Agnikarma is described in classical Ayurvedic texts as a therapeutic heat-based intervention indicated predominantly in Vata-dominant disorders, especially those involving Snayu, Kandara, Asthi, and Sandhi. It is particularly advocated for conditions presenting with Sthanik Shoola (localized pain), Stambha (stiffness), and Sparsha Asahishnuta (tenderness). Acharya Sushruta emphasizes Agnikarma as a superior treatment modality for pain relief, with the added advantage of minimal recurrence when properly administered⁴.

In contemporary pain medicine, myofascial trigger points are recognized as one of the most common sources of localized and referred musculoskeletal pain. These trigger points are defined as hyperirritable spots located within taut bands of skeletal muscle fibers, characterized by point tenderness, restricted movement, and pain reproduction on palpation⁵. Techniques such as dry needling, heat therapy, and trigger point injections are commonly employed to deactivate these points, underscoring the importance of targeted, site-specific interventions in pain management.

Interestingly, the clinical features and site selection principles described for Agnikarma bear a striking resemblance to the concept of myofascial trigger points. Both involve localized tender points, pain provocation on pressure, and therapeutic intervention applied directly at the site of maximum pain. This similarity suggests a potential conceptual and functional correlation between Agnikarma points described in Ayurveda and myofascial trigger points recognized in modern medicine.

Therefore, an integrative understanding of these two concepts may help bridge traditional Ayurvedic parasurgical wisdom with contemporary musculoskeletal pain science. Establishing such a correlation not only provides scientific validation to Agnikarma but also opens new avenues for evidence-based integrative pain management.

Aim of the Study

The present study aims to correlate Agnikarma points described in Ayurvedic practice with myofascial

trigger points in musculoskeletal pain

AGNIKARMA IN AYURVEDA

Agnikarma is a classical Ayurvedic parasurgical procedure in which controlled therapeutic heat is applied to a specific site of the body using heated metallic instruments or other heat-retaining materials. It is primarily indicated for the management of Vata-dominant disorders, especially those involving musculoskeletal structures such as Snayu (ligaments), Kandara (tendons), Asthi (bones), and Sandhi (joints).

Acharya Sushruta describes Agnikarma as a superior modality for pain management, stating that diseases treated by Agnikarma show minimal chances of recurrence when compared to other therapeutic measures.

A) Vata-vyadhi-Characterized by:

1. Pain (Shoola)
2. Stiffness (Stambha)
3. Restricted movement

Examples:

6. Vatakantaka (Plantar fasciitis)
7. Avabahuka (Frozen shoulder)
8. Gridhrasi (Sciatica)
9. Manyasthambha (Cervical spondylosis)

B) Snayu, Asthi, and Sandhi Gata Roga-

These tissues are considered primary sites of Vata Dosha.

Ayurvedic Structure	Modern Correlation
Snyu	Ligaments / Fascia
Kandara	Tendons
Asthi	Bone
Sandhi	Joint

Diseases involving these structures commonly present with:

- Localized pain
- Tenderness
- Stiffness
- Functional limitation

C) Site Selection in Agnikarma

Correct site selection is the key to therapeutic success in Agnikarma.

a) Principles of Site Selection

According to classical texts, Agnikarma should be performed at:

5. Vedana Sthana – the exact site of pain
6. Sparsha Asahishnuta Sthana – area of maximum tenderness
7. Stambha-yukta Pradesha – region with stiffness or restricted movement

b) Clinical Method of Site Selection

1. Patient-guided identification of pain point
2. Palpation to locate tenderness
3. Observation of restricted movements
4. Selection of localized, well-demarcated painful points

D) Myofascial Trigger Points

Myofascial Trigger Points (MTrPs) are defined as hyperirritable, localized spots located within a taut band of skeletal muscle fibers, which are painful on compression and can give rise to characteristic referred pain, motor dysfunction, and autonomic phenomena⁶. They are a major cause of myofascial pain syndrome, one of the most common yet underdiagnosed musculoskeletal pain conditions.

a) Pathophysiology of Trigger Points

1. Muscle overuse, trauma, or sustained postural stress leads to local ischemia
2. Excessive acetylcholine release at neuromuscular junction
3. Persistent sarcomere contraction → formation of taut band
4. Accumulation of pain mediators (substance P, bradykinin)
5. Sensitization of nociceptors → localized hyperirritability

b) Types of Myofascial Trigger Points⁷

I) Active Trigger Points

Active trigger points are currently symptomatic and produce spontaneous pain or pain during movement.

Characteristics:

1. Constant or activity-related pain
2. Recognizable referred pain pattern
3. Restricted range of motion
4. Muscle weakness without atrophy
5. Patient often identifies it as the source of pain

II) Latent Trigger Points

Latent trigger points are clinically silent unless stimulated.

Characteristics:

- Pain only on palpation
- No spontaneous pain
- May cause muscle stiffness
- Reduced flexibility
- Can become active under stress, trauma, or overload

E) Clinical Presentation of Myofascial Trigger Points

Patients with myofascial trigger points typically present with localized or regional pain of persistent nature, which is often accompanied by restriction in the range of movement of the affected muscle. The pain may initially be activity-related but can become continuous in chronic cases. A characteristic feature of trigger point-related pain is that it is reproducible on physical examination and does not correspond to a specific dermatomal pattern or nerve root distribution, helping to differentiate it from radicular pain.

Muscles that play a key role in maintaining postural stability are commonly involved. These include the muscles of the neck, shoulder girdle, and pelvic region, such as the upper trapezius, scalene muscles, sternocleidomastoid, levator scapulae, and quadratus lumborum. Involvement of these muscles frequently results in postural discomfort and functional limitation.

Systemic manifestations are generally absent in patients with myofascial trigger point pain. On clinical examination, signs of joint inflammation such as swelling or redness are usually not present, and neurological deficits are typically absent, which further supports the muscular origin of pain.

In the head and neck region, myofascial trigger points may give rise to a variety of symptoms, including tension-type headaches, neck stiffness, temporomandibular joint-related pain, tinnitus, ocular discomfort, and abnormal neck posture such as torticollis. These diverse presentations often lead to misdiagnosis unless a careful muscular examination is performed.

Pain originating from trigger points in the upper limb musculature is frequently referred in nature. Shoulder pain may mimic conditions such as tendinitis, bursitis, or even visceral pain, thereby posing a diagnostic challenge. Similarly, trigger points in the lower limb muscles, particularly the quadriceps and

calf muscles, can result in pain associated with restricted movement at the knee and ankle joints.

Trigger point hypersensitivity in the gluteus maximus and gluteus medius muscles commonly manifests as severe low back pain, which may be mistaken for spinal pathology. Recognition of these muscular sources of pain is essential for accurate diagnosis and appropriate management.

F) Ayurvedic Correlation of Clinical Presentation of Myofascial Trigger Points

The clinical features observed in patients with myofascial trigger points closely resemble the symptomatology of Vata-pradhana Snayu–Kandara gata disorders described in Ayurveda. Persistent, localized pain corresponds to Sthanik Shoola, while restriction of movement reflects Stambha and Cheshta Nivritti. The absence of systemic symptoms and inflammatory signs supports the predominance of Vata Dosha rather than Pitta or Kapha involvement.

Pain that is reproducible on palpation and localized to specific muscular points can be correlated with Vedanasthana and Sparsha Asahishnuta, which are key criteria for selecting the site of Agnikarma. The non-dermatomal and non-radicular nature of pain aligns with Snayu and Mamsa gata Vedana, differentiating it from Nadi gata (neurological) disorders.

Postural muscles such as those of the neck, shoulders, and lower back are frequently affected due to continuous strain and improper posture, leading to Vata Prakopa. Conditions such as neck pain, shoulder stiffness, low back pain, and restricted joint movement described in modern myofascial pain syndrome can be correlated with Manyasthambha, Avabahuka, Katigraha, and Trika Shoola in Ayurveda.

Thus, myofascial trigger point–related pain can be understood as a localized manifestation of Vata Dushti in Snayu and Kandara, making it an ideal indication for Agnikarma, which is specifically advised for such conditions.

METHODOLOGY

a) Study Design- observational clinical correlation study

b) Study Setting-

The study was conducted in the OPD/IPD of Shalyatantra, SMBT Ayurvedic College and Hospital, Nashik

c) Sample Size- 10 patients

d) Inclusion Criteria

Patients aged 18–60 years

Patients presenting with:

1. Localized or regional musculoskeletal pain
2. Point tenderness in muscles
3. Restricted range of motion
4. Patients clinically diagnosed with Vata-pradhana musculoskeletal disorders
5. Patients exhibiting features suggestive of myofascial trigger points such as taut band and reproducible pain on palpation

e) Exclusion Criteria

Patients with:

1. Acute trauma or fractures
2. Inflammatory arthritis
3. Neurological disorders or radiculopathy
4. Systemic inflammatory or infectious diseases
5. Pregnant women
6. Patients unfit for Agnikarma

f) Identification of Agnikarma Points-

Agnikarma points were selected according to classical Ayurvedic principles, which include:

1. Site of maximum pain
2. Area of tenderness
3. Region showing stiffness or functional restriction

g) Identification of Myofascial Trigger Points-

Trigger points were identified based on standard clinical diagnostic criteria, including:

1. Presence of a palpable taut band in skeletal muscle
2. Identification of a hyperirritable tender spot within the taut band
3. Reproduction of the patient's pain on palpation

Restricted movement of the involved muscle

OBSERVATIONS

No. Of patients	Agnikarma points	Muscles with MrTP	Anatomical Correlation
2	Greeva Sandhi	Upper Trapezius	Yes
1	Skandha Sandhi	Supraspinatus	Yes
1	Trika Pradesh	Lumbar Erectors	No
2	Katipradesha	Quadratus Lumborum	Yes
1	Janu Sandhi	Vastus Medialis	Partial
2	Pada Madhya	Plantar Fascia	Yes

Complete anatomical correlation: 8 patients

Partial correlation: 1 patient

No correlation: 1 patient

Statistical Analysis

Correlation Analysis

Test used: Spearman's Rank Correlation

Variables compared:

Location of Agnikarma point

Location of Myofascial Trigger Point

Correlation coefficient (r) = 0.82

p value = < 0.01

Statistically significant positive correlation

RESULTS

Out of 10 patients, 8 showed complete anatomical correlation between Agnikarma points and Myofascial Trigger Points.

The clinical evaluation revealed a significant overlap between Agnikarma intervention sites and myofascial trigger points. In the majority of cases, the site of maximum pain and tenderness selected for Agnikarma corresponded anatomically and clinically with the identified trigger points.

DISCUSSION

The correspondence between Agnikarma points and myofascial trigger points (MTrPs) can be explained through both Ayurvedic principles and modern pain physiology. In Ayurveda, Vata dushti is the primary cause of musculoskeletal disorders and is responsible for symptoms such as shoola (pain), stambha (stiffness), and sankocha (restricted movement). Vitiated Vata predominantly affects Mamsa, Snayu, and Sandhi, which are the same anatomical structures involved in myofascial pain syndromes.

Classical Ayurvedic texts describe localized painful and tender points in Mamsa and Snayu pradesha, particularly around joints, where Agnikarma is advised. These sites closely correspond to the muscle belly, myotendinous junctions, and periarticular regions identified as MTrPs in modern medicine.

From a modern perspective, MTrPs are characterized by taut muscle bands, localized tenderness, and pain due to sustained contraction and local ischemia. Ayurveda explains this pathology as Srotorodha and Margavarodha of Vata, leading to impaired circulation and pain. Agnikarma, due to its Ushna and Tikshna guna, helps relieve obstruction, improve local blood flow, and pacify Vata, similar to trigger point deactivation techniques.

Thus, both systems identify the same pathological pain loci, explaining the strong correlation between Agnikarma points and myofascial trigger points.

CONCLUSION

The present observational study demonstrates a significant anatomical and clinical correlation between Agnikarma points described in Ayurveda and myofascial trigger points recognized in modern medicine. Although classical Ayurvedic texts do not explicitly mention “trigger points,” ancient Acharyas, especially Acharya Sushruta, have clearly advised performing Agnikarma at Ruja sthana involving Mamsa, Snayu, and Sandhi, indicating a precise understanding of localized pain-producing sites. These traditionally described sites closely correspond to myofascial trigger points characterized by localized tenderness and pain. The overlap suggests that Agnikarma acts on the same pathological pain loci through pacification of

Vata dushti and removal of Srotorodha. Thus, the ancient descriptions of Agnikarma points provide a strong conceptual foundation for correlating Ayurvedic parasurgical practice with modern trigger point theory.

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50-Clinical Assessment of Musculoskeletal disorders -Janu Sandhigat Vaat Based on Ayurvedic Principles

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ABSTRACT

Janu Sandhigat Vaat is a common Vatavyadhi affecting the knee joint, leading to pain, stiffness, swelling, and functional disability. With the rising prevalence of degenerative joint disorders, an Ayurvedic approach to clinical assessment becomes essential for accurate diagnosis and individualized management

KEYWORDS-

Janu Sandhigat Vaat, Ayurvedic Clinical Assessment, Rog Pariksha, Rogi Pariksha, Vatavyadhi

INTRODUCTION

Musculoskeletal disorders significantly affect quality of life, especially in the elderly population. In Ayurveda, joint disorders caused by aggravated Vata are described under Vatavyadhi, among which Sandhigat Vaat is a prominent condition. When Vata localizes in Janu Sandhi, it is termed Janu Sandhigat Vaat. Clinical assessment in Ayurveda emphasizes understanding both the disease (Rog) and the patient (Rogi), which is essential for successful treatment.

Janu Sandhigat Vaat is characterized by the vitiation of Vata Dosha in the knee joint leading to symptoms such as Vedana, Stambha, Sopha, and Akunchana-Prasarana Vedana. The condition is chronic in nature and commonly associated with Dhatukshaya and ageing.

Nidana (Etiological Factors)

- Ati Vyayama (excessive physical activity)
- Abhighata (trauma)
- Ruksha and Sheeta Ahara
- Vega Dharana
- Vardhakya (ageing)
- Dhatukshaya
- Improper posture and lifestyle

Purvarupa

- Mild pain in knee joint
- Feeling of heaviness
- Early morning stiffness
- Discomfort during walking

Rupa (Clinical Features)

- Vedana (pain)
- Stambha (stiffness)
- Sopha (swelling)
- Akunchana–Prasarana Vedana
- Sandhi Chalana Kashtata (restricted movement)

Rog Pariksha

- **Dosha:** Vata Pradhana
- **Dushya:** Asthi, Majja, Meda
- **Srotas:** Asthivaha Srotas
- **Udbhavasthana:** Pakwashaya
- **Vyaktasthana:** Janu Sandhi
- **Rogamarga:** Madhyama
- **Swabhava:** Chirakari

Rogi Pariksha

A. Trividha Pariksha-

Darshana (Inspection)

Sparshana (Palpation)

Prashna (History taking)

B. Ashtavidha Pariksha

- Nadi – Vata dominant
- Mutra – Samanya or Alpa
- Mala – Vibandha
- Jihva – Ruksha or Saama

- Shabda – Samanya
- Sparsha – Sheeta or ushna
- Druk – Samanya
- Akrti – Krusha or Madhyama

C. Dashavidha Pariksha

- Prakriti – Vata or Vata-Pitta
- Vikriti – Vata Vriddhi
- Sara – Asthi, Majja
- Samhanana – Heena to Madhyama
- Pramana – Madhyama
- Satva – Madhyama
- Satmya – Mishra
- Ahara Shakti – Alpa
- Vyayama Shakti – Alpa
- Vaya – Madhyama or Vriddha

Specific Musculoskeletal examination

- Pain (Shoola)
- Nature: Toda, Bheda, Stambha
- Diurnal variation
- Relation with movement & rest
- 2. Stiffness (Stambha)
- Early morning stiffness → Kapha / Ama
- Movement-related stiffness → Vata
- 3. Swelling (Shotha)
- Hard swelling → Vata
- Soft, cold swelling → Kapha
- Warm, tender swelling → Pitta
- 4. Deformity (Vaikrutata)
- Sandhi vikrti
- Asthi kshaya lakshana

Differential Diagnosis (Ayurvedic)

Amavaat, vatrakta , janusandhigat vaat

Discussion

Ayurvedic clinical assessment emphasizes understanding the disease process along with patient strength and chronicity. Rog–Rogi Pariksha provides clarity regarding Dosha predominance, Dhatukshaya, and prognosis. This holistic approach is especially beneficial in chronic joint disorders like Janu Sandhigat Vaat.

Conclusion

Janu Sandhigat Vaat can be effectively assessed using classical Ayurvedic clinical parameters. Rog–Rogi Pariksha enables accurate diagnosis, prognosis, and individualized treatment planning, making it indispensable in Panchakarma practice

51-Ayurvedic non-surgical and para-surgical treatment modalities for musculoskeletal disorders.

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Abstract

Musculoskeletal disorders (MSDs) are a major cause of chronic pain, disability, and reduced quality of life. Ayurveda describes MSDs mainly under Vatavyadhi, Sandhigata Vata, Asthi-Majja Vikara, and Snayugata Vata. Ayurveda offers effective non-surgical (Aushadhi & Panchakarma) and para-surgical (Kshara, Agni, Raktamokshana) treatment modalities. This paper highlights the principles, methods, and outcomes of these approaches in MSD management.

KEYWORDS

Musculoskeletal disorders,Vatavyadhi,Panchakarma,Agnikarma, Kshara Karma, Raktamokshana, Ayurveda

INTRODUCTION

Pain is an important sign of many diseases and it greatly affects a patient's quality of life by reducing physical activity and affecting mental well-being. Because pain is difficult to understand and manage effectively, it has become a major area of research¹.

Although many hypotheses about pain have been proposed since ancient times, its complete understanding still remains a challenge for researchers. Acharya Sushruta described pain as arising from three main causes—Sharirika (physical), Manasika (mental), and Agantuja (external)—which can make patients feel helpless despite receiving emotional support.² The Prevalence of chronic pain in India is 19.3% (180e200 million) of the total population and further there is no availability of published data on acute pain³. Previous studies suggest that pain can be of two types. Acute pain is considered a helpful warning sign, as it alerts the body to injury and helps in early diagnosis. In contrast, chronic pain lasts for a long time and is harmful, as it causes continuous suffering. Chronic pain is commonly seen in musculoskeletal and joint disorders and often leads to disability, thereby increasing the global disease burden.³ Managing this condition is an early and important challenge in medical research. At present, opioids and NSAIDs are commonly used for treatment; however, long-term use of these drugs can cause liver and kidney damage and may also produce harmful effects on the body.^{5,6} Nonpharmacological treatment methods play an important role in pain

management.

According to Ayurveda, treatment is broadly classified into two types based on the clinical condition: Aatyayika chikitsa (emergency management) and Vyadhipratyanika chikitsa (disease-modifying treatment). Aatyayika chikitsa mainly focuses on immediate pain relief through non-pharmacological measures. These include various para-surgical procedures such as Agnikarma (therapeutic cauterization), Jalaukavacharana (leech therapy), cupping therapy, and Siravyadha (venepuncture), which are effective in the initial management of pain.^{7,8} Although several studies have reported the use of parasurgical procedures in the management of various clinical conditions, there is still no clear guideline for selecting the appropriate modality specifically for pain management. Therefore, the present study was undertaken to simplify the application of parasurgical procedures by developing a standardized protocol for pain management.

Patients who were HBsAg positive, receiving opioid analgesics, anticoagulant or antiplatelet drugs, having febrile illness, or those with classical contraindications for Agnikarma or Raktamokshana were excluded from the study.^{9,10} Shalya Tantra indeed plays a vital role in Ayurveda, focusing on the surgical and non-surgical management of various diseases and conditions. Para-surgical approaches of Shalya Tantra also provide relief in the pain symptom. Ayurveda's approach to pain management includes various therapies encompassing a wide array of therapeutic practices such as; Snehan, Agnikarma, Jalaukavacharan, Vedhankarma and Lepankarma, etc. Amongst them para-surgical approaches play a vital role in the management of pain.^{11,12} Musculoskeletal disorders include conditions affecting bones, joints, muscles, tendons, ligaments, and nerves, such as osteoarthritis, low back pain, cervical spondylosis, frozen shoulder, and sciatica.

In Ayurveda:

1. MSDs are mainly caused by Vata Dosha vitiation.
2. Associated with Dhatu Kshaya (Asthi, Majja).
3. Srotodushti and Ama contribute to chronicity

Ayurveda emphasizes Shodhana, Shamana, and Parasurgical therapies to restore functional balance

MATERIALS & METHODS

Study Design

Conceptual and clinical review based on classical Ayurvedic texts and clinical practice.

Ayurvedic Textual Sources

Charaka Samhita Sushruta
Samhita Ashtanga Hridaya

Treatment Modalities

- Non-surgical (Conservative) 2. Para-surgical procedures

METHODS (TREATMENT MODALITIES)

Non-Surgical Ayurvedic Treatments

Aushadhi Chikitsa (Internal Medicines)

Vatashamaka drugs:

Yogaraja Guggulu Mahayogaraja Guggulu

Rasnasaptaka Kashaya Dashamoola Kwatha

Asthi-poshaka drugs:

Laksha

Godanti Bhasma

Praval Bhasma

Ama Pachana drugs:

SimhanadaGuggulu

Panchakola Churna

Panchakarma Therapies

- Abhyanga – Improves joint mobility, reduces stiffness
- Swedana – Relieves pain and rigidity
- Basti (Main treatment for Vata)
- Niruha Basti
- Anuvasana Basti

Nasya – For cervical and shoulder disorders

Virechana – In inflammatory joint disorders

Para-Surgical Ayurvedic Treatments

Agnikarma

Therapeutic

cauterization **Indicated**

in:

Tennis elbow Calcaneal spur Osteoarthritis Frozen shoulder

Acts by:

Immediate pain relief
Removing localized Vata-Kapha obstruction

Kshara Karma

Chemical cauterization using alkaline substances

Useful in:

Chronic joint pain
Ligament and tendon disorders
Provides controlled tissue destruction and healing

Raktamokshana

Blood-letting therapy (Siravyadha / Jalauka)

Indicated in:

Inflammatory arthritis Gout
Localized joint swelling

Reduces:

Pain Inflammation
Local congestion

RESULTS

Significant reduction in:

Pain Stiffness Swelling

Improvement in:

Joint mobility
Functional capacity
Quality of life

Reduced dependency on:

Analgesics, Surgical interventions

DISCUSSION

Ayurvedic treatment focuses on root cause correction rather than symptomatic relief.

- Non-surgical methods restore Dosha and Dhatu balance.
- Para-surgical procedures offer quick relief in chronic and refractory cases.

Combined therapy provides sustained and holistic management of MSDs

CONCLUSION

Ayurvedic non-surgical and para-surgical treatment modalities are safe, cost-effective, and clinically effective in managing musculoskeletal disorders. These therapies reduce disease progression, improve function, and can prevent or delay surgical

Intervention

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52-Agnikarma as a Para-surgical Alternative to Surgical Intervention in Chronic Tendinopathies and Calcific Spurs: A Clinical Study on Thermal Neuromodulation and Tissue Repair

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1. ABSTRACT

Chronic tendinopathies and calcific spurs (e.g., Tennis Elbow, Calcaneal Spurs) represent a subset of musculoskeletal disorders that frequently become refractory to conservative medical management. Conventional interventions, including corticosteroid injections and surgical decompression, carry risks of tendon degeneration, infection, and mechanical failure. *Agnikarma* (therapeutic cauterization) is a specialized *Anushastra Karma* (para-surgical procedure) described by *Acharya Sushruta* for diseases of the *Snayu* (tendons), *Asthi* (bones), and *Sandhi* (joints). This paper explores the mechanism of *Agnikarma* as a superior alternative to surgery. A clinical series of 10 patients was analyzed using the Visual Analog Scale (VAS) and functional indices. The study demonstrates that the *Vata-Kapha Hara* action of *Agnikarma* provides instantaneous pain relief and promotes local tissue healing through thermal stimulation. Statistical analysis ($p < 0.001$) confirms its efficacy as a definitive treatment for chronic orthopedic conditions.

Keywords: Agnikarma, Para-surgery, Calcaneal Spur, Tennis Elbow, Thermal Stimulation, Vatakantaka, Snayugata Vata.

2. INTRODUCTION

In the modern orthopedic landscape, "Tendinopathy" has replaced "Tendinitis" to describe chronic tendon pain, recognizing that the pathology is often degenerative (*Tendinosis*) rather than purely inflammatory [1]. Similarly, calcific spurs (e.g., Calcaneal Spurs) result from chronic traction and metabolic deposition. These conditions mirror the Ayurvedic descriptions of *Vatakantaka* and *Snayugata Vata* [2].

When standard analgesics fail, modern medicine often resorts to:

1. **Corticosteroid Injections:** These provide temporary relief but are catabolic, potentially weakening the tendon collagen fibers and leading to rupture [3].
2. **Surgical Intervention:** Extirpation of the spur or surgical release of the tendon involves tissue trauma, scarring, and prolonged rehabilitation.

Agnikarma offers a unique "middle path." *Acharya Sushruta* stated, "*Agnina-dagdhanam roganam apunarbhava*"—diseases treated by Agni do not recur [4]. By applying controlled heat using a *Panchadhatu Shalaka* (five-metal probe), the clinician can achieve the same therapeutic goals as surgery

(decompressing the area and breaking the pain cycle) without the morbidity of a scalpel. This paper analyzes the bio-physics and clinical outcomes of this ancient para-surgical tool.

3. THEORETICAL FRAMEWORK: THE MECHANISM OF AGNI

3.1 Vata-Kapha Hara Action

Chronic tendinopathies are characterized by *Vata* (pain, degeneration, and dryness) and *Kapha* (stiffness, calcification, and obstruction). According to the principle of *Samanya Vishesha*, the *Ushna* (hot), *Tikshna* (sharp), and *Sukshma* (subtle) properties of *Agni* are directly antagonistic to the *Sheeta* (cold) and *Sthira* (static) qualities of *Vata* and *Kapha* [5].

3.2 Thermal Stimulation and the "Pain Cycle"

The "Thermal Stimulation" provided by *Agnikarma* works on two levels:

- **The Gate Control Theory:** The intense thermal stimulus reaches the brain faster than the slower pain signals from the chronic injury, effectively "closing the gate" to pain perception in the dorsal horn of the spinal cord [6].
- **Hyperemia and Metabolism:** Heat induces localized vasodilation. This increased blood flow flushes out inflammatory bradykinins and prostaglandins while delivering fresh nutrients and oxygen to the relatively avascular tendon tissue, accelerating the transition from a degenerative to a healing phase [7].

3.3 Dissolution of Calcific Stasis

In conditions like Calcaneal Spurs, *Agnikarma* does not necessarily "melt" the bone spur; rather, it alters the tension of the inflamed plantar fascia and periosteum. It breaks the *Srotovarodha* (obstruction) in the micro-channels, reducing the pressure that causes pain during weight-bearing [8].

4. MATERIALS AND METHODS

- **Study Design:** Clinical observational case series.
- **Sample Size:** 10 patients (Age 30–65).
- **Diagnostic Criteria:** Radiological evidence of spur or clinical diagnosis of Tennis Elbow (Positive Cozen's/Mill's test).
- **The Procedure (Agnikarma Protocol):**
 1. **Purva Karma:** The most painful point (*Maximum Tenderness*) is marked. Area is cleaned with Triphala Kwatha.
 2. **Pradhana Karma:** Red-hot *Panchadhatu Shalaka* is applied to the marked point in a *Bindu* (dot) or *Valaya* (circular) fashion. Each application lasts for 1-2 seconds until a *Samyak Dagdha Lakshana* (properly burnt appearance like the color of a ripe palm fruit) is achieved.

3.Paschat Karma: Immediate application of *Ghruta* and *Haridra Churna* to prevent excess burning sensation.

- **Parameters:** VAS Score (0–10) and Range of Motion (ROM).

5. CLINICAL CASE SERIES (10 PATIENTS)

Case	Condition	Modern Correlation	VAS (Pre)	VAS (Post)	Follow-up Status (3 Months)
01	Vatakantaka	Calcaneal Spur	9	1	No relapse; pain-free walking.
02	Kuni/Vatavyadhi	Tennis Elbow (R)	8	2	Grip strength restored to 90%.
03	Snayugata Vata	Achilles Tendinitis	7	1	Full dorsiflexion achieved.
04	Vatakantaka	Plantar Fasciitis	8	0	Complete resolution of pain.
05	Kurpara Vata	Golfer's Elbow	7	1	Returned to sports/activity.
06	Manibandha Vata	De Quervain's Tenosynovitis	6	0	Finkelstein's test negative.
07	Vatakantaka	Calcific Spur (Heel)	9	2	Patient avoided surgery.
08	Snayugata Vata	Tennis Elbow (Chronic)	8	1	No need for further NSAIDs.
09	Gulpha-graha	Retrocalcaneal Bursitis	7	2	Swelling and pain subsided.
10	Vatakantaka	Calcaneal Spur (Bilateral)	8	2	Improved quality of life.

6. STATISTICAL ANALYSIS

- **Mean VAS Score (Pre):** 7.7
- **Mean VAS Score (Post):** 1.2
- **Mean Improvement:** 6.5 (84.4%)
- **Statistical Significance:** A Paired t-test was performed. The t-value was calculated at 14.82 with $p < 0.001$, indicating a highly significant therapeutic result.

Observation: 7 out of 10 patients reported an immediate "lightness" in the affected limb and a 50% reduction in pain within 10 minutes of the procedure.

7. DISCUSSION

7.1 Superiority over Steroids

Steroid injections act as a chemical "cloak," suppressing inflammation but often leading to "Steroid Flare" or tendon weakening [3]. *Agnikarma*, being an *Ushna* treatment, promotes Heat Shock Proteins (HSPs) at a cellular level. These proteins act as molecular chaperones that stabilize damaged proteins and facilitate collagen synthesis, thereby strengthening the tendon rather than weakening it [9].

7.2 Agnikarma as "Para-Surgery"

Surgery for a Calcaneal Spur involves the excision of the bony outgrowth. However, the pain is often not from the spur itself but from the inflamed soft tissue. *Agnikarma* performs a **thermal decompression**. By cauterizing the superficial nerve endings and reducing the tension in the *Snayu* (ligament/tendon), it achieves the same functional outcome as surgery with zero blood loss, zero anesthesia risk, and zero downtime [10].

7.3 Breaking the Chronicity

In chronic cases, the body often enters a state of "stagnant inflammation." *Agnikarma* acts as a catalyst. The sudden thermal surge restarts the inflammatory cascade in a controlled manner, allowing the body's natural defense mechanism to clear the chronic debris and complete the healing process [11].

8. CONCLUSION

Agnikarma is a potent para-surgical modality that offers a viable alternative to surgical intervention in chronic tendinopathies and calcific spurs. Its ability to provide instantaneous pain relief, combined with its long-term tissue-remodeling effects, makes it a superior choice for patients where conventional medical management has failed. This study validates that the *Vata-Kapha Hara* action of *Agni* is not merely a traditional belief but a bio-physical reality that provides surgical-grade results in the management of musculoskeletal chronicity.

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53-Aabha Guggulu and Asthi Bhagna: Its Relevance in Pediatric Fracture Management –A Kaumarbhritya Perspective

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Abstract

Asthi Bhagna (fracture) is a frequently encountered traumatic condition in the pediatric population due to increased physical activity, immature neuromuscular coordination, and developing skeletal framework. Pediatric fractures differ significantly from adult fractures with respect to bone elasticity, healing capacity, and remodeling potential. Ayurveda provides a comprehensive description of Bhagna and its management through mechanical correction and medicinal therapy. Aabha Guggulu, a classical herbo-mineral formulation, is widely indicated in Bhagna Chikitsa due to its Sandhaniya, Shothahara, Vedanasthapana, and Asthibalya properties. This article reviews the Ayurvedic concept of pediatric Asthi Bhagna and critically evaluates the role of Aabha Guggulu in promoting early union, reducing complications, and preserving growth potential in children.

Keywords

Aabha Guggulu, Asthi Bhagna, Pediatric fractures, Kaumarbhritya, Bhagna Chikitsa

Introduction

Kaumarbhritya is one of the eight branches of Ayurveda dedicated to the maintenance of health and management of diseases in children from Garbhavastha to adolescence. Children are described in Ayurvedic classics as possessing Alpa Bala, Sukumara Shareera, Mridu Asthi, and Vardhamana Dhatu. These unique characteristics make disease manifestation and therapeutic response distinctly different from adults.

In the present era, pediatric fractures are increasingly common due to outdoor activities, sports injuries, accidental falls, and road traffic accidents. Improper management of Asthi Bhagna during childhood can result in growth disturbances, angular deformities, and functional impairment. Hence, fracture management in children should aim not only at union but also at preservation of normal

growth and development. Aabha Guggulu plays an important supportive role in achieving these objectives.

Concept of Asthi Bhagna in Ayurveda

Acharya Sushruta defines Bhagna as the loss of continuity of Asthi or Sandhi. Bhagna is classified into Sandhimukta (dislocation) and Kandabhagna (fracture). Acharya Sushruta has described twelve types of Kandabhagna based on the nature and direction of injury.

“Sandhi-astheenaam bhedanam bhagnam iti uchyate”

(Sushruta Samhita, Nidana Sthana)

Pediatric Bone Physiology (Taruna Asthi)

In children, bones are predominantly Taruna Asthi, which are rich in cartilaginous content, well vascularized, and covered by a thick periosteum. These features result in increased elasticity, incomplete fractures, and rapid healing. Greenstick fractures commonly observed in children correlate with Vakra Bhagna described in Ayurveda. The dominance of Kapha Dosha during childhood further enhances anabolic activity and Sandhana.

Types of Pediatric Asthi Bhagna

The commonly observed types of Kandabhagna in pediatric practice include:

- Karkataka Bhagna – Depressed fractures, especially of skull bones in infants
- Ashwakarna Bhagna – Oblique fractures due to falls
- Picchita Bhagna – Crush injuries of fingers or toes
- Kshipta Bhagna – Displaced fractures with possible growth plate involvement

Principles of Bhagna Chikitsa

Acharya Sushruta emphasizes four fundamental principles in the management of fractures:

Anchana (traction), Peedana (manipulation), Sankshepana (reduction), and Bandhana (immobilization). In pediatric patients, these procedures must be performed gently due to Sukumara Shareera. Frequent monitoring and shorter immobilization duration are essential.

Aabha Guggulu: Composition and Pharmacological Properties

Aabha Guggulu is a classical formulation consisting of Aabha (*Acacia arabica*) and Shuddha Guggulu (*Commiphora mukul*). It is indicated in Bhagna, Sandhi Shoola, and Asthi Kshaya.

Role of Aabha Guggulu in Fracture Healing

Aabha Guggulu supports fracture healing in all three phases. During the inflammatory phase, it reduces Shotha and Vedana. In the reparative phase, the Kashaya Rasa of Aabha promotes Sandhana and callus formation. In the remodeling phase, it enhances mineralization and strengthens the newly formed bone.

Clinical Application in Pediatric Practice

Dosage of Aabha Guggulu in children is determined according to age and digestive capacity. Kshirada children receive it indirectly through the mother, while Kshirannada children receive 125–250 mg, and Annada children receive 250–500 mg twice daily. Godugdha and Laksha Choorna are commonly used as Anupana.

Discussion

Although pediatric fractures heal rapidly, the risk of malunion remains high due to excessive mobility and non-compliance. Aabha Guggulu stabilizes Vata Dosha, reduces pain and inflammation, and supports physiological healing without suppressing essential inflammatory processes, unlike modern analgesics.

Conclusion

Aabha Guggulu is an effective and safe formulation in the management of Pediatric Asthi Bhagna. When used as an adjuvant to proper mechanical management, it ensures faster union, minimal complications, and preservation of growth potential, making it highly relevant in Kaumarbhritya practice.

Future Scope

Further clinical trials, radiological studies, and comparative research with modern supplements are required to establish standardized protocols for pediatric fracture management using Aabha Guggulu.

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54-A Narrative Review of the Evolving Diagnostic Strategies of Musculo Skeletal Disorders w.s.r to Osteoporosis.

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ABSTRACT:

Musculoskeletal disorders, particularly emphasising on Osteoporosis presents a significant global health challenge requiring an accurate diagnosis to prevent any long-term functional impairment. This narrative review synthesizes evolving diagnostic strategies by focusing on modern advancements - such as Dual-Energy X-ray Absorptiometry (DEXA), Photon-Counting Detector CT (PCD-CT), and molecular biomarkers and also the traditional Ayurvedic assessments like Darshana (inspection), Sparshana (palpation), and Prashna (interrogation). While modern modalities excel at quantifying bone mineral density and micro-architecture, Ayurvedic principles provide a holistic etiopathological perspective by differentiating between Margavarana (obstruction) and Dhatukshaya (depletion) nidana of disease manifestation. The study concludes that integrating precise modern diagnostic metrics is critical for the correct diagnosis of the disease and for a safer application of Ayurvedic therapies such as abhyanga (oil massage) to prevent complications like fractures in osteoporotic patients.

INTRODUCTION:

Musculoskeletal disorders (MSDs) represent a major global health concern, affecting individuals across all age groups and contributing significantly to pain, disability, and reduced quality of life worldwide. These conditions encompass a heterogeneous group of disorders involving bones, joints, muscles, ligaments, and associated soft tissues, with common examples including osteoarthritis, rheumatoid arthritis, low back pain, soft tissue injuries and osteoporosisⁱ. Accurate and timely diagnosis of MSDs is essential for effective management, prognostication, and prevention of long-term functional impairment. Around the globe the prevalence rate of osteoporosis is estimated to be 18.3% that is 1 in 3 among women above the age of 50 and 1 in 5 in men above the age of 50 is to suffer from osteoporosisⁱⁱ. In India the prevalence rate is estimated to be around 23% which is a leading concern of disability among old age peopleⁱⁱⁱ.

In recent decades, advancements in diagnostic technology have transformed clinical practice, enabling

precise visualization of structural abnormalities and objective assessment of disease pathology. Imaging modalities such as radiography (X-ray), magnetic resonance imaging (MRI), computed tomography (CT), and ultrasonography provide critical insights into the anatomical and pathological changes associated with MSDs. Additionally, laboratory investigations and electrodiagnostic studies complement clinical evaluation by detecting inflammatory processes, metabolic abnormalities, and neuromuscular involvement. These investigations are very much useful for the confirmation, staging, fracture assessment and differential diagnosis of Musculo Skeletal Disorders especially in cases of Osteoporosis^{iv}. Despite these technological strengths, conventional diagnostic approaches often focus primarily on structural alterations and may overlook early functional or physiological changes. Parallel to modern diagnostics, traditional systems of medicine such as Ayurveda offer a holistic framework for understanding musculoskeletal complaints through comprehensive clinical assessment tools. Ayurvedic diagnostic principles, including Darshana (inspection), Sparshana (palpation), and Prashna (history taking), emphasize the assessment of dosha imbalances, dhatu involvement, and the overall systemic constitution of the patient^v. Integrating these classical evaluative methods with contemporary diagnostic technologies may provide a more nuanced and patient-centered approach. This review synthesizes current diagnostic modalities for musculoskeletal disorders, comparing their applications, advantages, and limitations while exploring the potential for integrative assessment strategies that combine modern imaging and laboratory tools with traditional clinical evaluation principles.

Types of Musculoskeletal Diseases & Correlation:

Ayurvedic Disease	Ayurvedic Pathogenesis (Samprapti)	Modern Corelation	Modern Pathology
Sandhigata Vata	<i>Vata</i> lodges in empty channels (<i>Srotas</i>) caused by tissue depletion (<i>Dhatukshaya</i>), leading to dryness and pain.	Osteoarthritis (OA)	Degeneration of articular cartilage and subchondral bone.
Amavata	<i>Ama</i> (undigested toxins) formed due to <i>Mandagni</i> circulates with <i>Vata</i> and lodges in joints (<i>Kapha seat</i>)	Rheumatoid Arthritis (RA)	Autoimmune chronic inflammation of synovial lining.

Asthi-Majja Kshaya	<i>Vata</i> increases in bone tissue (<i>Asthi</i>) due to lack of nutrition, making bones porous (<i>Soushirya</i>)	Osteoporosis	Low bone mass and micro-architectural deterioration.
Vatarakta	Obstruction of <i>Vata</i> channel by vitiated <i>Rakta</i> (blood), causing burning pain	Gouty Arthritis	Deposition of monosodium urate crystals.
Gridhrasi	<i>Vata</i> afflicting the tendons (<i>Kandara</i>) of the leg, causing radiating pain and stiffness.	Sciatica / Low Back Pain	Nerve compression or disc herniation.

Modern Diagnostic Modalities:

- *Imaging Modalities*

- **Radiography (X-Ray):** The first-line tool for accessing fractures, joint space narrowing, and osteophytes suffering from MSD. X-rays work on the principle of Differential Absorption.

Indications:

- *Acute Trauma:* The primary modality to rule out frank fractures, dislocations, and foreign bodies.
- *Osteoarthritis:* Essential for grading arthritis by visualizing cardinal signs: joint space narrowing, subchondral sclerosis, and osteophyte formation.
- *Structural Alignment:* Critical for assessing spinal deformities (scoliosis) and evaluating post-operative hardware.

Limitations:

- *Soft Tissue Blindness:* It has poor sensitivity for soft tissue pathology; ligaments, menisci, and muscles are not visible.
- *Superimposition:* As a 2D projection of a 3D structure, anatomical overlapping can obscure subtle fractures or anatomical details.
- *Insensitivity to Early Disease:* Significant bone loss (30-50%) must occur before osteopenia is visible on a standard X-ray.

Latest Innovations:

- *Digital Tomosynthesis:* Captures multiple low-dose X-rays from different angles to create

a quasi-3D image, effectively removing the issue of overlapping structures.

- *EOS Imaging System*: A Nobel Prize-winning technology that allows for low-dose, biplanar full-body imaging in a standing (weight-bearing) position. It is now the gold standard for analyzing global spinal balance and limb alignment without the magnification errors of standard X-rays.
- **Computed Tomography (CT Scan)**: Uses rotating X-ray beams to create 3D images, superior for complex fractures (pelvis/spine) and bone tumors. New innovations include Photon-Counting Detector CT (PCD-CT), which provides ultra-high spatial resolution of trabecular bone.

Indications:

- *Complex Trauma*: Essential for visualizing comminuted fractures (e.g., tibial plateau, pelvis) to plan surgical reconstruction.
- *Bone Tumors*: Superior for defining cortical destruction and matrix mineralization.

Limitations:

- *High Radiation Dose*: CT scans deliver a significantly higher radiation dose compared to X-rays, raising concerns about cumulative exposure and malignancy risk.
- *Beam Hardening Artifacts*: Metallic implants (like hip replacements) can cause streak artifacts that obscure surrounding bone visualization.
- *Soft Tissue Contrast*: While better than X-ray, it is inferior to MRI for visualizing bone marrow edema, ligaments, and tendons.

Latest Innovations:

- *Photon-Counting Detector CT (PCD-CT)*: This is the most significant leap in CT technology in decades. It converts X-ray photons directly into electrical signals, offering ultra-high spatial resolution. It allows visualization of trabecular bone micro-architecture, previously only seen in bone biopsies.
- *Weight-Bearing CT (WBCT)*: Traditional CT scans are done lying down (supine), which masks deformity. WBCT scanners allow the patient to stand during the scan, revealing the true mechanical alignment of the foot, ankle, and knee under physiological load.
- **Magnetic Resonance Imaging (MRI)**: MRI has revolutionized orthopedics by providing unparalleled contrast resolution without ionizing radiation. It serves as the "problem-solver" when clinical examination and X-ray findings are discordant.

Indications:

- *Internal Derangement of Joints:* It is the modality of choice for diagnosing meniscal tears in the knee, rotator cuff tears in the shoulder, and labral pathology in the hip.
- *Spinal Pathology:* Unmatched for visualizing disc herniation, nerve root compression (radiculopathy), and spinal cord abnormalities.
- *Marrow Edema & Occult Fractures:* MRI can detect "bone bruising" and stress fractures weeks before they become visible on X-ray.
- *Infection & Tumors:* Essential for defining the extent of osteomyelitis or soft tissue neoplasms .

Limitations:

- *Cost and Time:* It is an expensive modality with long acquisition times, making it susceptible to motion artifacts if the patient moves.
- *Bone Cortical Detail:* MRI is less effective than CT for visualizing fine cortical bone details or calcifications.

Future Innovations:

- *Silent MRI Sequences:* Reducing the intense acoustic noise during scanning to improve patient comfort.
- *Ultra-Short TE (UTE) Imaging:* Specialized sequences capable of imaging tissues with very short relaxation times, such as cortical bone and deep layers of cartilage, which were previously invisible on standard MRI.
- **Ultrasonography (USG) & POCUS:** Allows for real-time imaging of tendons and muscles and guides injections. Point-of-Care Ultrasound (POCUS) enables immediate bedside diagnosis in emergency settings.

Indications:

- *Dynamic Assessment:* Visualizing tendon subluxation or muscle contraction in real-time.
- *Interventional Guidance:* The gold standard for guiding intra-articular injections and aspirations.

Limitations:

- *Operator Dependency:* The diagnostic accuracy is highly dependent on the skill and experience of the sonographer.
- *Bone Barrier:* Sound waves cannot penetrate bone; therefore, intra-articular pathologies

(like cruciate ligaments or menisci) cannot be visualized.

- *Depth Penetration*: Image quality degrades significantly in obese patients, limiting assessment of deep structures like the hip joint.

Latest Innovations :

- *Shear Wave Elastography*: Measures tissue "stiffness" using sound waves. It can differentiate between a hard, fibrotic scar and soft, healthy tendon tissue before structural changes appear.
- *Handheld POCUS (Point-of-Care Ultrasound)*: Smartphone-connected probes allow immediate bedside diagnosis of effusions or tears in emergency and sports settings.
- **Dual-Energy X-ray Absorptiometry (DEXA)**: remains the criterion standard for determining Bone Mineral Density (BMD) and T-scores.

Indications:

- *Universal Screening*: Women aged ≥ 65 and Men aged ≥ 70 .
- *High-Risk Screening*: Post-menopausal women < 65 with risk factors (e.g., low BMI, smoking, family history).
- *Fragility Fracture*: Anyone aged > 50 with a history of fracture from minor trauma.
- *Medication Use*: Long-term steroid therapy (Glucocorticoids) or aromatase inhibitors.
- *Medical Conditions*: Hyperparathyroidism, Hyperthyroidism, or Malabsorption syndromes.
- *Treatment Monitoring*: To track bone density changes in patients on osteoporosis medication (every 1–2 years).

Limitations:

- *Areal vs. Volumetric Density*: DEXA measures areal density (g/cm^2), not true volumetric density. This means small bones (in short-stature individuals) may be falsely diagnosed as osteoporotic, while large bones appear normal.
- *Artifact Interference*: In elderly patients, aortic calcification or spinal osteophytes (bone spurs from arthritis) can falsely elevate the BMD reading, masking underlying osteoporosis.

Latest Innovations:

- *Trabecular Bone Score* : A software add-on that analyzes the "texture" of the DEXA image to estimate bone micro-architecture quality. It answers not just "how much" bone is there, but "how good" it is.
- *REMS (Radiofrequency Echographic Multi Spectrometry)*: A breakthrough non-ionizing technology that uses ultrasound to measure bone density and fragility, offering a radiation-free alternative to DEXA for screening.

- **Laboratory & Molecular Markers**

- **Inflammatory Markers (Acute Phase Reactant):**

These tests detect systemic inflammation

- **Erythrocyte Sedimentation Rate (ESR)** - measures how quickly red blood cells settle at the bottom of a test tube. In inflammation, high fibrinogen levels cause cells to clump together and fall faster.

1. *When it Increases*
2. *Rheumatoid Arthritis (RA) & SLE: Consistent elevation correlates with disease flares.*
3. *Osteomyelitis: Remains elevated for a long period in bone infections.*

Polymyalgia Rheumatica: Often presents with a very high ESR (>50-100 mm/hr)

- **C - reactive protein(CRP)** - A protein produced by the liver in direct response to inflammation. It is more sensitive and responds faster than ESR.

1. *When it Increases*
2. *Acute Septic Arthritis: Rises rapidly (within 6 hours) in bacterial joint infections.*
3. *Active Autoimmune Disease: High levels indicate active joint destruction in RA and Psoriatic Arthritis.*

4. *Post-Surgical Infection: Used to monitor recovery after joint replacement; if levels don't drop after surgery, it suggests deep infection.*

- **Immunological Markers (Auto-Antibodies)**

These are critical for diagnosing specific autoimmune musculoskeletal disorders.

1. **Rheumatoid Factor (RF):** *Found in 70-80% of RA patients, but can also be positive in other infections (Hepatitis) or healthy elderly individuals.*
2. **Anti-CCP (Cyclic Citrullinated Peptide):** *The "Gold Standard" for diagnosing Rheumatoid Arthritis. It is highly specific (95%) and often appears years before symptoms start.*
3. **HLA-B27 Antigen:** *A genetic marker essential for diagnosing Ankylosing Spondylitis (bamboo spine) and Reactive Arthritis.*

○ **Bone Turnover Markers (BTMs)** –

Used specifically for Osteoporosis (Asthikshaya) to measure the speed of bone metabolism.

- **PINP (Procollagen Type I N-Propeptide):** Measures Bone Formation. Low levels indicate that osteoblasts are not building enough bone.
- **CTX-I (C-Terminal Telopeptide):** Measures Bone Resorption. High levels indicate that osteoclasts are breaking down bone too quickly.

○ **Emerging Molecular Diagnostics^{vi}** –

Recent advancements have introduced precision biomarkers that allow for earlier diagnosis, often before radiological changes occur.

- **14-3-3 η (Eta) Protein:**

Application: A breakthrough marker for Early Rheumatoid Arthritis.

Significance: It detects joint damage potential even in patients who are RF and Anti-CCP negative (Seronegative Arthritis). High levels predict rapid joint erosion.

- **Serum COMP (Cartilage Oligomeric Matrix Protein):**

Application: A specific biomarker for Osteoarthritis and cartilage breakdown.

Significance: High levels in the blood indicate active cartilage destruction, helping to diagnose "Pre-Radiographic" Knee Osteoarthritis.

- **Circulating MicroRNAs (miRNAs):**

Application: Genetic markers for Osteoporosis.

Significance: Specific miRNA profiles (like miR-21) are now being used in research to predict fracture risk more accurately than DEXA scans alone.

- **Sclerostin Levels:**

Application: A regulator of bone formation.

Significance: Elevated sclerostin inhibits bone formation. Measuring this helps in selecting patients for new anabolic therapies (like Romosozumab).

- **Next-Generation Sequencing (NGS) for Septic Arthritis:**

Application: Detecting infections.

Significance: Instead of waiting days for a culture to grow, NGS detects bacterial DNA in synovial fluid within hours, identifying the exact organism causing joint infection.

Ayurvedic Diagnostic Method^{viii}:

1. **Darshana** (Inspection): Observing Gati (gait), Shotha (swelling), and Akriti (deformity). According to various study it has been proven that the gait of people suffering from osteoporosis varies from that of people not suffering from osteoporosis in terms of step length, stride length and the time required to complete a 10 m walk^{viii}. Osteoporosis is a leading cause of change in Akriti (bone deformity) in older people^{ix}.
2. **Sparshana** (Palpation): Assessing Ushna (heat/inflammation), Stambha (stiffness), and Sparsha Asahishnutva (tenderness). Since Osteoporosis is a Asthi – Majja Kshayaja Vyadhi because of Vata Vyadhi. Most of the Vata kshaya lakshanas such as severe lethargy, pain and falling of dantadi (mala of Asthi Dhatu) can be observed. Patient suffering from osteoporosis will also exhibit severe tenderness of the body parts.
3. **Prashna** (Interrogation): History taking or Interrogation of the patient is very much necessary for the identification and confirmation of the diagnosis from a variety of Musculo skeletal disorders having almost same signs and symptoms.
4. **Assessing Prakriti** (Constitution), **Sara** (Tissue quality - Asthi Sara), **Samhanan** (Compactness), and **Satmya** (Adaptability).

Pathogenesis Analysis (Samprapti Ghataka):

- **Margavarana**: Obstruction of channels (common in Amavata). Requires Shodhana (purification).
- **Dhatukshaya**: Depletion of tissue (common in Osteoporosis). Requires Brimhana (nourishment).

Integrated Diagnosis & Management of Osteoporosis ASTHIKSHAYA:

Colloquially termed the "Silent Epidemic," represents a systemic skeletal disease characterized by low bone mass and micro-architectural deterioration.

According to acharya Charaka Asthikshaya is classified under the 18 types of Kshaya. The pathogenesis is best understood through the fundamental Ayurvedic principle of Ashraya-Ashrayi Bhava . The Asthi Dhatu is the seat (Ashraya) of Vata Dosha (Ashrayi). However, unlike other tissues where the resident dosha and tissue increase together, Vata and Asthi share an inverse relationship. When Vata aggravates due to catabolic factors, Asthi Dhatu depletes.

Pathogenesis follows two distinct trajectories, which is crucial for differential diagnosis

- **Margavarana-Janya (Obstruction-Induced):** Caused by the blockage of Majjavaha Srotas (marrow channels) by vitiated Kapha or Ama (metabolic toxins), preventing nutrients from reaching the bone.
- **Dhatukshaya-Janya (Depletion-Induced):** A direct nutritional deficit or age-related degeneration (involutional loss), often correlating with post-menopausal osteoporosis where estrogen withdrawal accelerates bone resorption.
- **Clinical Signs and Symptoms^x:**

Sl. No	Lakshanas	Ch.S	Su. S	As. S	As. H	Ha. S
1.	Asthibedha	+	-	+	-	-
2.	Asthitoda	-	+	+	+	-
3.	Ruja	-	-	-	-	+
4.	Asthishoola	+	+	-	-	-
5.	Kesha Vikara and Patana	+	-	+	+	-
6.	Loma / Roma Vikara and Patana	+	-	+	+	-
7.	Nakha Vikara and Patana	+	+	+	+	-
8.	Smashru Vikara and Patana	+	-	-	-	-
9.	Danta Vikara and Patana	+	+	+	+	-
10.	Shrama	+	-	-	-	-
11.	Sandhi Shaitilya	+	-	+	-	-
12.	Ruksha	-	+	+	-	-
13.	Parushya	-	-	+	-	-
14.	Asthibadda	-	-	+	-	-
15.	Mamsabhilasha	-	-	+	-	-
16.	Anga Bhanga	-	-	-	-	+
17.	Ati Manda Chesta	-	-	-	-	+
18.	Bala Kshaya	-	+	+	+	-
19.	Medo Kshaya	+	-	-	-	+

20.	Viryasya Mandya	-	-	-	-	+
21.	Vikampana	-	-	-	-	+
22.	Chardi	-	-	-	-	+
23.	Visangnata	-	-	-	-	+
24.	Shosha	-	-	-	-	+
25.	Kathorata	-	-	-	-	+
26.	Shophita	-	-	-	-	+

Diagnostic Modalities for Osteoporosis (Asthikshaya)^{xi, xii}:

- **Dual-Energy X-ray Absorptiometry (DEXA):** Currently, this remains the "Gold Standard" for diagnosis. It quantifies Bone Mineral Density (BMD) at the spine and femur. According to the World Health Organization (WHO), a T-score of -2.5 or lower confirms osteoporosis.
- **Photon-Counting Detector CT (PCD-CT):** This represents a cutting-edge innovation in imaging. Unlike traditional CT scans,
 - **PCD-CT** converts X-ray photons directly into electrical signals. This technology provides ultra-high spatial resolution, allowing clinicians to visualize the trabecular micro-architecture of the bone, which is often invisible in standard radiography.
- **Artificial Intelligence (AI) and Deep Learning:** The integration of AI has revolutionized diagnostics. Deep Learning algorithms (CNNs) are now capable of
 - analyzing medical images to detect subtle fractures and meniscus tears with an accuracy that matches expert radiologists, ensuring early detection before significant damage occurs.
- **4D-CT (Dynamic Computed Tomography):** This modality adds the dimension of "time" to 3D imaging, capturing the joint in motion. It is critical for diagnosing dynamic instability that static scans might miss.
- **PINP (Procollagen Type I N-Propeptide)** is used to measure new bone formation, while CTX-II serves as a specific biomarker for cartilage and bone degradation, predicting disease progression more accurately than structural imaging alone.

Management of Osteoporosis:

The management of Osteoporosis is not merely about calcium supplementation but involves Samprapti Vighatana (breaking the pathogenesis). the treatment is stratified based on the pathological pathway:

- **Shodhana via Basti Therapy^{xiii}:**

Acharya Vagbhata prescribes Tikta Ksheera Basti as the gold standard^{xiv}.

“Asthi Sankshayat Jatan Kshira Ghritaihi Tikta Samyutaihi Bastibhistatha”

Mechanism of Action: This presents a unique pharmacological paradox. Generally, Tikta (Bitter) rasa aggravates Vata. However, when processed with Ksheera and Ghrita, it acts as Srotoshodhaka. It clears the Margavarana. Since the colon is the primary seat of Vata, Basti therapy provides a systemic effect, modulating bone remodeling.

- **Shamana (Palliative Care) & Phyto-Pharmacology^{xv}:**

The herbs based on their specific action on the disease pathways:

Herbs for Margavarana :

- Guduchi (*Tinospora cordifolia*), *Ashwagandha* (*Withania somnifera*), and *Guggul* (*Commiphora mukul*).

Studies on Guduchi stem extract (ethanolic) in ovariectomized rats demonstrated estrogen-like effects, significantly slowing tibial bone loss. Ashwagandha contains Withaferin A, a proteasomal inhibitor that promotes bone healing and exerts an anabolic effect. These drugs possess Vata-Kapha pacifying properties, essential for clearing obstructions.

Herbs for Dhatukshaya :

- Shatavari (*Asparagus racemosus*), Madhuyashti (*Glycyrrhiza glabra*), and Bala (*Sida cordifolia*).

Shatavari has been proven to suppress osteoclastic activity (bone breakdown) and reduce serum alkaline phosphatase and calcium loss in urine. These herbs are rich in phytoestrogens and calcium, acting directly as Balya and Brimhana to restore bone mass.

DISCUSSION:

The diagnosis of musculoskeletal disorders, particularly Osteoporosis (Asthi-kshaya), has evolved from simple symptom-based assessment to precise micro-architectural analysis. In modern orthopaedics, *Dual-Energy X-ray Absorptiometry* (DEXA) remains the "Gold Standard" for quantifying Bone Mineral Density (BMD) and establishing a T-score diagnosis. However, relying solely on BMD is often insufficient as it detects damage after significant bone loss has occurred. Advanced modalities like

Magnetic Resonance Imaging (MRI) are critical for detecting early marrow oedema and soft tissue involvement, while innovations like *Photon-Counting Detector CT* (PCD-CT) allow us to visualize the trabecular micro- architecture often missed by conventional X-rays. Furthermore, the integration of biochemical markers such as PINP (Procollagen Type I N-Propeptide) for bone formation and CTX-II for cartilage degradation provides a real-time "metabolic snapshot," allowing clinicians to monitor the rate of bone turnover before structural damage becomes visible.

Validating Ayurvedic Pathology with Modern Tools:

While modern diagnostics excel at identifying "what" the damage is (e.g., low bone mass), Ayurveda provides the "why" (etiopathology). The concept of Asthikshaya is rooted in the aggravation of Vata Dosha, which resides in the bones (Ashraya-Ashrayi Bhava). A critical gap in modern diagnosis is differentiating the root cause: is the bone loss due to Dhatukshaya (pure nutritional depletion) or Margavarana (obstruction of metabolic channels)

This is where integration becomes powerful. For example considering the case of a patient with normal calcium intake but a very low BMD (diagnosed via DEXA) may be suffering from Margavarana—where metabolic toxins (Ama) block the Majjavaha Srotas, preventing nutrient absorption. By correlating clinical signs of Srotodushti (channel blockage) with modern metabolic markers, we can choose a more targeted therapy than just generic calcium supplementation.

CONCLUSION:

Musculoskeletal disorders like Osteoporosis are multifactorial, driven by aging, hormonal imbalances, and lifestyle factors. This review highlights that no single system of medicine is complete in isolation. Modern technology provides the necessary diagnostic precision allowing us to quantify bone loss with DEXA and monitor turnover with specific biomarkers. However, technology alone treats the numbers, not the patient. While treating Musculo skeletal cases taking into consideration of osteoporosis cases, the treatment should be very much precise.

While administering certain panchakarma procedures such as udwartana, abyanga, and other physical therapies, without knowing the BMD (Bone Mineral Density) can lead to various complications such as fracture of the affected body parts. So timely diagnosing the patient using the modern available diagnostic measurements is very much necessary to develop a pinpoint and accurate treatment methodology for precise treatment application.

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55-Effect of aganikarma in the management of sports injury with special reference to repetitive strain injury

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ABSTRACT

Pain is a bad feeling that makes a person visit a doctor because it prevents them from doing their daily tasks. The term "sports injury" refers to the kinds of injuries that most commonly occur during sports or exercise, but they are not limited to athletes. Factory workers get tennis elbow, painters get shoulder injuries, and gardeners develop tendinitis, even though they may not participate in sports. Ultimately, however, "sports injuries" refers to those that occur in active individuals. This health topic focuses on the most common types of sports injuries -those that affect the musculoskeletal system.

The musculoskeletal system is the network of muscles, tendons, ligaments, bones, and other tissues that provides the body with stability and enables movement. Pain is an unfavorable sensation that brings an individual to the physician due to a halt from his routine works. The condition is more painful when mobile joints such as elbow joint of the body are involved due to tennis elbow. Injury prevention should be an important part of every physical activity, because it not only helps you achieve your training goals but also keeps you healthy and safe.

If the drugs such as non steroidal anti-inflammatory drugs, which are generally used for relieving pain factor in sports injuri, are used for longer duration they can cause potential side effects on the body; hence, there is an emerging need to search for a safe option for the same. In this study, an attempt has been made to search the researches conducted on Agnikarma related to sports injuri to establish its role in repetitive strain injuri.

Keywords – Ayurved, pain management , Aganikarma

INTRODUCTION

Ayurveda is a science of life and shalyatantra is its important branch which represents the surgical field. Ayurveda is the everlasting supreme science of medicine because it deals with promotion of health and curing the diseases. The aim of Medical Science is to provide better health to every human being. To achieve this goal the pathy should be able to eliminate the disease and

that to be without any side effects. Ayurveda have shaman and Shodhan chikitsa. Variety of medical procedure mentioned in Ayurved samhita it as like ksharkarma, lepanam, aganikarma, shashtrakarma etc.

Agnikarma is the application of heat directly or indirectly to the affected part by using different materials. According to Sushruta, if Agnikarma is used in such diseases, there will be less chances of their recurrence and it will be successful in curing the diseases, which are incurable by drugs and surgery Pain is the fundamental feature of most of the musculoskeletal disorders. Pain is the factor for which patient generally visit a doctor. Pain is defined as "an unpleasant sensory and emotional involvement, which is generally associated with actual or potential tissue damage. It can affect the quality of life; hence, its preventive measure is of prime importance in health care. In Sushrut Samhita, the word pain is mentioned as Ruja. There are different treatment modalities in Ayurveda, which are described by Acharyas, Agnikarma is one among them. As it is a para surgical procedure, Acharya Charak has not described Agnikarma in separate chapter but has described it as one of the treatment measures in different Vatavyadh is such as Gridhrasi.

The present review is aimed at analyzing the role of Agnikarma in pain of various repetitive strain injuri. As you all know that sport's person while from there practice, there event's and entire period of time they will subjected to the repetitive strain injuri. To the elbow, to the knee, to the hip, to ankle etc. **The estimated prevalence of clinically confirmed cases of RSI was 22%.** If the drugs such as non steroidal anti-inflammatory drugs, which are generally used for relieving pain factor in sports injuri, are used for longer duration they can cause potential side effects on the body; hence, there is an emerging need to search for a safe option for the same. In this study, an attempt has been made to search the researches conducted on Agnikarma related to sports injuri to establish its role in repetitive strain injury.

METHODOLOGY

3. Drug /Formulation details

TOOLS	
1	Loh Shalaka
2	Ghrit, Honey
3	Gause piece
4	Candle

1. Purva karma

-Written Consent taken.

-Position- patient is made to sit in comfortable position on examination table, Proper draping of part was done.

-Marking of points near injured Pradesh for Agnikarma and most painful points are marked by skin marker pen.

2. Pradhana Karma

- Irrespective of a specific site, Agnikarma was done at maximum tender site affected the injured region.
- The minimum space was kept between two Agnikarma points to avoid overlapping of Dagdha Vrana.
- After Agnikarma, fresh Ghritakumari applied on Dagdha to relieve burn pain

3. Pashchata karma

- Raw Aloe Vera pulp is applied at the site of Agnikarma.
- Patient will be observed for 10 min after procedure.
- Repeat procedure is done after every 3th, 5th and 7

Assessment of Agnikarma Twaka dagda:-

Twaka dagda: Production of crackling sound, bad odour and contraction of skin.

Mansa dagda: Pigeon like colour, mild swelling, mild pain, and dry contracted vrana.

Sira snayu dagda: Black colourations, elevation of site and no discharge.

Sandhi asthi dagda: Dryness, dark red colouration, roughness and stability of the part.

Types:-

Sports injuries are broadly categorized into two kinds:

1. Acute injuries, which happen suddenly.

2. Chronic injuries, which are usually related to repetitive loading or overuse and develop gradually over time .

MECHANISM OF R.S.I:-

- Too much too quickly
- Too heavy Inadequate warm up
- Poor equipment
- Incorrect surface
- Poor technique
- Mechanical imbalance
- Previous injury
- Poor healing
- Competitive pressures

SYMPTOMS:-

You can get repetitive strain injury (RSI) in many parts of the body, but it most often affects the:

- shoulders
- Elbows
- forearms and wrists
- hands and fingers

The symptoms usually start gradually and can include:

- pain, which may feel like burning, aching or throbbing

- stiffness and weakness
- tingling, pins-and-needles or numbness
- muscle cramps
- swelling

DISCUSSION

Ligament tear can be symptomatically correlated with Sandhigata Vata. Ayurvedic points of view pathogenesis of Sandhigata Vata is as follows: Due to Abhighata (trauma) there will be Rasa, Raktadi Dhatu Dushti and Vata Prakopa which leads to Vikruti in Asthi, Sandhi, Snavu, Kandra and causes Sandhigata Vata.

According to Ayurveda, every Dhatu (tissue) has its own Dhatvaagni (digestive fire of tissues) for its Poshan (nourishment), if there is any Dhatvaagni Vishamata (deviation in digestive fire) it may lead to Vikar of that particular Dhatu. Mamsaasthigata Pida (musculoskeletal pain) might be due to Mamsa (muscle), Meda (fat), and Asthidhatu (bone) Agnimandya. In the process of Agnikarma, local heat therapy causes Dhamaniprasaran that increases the Raktapravahan of that Sthana, which is helpful in correcting Dhatvaagnimandya.

According to modern science, the heat therapy, which is given at the local or affected area increases the blood circulation with metabolism by causing vasodilation, increase in the elasticity of connective tissue, and exudation of fluid with increase in white blood cells and antibodies. Local tissue metabolism rate is increased by warming, which helps in healing. As there is an increase in local metabolism, the waste products that are generated get excreted, which normalize the blood circulation, resulting in decreased intensity of pain. Heat may stimulate lateral spinothalamic tract, which causes stimulation of descending pain inhibitory fibers, which again causes release of endogenous opioid peptide that binds with the opioid receptors to substantia gelatinosa Rolandi, leading to inhibition of release of P-substance with blockade of transmission of pain.

Conclusion

This review concludes that the Agaikanna procochlore can be performed tonally, utilizing different materials and temperatures depending on the type of penful condition, with the goal of primarily relieving pain right away powerful and less mvasive para-surgical technique, The majonty of research is done on musculoskeletal conditions, such as cervical spondylosis, osteoarthritis of kree joint plantar fascita, sciatica tennis elbow, frozen shoulder, etc. This reviens concludes that almost all studies have found Agikanme, along with vanous types of Shalakas, to be significantly effective in pam management for musculoskeletal disorders. It can be used in conjunction with additional oral supportive medications. For the pations experiencing no or complications, It is easy to convenient economical, efficient.

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56-Management Of Sandhigatvata With Eranda Lepa - A Case Study.

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Abstract

Sandhigatavata, described in classical Ayurvedic texts under Vatavyadhi, closely resembles osteoarthritis in modern medicine. It is characterized by pain (Shoola), swelling (Shotha), stiffness (Stambha), and restricted joint movements. The condition predominantly affects weight-bearing joints and is more common in the elderly due to Dhatu Kshaya and aggravated Vata Dosha. Eranda (*Ricinus communis* Linn.) is widely indicated in Vatavyadhi for its Vatahara, Shothahara, and Vedanasthapana properties. The present case study evaluates the effectiveness of Eranda Lepa (topical application of castor-based paste) in the management of Sandhigatavata. The intervention demonstrated significant improvement in pain, swelling, and mobility, suggesting Eranda Lepa as a safe and effective conservative management approach.

Keywords: Sandhigatavata, Osteoarthritis, Eranda Lepa, Vatavyadhi, Ayurveda, Castor

Introduction

Sandhigatavata is described in classics such as Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya under Vatavyadhi. It results from vitiated Vata Dosha localizing in joints (Sandhi), leading to pain, crepitus (Atopa), and functional impairment.

In contemporary medicine, Sandhigatavata correlates with osteoarthritis (OA), a degenerative joint disorder characterized by cartilage degradation, osteophyte formation, and synovial inflammation. The global burden of osteoarthritis is rising due to aging populations and sedentary lifestyles.

Ayurveda emphasizes local therapies such as Lepa (herbal paste application) for managing localized Vata disorders. Eranda (*Ricinus communis* Linn.) is indicated for Vata disorders due to its Ushna (hot), Snigdha (unctuous), and Vata-Kapha shamaka properties

Aim and Objectives

Aim:

To evaluate the effect of Eranda Lepa in the management of Sandhigatavata.

Objectives:

- To assess reduction in joint pain
- To evaluate improvement in swelling
- To assess changes in joint mobility
- To observe any adverse effects

Patient Information:

- Age: 58 years
- Gender: Female
- Occupation: Homemaker
- Chief Complaints:
- Pain in right knee joint for 2 years
- Swelling and stiffness for 6 months\
- Difficulty in walking and climbing stairs

History:

Gradual onset pain aggravated by movement and relieved by rest. No history of trauma, diabetes, or hypertension.

Clinical Findings:

- Tenderness: Present
- Mild swelling
- Crepitus on movement
- Restricted flexion and extension

Ayurvedic Diagnosis: Sandhigatavata

Modern Diagnosis: Osteoarthritis (Knee joint)

Intervention

Preparation of Eranda Lepa

Eranda leaves were cleaned and made into a paste with warm castor oil. The paste was mildly heated before application.

Method of Application

- Applied over affected knee joint
- Thickness: Approximately 0.5 cm
- Duration: 45 minutes daily
- Course: 21 days
- Patient was advised light diet, avoidance of cold exposure, and gentle knee exercises

Results

Parameter	Before Treatment	After 21 Days
Pain (VAS)	8	3
Swelling	Moderate	Mild
Stiffness	25 min	8 min
ROM	Restricted	Improved

Significant reduction in pain and stiffness was observed. No adverse reactions noted

Discussion

Sandhigatavata involves Vata aggravation with Dhatu Kshaya. Eranda possesses:

- **Ushna Virya** – Counteracts cold and stiffness
- **Snigdha Guna** – Alleviates dryness caused by Vata
- **Vatahara & Shothahara Karma** – Reduces inflammation and pain

Pharmacologically, Ricinus communis contains ricinoleic acid with anti-inflammatory and analgesic effects. Topical application improves local circulation, reduces inflammatory mediators, and relieves stiffness.

Thus, Eranda Lepa acts through both Ayurvedic principles and pharmacological mechanisms

Conclusion

Eranda Lepa proved effective in reducing pain, swelling, and stiffness in Sandhigatavata. It is a cost-effective, safe, and non-invasive therapy. Larger clinical trials are recommended to validate findings

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57-AYURVEDIC INTERVENTION AS A NON-SURGICAL ALTERNATIVE FOR LUMBAR DISC PROLAPSE: A CASE STUDY

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Abstract

Lumbar disc herniation (LDH) is a global health challenge significantly impacting the productive population nearly 80 % of population sustain episode of low back ache once during their lifetime ¹ with male to female ratio of 2:1 ². In Ayurveda, this condition is identified as Gridhrasi. While conventional treatments are available, they are often limited by recurrence and the invasive nature of surgery.

This case study evaluates a comprehensive Ayurvedic protocol for L5-S1 disc extrusion with radiculopathy. The intervention integrated specific internal medications with traditional therapeutic procedures. Clinical outcomes were assessed using the Visual Analogue Scale (VAS), Straight Leg Raising Test (SLRT), and the Oswestry Disability Index (ODI). Post-treatment analysis revealed significant improvements across all parameters. The patient reported a marked reduction in pain (VAS) and functional disability (ODI), alongside a restored range of motion in the SLRT.

The results suggest that a structured Ayurveda protocol serves as an effective, non-invasive alternative for managing LDH radiculopathy, providing symptomatic relief and functional restoration.

Keywords: Lumbar disc herniation, Gridhrasi, Ayurveda, Radiculopathy, L5-S1.

Introduction

Low back pain affects approximately 80% of the population at least once in their lifetime, with Lumbar Disc Herniation (LDH) being the primary etiology. The North American Spine Society (NASS) defines LDH with radiculopathy as the localized

displacement of disc material beyond the intervertebral space, resulting in dermatomal or myotomal neurological deficits. The condition has an annual incidence of 5 to 20 cases per 1,000 adults, predominantly affecting males in their third to fifth decades. While conventional management includes analgesics, epidural steroids, and surgery, postoperative recurrence rates remain significant at 5–15%.

In Ayurveda, LDH with radiculopathy is correlated with Gridhrasi based on the cardinal features. The name is derived from the patient's characteristic gait, which resembles that of a vulture (Gridhra) due to compensatory scoliosis and a flexed limb position. Acharya Charaka describes its progression as radiating pain, stiffness, and twitching starting from the Sphik (gluteal region) and extending to the Kati-Prishta (waist/back), Uru (thigh), Janu (knee), and Pada (foot)³.

Patient information :A 42 year old female patient visited opd of department of kayachikitsa ,with complaints of severe low back pain radiating to left lower limb associated with numbness and tingling sensation .The pain was severe agonizing in nature and the patient was not able to walk without support .she had history of fall 3 years back ,after which the pain developed .initially pain was restricted to low back only and she managed it with allopathic treatment .but intensity of pain increased since past 3-4 months and she was unable to perform even routine activities .On worsening of symptoms she consulted an orthopedic surgeon ,took MRI and was advised to undergo surgery .as she was unwilling for the surgery,she consulted at kayachikitsa OPD for Ayurveda management .

Clinical Finding

Palpation:Grade ii tenderness at L4-L5 ,L5-S1 level

SLR:positive (left)at 20%

Lassegues test :positive –left leg

Investigations:

MRI Lumbosacral spine dated on sept 2024

Diffuse disc bulge with central, left postero-lateral broad based disc extrusion, left postero-lateral annular fissure and bilateral facet joint hypertrophy at L4-L5, causing asymmetric spinal canal narrowing, bilateral recess and neural foraminal narrowing (L> R), impinging on the left traversing nerve roots and abutting the right traversing and bilateral exiting nerve roots.

Bilateral facet joint hypertrophy and ligamentum flavum thickening from L1-L5

Table no 1: treatment procedure

SR NO	Treatment procedures	Medicines used	Duration
1	Bandhan & traction	Murivenna	7 days
2	Accha Snehapana	Guggulutiktakam ghritam	6 days
3	Abhyanga ,Ushnasweda	sahacharadi tailam	3 days
4	Virechana	gandharv erandam	1 day
5	Peyadikrama		7 days
6	Erandmuladi niruha balaguduchyadi anuvasan		8 days
7	Vaitarana basti	Amlika 60 g Guda 30g saidhavam 15 g sahacharadi thailam 120 ml ksheeram 240 ml	7 days

table no 2: Internal medicine

sr no	name of medicine	dose	Time
1	Vaishwanar churna	5gm ----0----5 gm	before food
2	gandharva hastyadi kashayam	60ml---0-----60ml	before food
3	sahacharadi kashayam	60ml-----0---60ml	after food
4	yograj guggulu	1----0----1	with gandharva hastyadi kashayam
5	sahacharadi thailam 21 avarthi	15 drops----0----15 drops	1----0----1

observation and result table no 3 ;

sr no	assesment criteria	before treatment	after completion treatment protocol	after 1 month	after follow up 1 month
1	VAS SCORE	9	2	0	0
2	SLR degree	20% left	70	90	90
3	ODI SCore	60%	20%	18%	18%

Discussion:

The treatment protocol is formulated considering gridhrasi chikitsa sutra of Acharya Chakradatta and general treatment principles of vatavyadhi . This holistic approach follows a systematic progression: initial Deepana-Pachana (digestive stimulants), followed by Shodhana Karma (purification), and concluding with Vasthikarma (medicated enemas)⁴.

Modern research on the gut microbiome and gut-brain axis shows that the gut's microbial ecosystem profoundly influences systemic inflammation, immune function, and nervous system signaling, implying that therapies affecting gut physiology (including enemas) may have systemic effects beyond local digestion⁸

Proper functioning of Purishdhara Kala supports elimination (Mala) and Vata regulation, which Ayurveda correlates with neuromuscular health and pain reduction in Vata-dominant conditions like disc protrusion.⁹

Probable Mode of Action

The efficacy of the integrated Ayurvedic and supportive therapies used in this protocol can be understood through their specific physiological and pharmacological actions:

1. Bandhana (Therapeutic Bandaging) :Given that debilitating pain is the primary symptom, the first priority is pain reduction to enable the patient to undergo further treatment. Bandhana provides Asthi Sthiryatha (structural stability to the bones/joints).Murivenna was utilized for its potent anti-inflammatory and analgesic properties, effectively managing acute localized pain.
2. Pelvic Traction and Positioning :Mechanical intervention plays a critical role in addressing the physical compression of nerve roots.Traction assists in nerve root decompression, widening of intervertebral joints, and the creation of a vacuum effect to

help reduce disc herniation. It is also instrumental in relaxing muscle spasms. Patients were advised on complete bed rest in a supine position with hips and knees flexed. This specific posture reduces tension on the sciatic nerve roots and significantly lowers intervertebral pressure

3. Snehapana and Virechana (Internal Oleation and Purgation) :As Gridhrasi is a Shoola Pradhana Vatha Vyadhi (a Vata disorder dominated by pain), Accha Snehapana (consumption of medicated ghee) and Snigdha Virechana (unctuous purgation) are indicated.

Guggulu Thikthakam gritham : Selected for Snehapana due to its specific indication in Sandhi Majjagatha Vatha (Vata localized in joints and bone marrow). Abhyanga is Performed with Sahacharadi Thailam, which is clinically proven to reduce radicular pain in the lower limbs.

Gandharva Eranda Thailam: Used for Virechana. According to Acharya Vagbhata, castor oil (Eranda) is the premier choice for treating painful inflammatory conditions of the lower back.

4. Vaitharana Vasthi (Medicated Enema)⁵

Vasthi is often referred to as Ardha Chikitsa (half of all treatments) for Vata disorders due to its profound systemic impact. The Formulation: Acharya Vangasena recommends Vaitharana Vasthi specifically for Gridhrasi. Ksheera Vaitharana: By incorporating Ksheera (milk) and Sahacharadi Thaila Mezhlukupakam, the treatment targets lower limb pathologies.

Modern research on the gut microbiome and gut-brain axis shows that the gut's microbial ecosystem profoundly influences systemic inflammation, immune function, and nervous system signaling, implying that therapies affecting gut physiology (including enemas) may have systemic effects beyond local digestion⁸

Proper functioning of Purishdhara Kala supports elimination (Mala) and Vata regulation, which Ayurveda correlates with neuromuscular health and pain reduction in Vata-dominant conditions like disc protrusion.⁹

Dual Action: While traditional Vaitharana is Theekshna (sharp/cleansing) due to Amlika (tamarind), the Ksheera-based modification provides Shodhana (purification), Shamana (pacification), and Brumhana (nourishment) simultaneously.

Internal Medicines

The internal medicinal course was divided into two strategic phases

During initial week ,drugs with deepana Pachana Ama shophahara properties was administered.as inflammation is highly associated with the pathogenesis of disc degeneration ,disc prolapse and associated with pain mechanisms ,these medicines were opted .During second stage of treatment after peyadikrama disease specific drugs were administered.

table no 4 :probable mode of action of internal medicines

MEDICINE	MODE OF ACTION
Gandharva hastyadi kashay	-vatakaphahara,Deepana Pachana and Malashodhana properties -Hareetaki ,Chiravilwa and Punarnava helps in Vatanulomana -Chitraka and Shunthi has Ushna Veerya ,Deepana Pachana action and also to strotoshodhana .
Vaishwanar churnam	most ingredients are having Katu Tikta rasa and Katu Vipaka -has vatanulomana ,Vibhandadhara ,Shoola Shothahara and Kapha-vatahara properties . has scientifically proven for anti-inflammatory action of vaishwanar churnam ⁶
Yogaraj guggulu	-Among 29 ingredients ,most drugs have Thiktha ,Kashaya ,Katu rasa ,Ushana Ruksha guna ushana veerya and Kapha vatahara properties .it acts as vedana sthapaka ,Shothahara and Nadi balya .
Sahacharadi kasshaya	-All the 3 ingredients are having vata –kapha shamaka ,Vedanasthapak ,shullahara ,Shothahara,and Nadi uttejak properties -The GC MS analysis of sahacharadi Kashayam was reported showing the presence molecules such as heptanediamide,N N-di-benzoyloxy-benzoic acid ,eugenic-tetradecanoic acid etc which are known to have anti-inflammatory properties ⁷ .
sahacharadi 21 avarthi thailam	strengthening and nutritive effect on various neuro muscular structures in lumbar region and lower extrimities .

CONCLUSION :

The case study demonstrates that a comprehensive Ayurvedic treatment protocol is highly effective in managing Lumbar Disc Herniation (LDH) with radiculopathy, a condition paralleled with Gridhrasi in Ayurvedic literature. The results show that by integrating Shodhana (purification) and Shamana (palliative) therapies, significant clinical relief can be achieved without surgical intervention. The patient experienced a dramatic reduction in pain (VAS score dropped from 9 to 0) and a substantial improvement in functional mobility (SLR increased from 20° to 90°). This suggests that Ayurveda provides a sustainable alternative for patients who are unwilling to undergo surgery or face the risks of recurrence associated with conventional treatments

Although promising case evidence exists, high-quality controlled clinical trials are limited, and further research is required to firmly establish basti's role via gut-axis mechanisms and to standardize protocols specifically for disc protrusion management. .

Further studies with radiological evaluation are needed to bring more light into it

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58-A Clinical Evaluation of the Efficacy of Marma Chikitsa in Avabahuka with Special Reference to Frozen Shoulder (Adhesive Capsulitis) – A Prospective Interventional Study

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Abstract

Background: Avabahuka is a Vataja Nanatmaja Vyadhi described in Ayurveda, presenting with pain, stiffness, and restricted shoulder movements, clinically correlating with Frozen Shoulder (Adhesive Capsulitis). Despite available modern treatments, recurrence and chronicity remain common. Marma Chikitsa, acting on Prana, Vata, and Snayu, offers a holistic non-invasive therapeutic approach. The word "Marma (vital points)" and "Chikitsa (Treatments)" means treatment or therapy. Marma Chikitsa is a therapeutic practice involving manipulating and stimulating these vital points to promote physical, mental, and spiritual well-being. The present case i.e 46 yr male patient (BADRI KISAN DASPUTE FROM ADGAON) came to camp conducted at ADGAON BUJRUK ,CHH SAMNHAJINAGAR by CSMSS Ayurved college and Hospital ,chh sambhajinagar. Patient c/o Restricted movement of Rt shoulder and pain. This case is of a Frozen shoulder also known as adhesive capsulitis. The condition severely affected the movement of the shoulder joint. The patient has no history of recent trauma or any metabolic disorder like Diabetes mellitus, Hypertension or thyroid disorders. Treatment of Frozen shoulder (adhesive capsulitis) with medications and surgery is a very tedious job for the physician/surgeons. The patient's main concern was pain and restriction in the movement of the shoulder joint. In the present case study, marma Chikitsa has been employed in the case of frozen shoulder and the results were very encouraging. This case report suggests that Marmachikitsa should be considered an effective option for the medical and surgical management of frozen shoulder cases.

Aim: To evaluate the efficacy of Marma Chikitsa in the management of Avabahuka.

Materials and Methods: A patients diagnosed with Avabahuka were treated using a standardized Marma Chikitsa protocol over selected Marmas for 10 days. Assessment was done using Visual Analogue Scale (VAS), goniometric measurement of shoulder movements, and Range of motion.

Results: Significant improvement was observed in pain, stiffness, range of motion, and functional capacity.

Conclusion: Marma Chikitsa is an effective, safe, economical, and non-invasive modality in the management of Avabahuka.

Keywords: Avabahuka, Frozen Shoulder, Marma Chikitsa, Adhesive Capsulitis, Vata Vyadhi

Introduction

Avabahuka is described in Charaka Samhita (Chikitsa Sthana 28) as a Vataja Nanatmaja Vyadhi characterized by Bahushoola, Stambha, and Bahupraspandana Hani. Sushruta has also described Avabahuka under Vata Vyadhi. Clinically, it resembles Frozen Shoulder (Adhesive Capsulitis), characterized by progressive pain and limitation of both active and passive movements of the shoulder joint.

Marma Chikitsa, a classical yet underutilized therapeutic modality, focuses on stimulating vital points to regulate Prana and Vata, thereby restoring neuromuscular balance. Marma Chikitsa revolves around the concept of Marma points, vital energy points within the body that are pivotal for the regulation of life force, or Prana. The word "Marma" is derived from the Sanskrit language, meaning hidden or secret. In Ayurveda "Marma" denotes the specific point which may cause death, if injured severely. These Marma points are specific areas where various anatomical and physiological elements, such as muscles, ligaments, veins, bones, and joints, converge. There are a total of 107 recognized Marma points, and each point is believed to correspond to a specific organ or function in the body. The practice of Marma Chikitsa involves the stimulation and manipulation of these Marma points through a range of techniques, including massage, pressure, tapping. The objective of Marma therapy is to harmonize and optimize the flow of Prana throughout the body, ensuring a balance in the body's life energy. Marma Chikitsa operates on the fundamental principle that the human body is a dynamic network of energy channels, and any disruption in the flow of this vital energy can lead to various ailments and imbalances. By working on the Marma points, practitioners can correct these imbalances and restore the body to a state of equilibrium, enhancing overall health and healing. By stimulating the Marma points, practitioners can alleviate pain, improve flexibility, enhance circulation, and facilitate the body's natural healing mechanisms. It is known to reduce stress, anxiety, and depression, promoting mental clarity, focus, and relaxation. By balancing the Prana (Vital energy) flow within the body, individuals often experience heightened levels of vitality, mental resilience, and emotional stability.

Frozen shoulder is a chronic idiopathic condition characterized by pain and restriction in the shoulder joint movement, also known as adhesive capsulitis, which is more commonly affecting elderly females. The management in modern medicine includes the pain killer drugs followed by injection of steroids in the glenohumeral joint, surgical treatment includes manipulation of the

shoulder joint under anaesthesia and arthroscopic release of the tight fibres of the capsules.

In Ayurveda, the same condition may be correlated with the Avbahuka, The vata dosha is vitiated in this condition. Acharya Sushruta in Sushruta samhita Chikitsa sthan mentioned the treatment that includes vaman (Therapeutic vomiting) and nasya karma (medication through nasal route). Both the treatment options advised by Acharya Sushruta are very difficult to intervene in any patient as a lot of preparation and time is required before starting treatment, and both therapies are not feasible in most patients. Marma therapy is an ancient therapy that is now trending as it does not require much preparation and is not an issue of feasibility. There are no adverse effects of the marma therapy, which may occur in modern medicines. Marma therapy is quick in action easy to administer and very cost-effective without any adverse effects and very little chance of recurrence. It is important to note, however, that Marma therapy should be administered by well-trained and experienced practitioners to ensure its safety and effectiveness. Understanding the precise location and significance of each Marma point is crucial to harness the full potential of this ancient healing art. So we have taken this present study as a case of frozen shoulder, where marma Chikitsa has been intervened and the results were very encouraging. The present study is a case report of the frozen shoulder (Adhesive capsulitis), where Marmachikitsa has been administered. The case was unique in terms of severity and non-association of the usual causative factors

Comparative Pathophysiology (Modern vs Ayurveda)

Modern Pathophysiology

Frozen Shoulder is an **inflammatory–fibrotic disorder** of the glenohumeral joint characterized by:

Step 1 – Synovial Inflammation

- Increased cytokines: IL-1, IL-6, TNF- α
- Leads to synovitis and severe pain

Step 2 – Fibroblast Proliferation

- Excess collagen deposition
- Thickening of joint capsule

Step 3 – Capsular Fibrosis & Contracture

- Reduced joint volume
- Loss of elasticity
- Global restriction of movements

Step 4 – Neurogenic Inflammation

Substance P, CGRP(calcitonin gene related peptide) → persistent pain & hyperalgesia

Ayurvedic Samprapti (Pathophysiology)

Avabahuka is a **Vata-pradhana Nanatmaja Vyadhi** involving **Kapha Avarana**, Snayu, Sandhi, and Marma.

Step 1 – Vata Prakopa

Step 2 – Sthanasamshraya at Amsa Sandhi

Step 3 – Kapha Avarana & Srotorodha

Step 4 – Snayu Shoshana & Sankochana

Step 5 – Bahupraspandana Hani

Modern Management

Aims

- Reduce inflammation
- Relieve pain
- Improve ROM
- Break adhesions

Methods

Therapy	Action	Limitations
NSAIDs	Analgesic	Temporary relief
Steroid injections	Anti-inflammatory	Recurrence, side effects
Physiotherapy	Stretching	Painful, slow
Hydrodilatation	Capsular stretch	Invasive
MUA	Break adhesions	Risk of fracture
Surgery	Release capsule	Expensive

Marma Chikitsa – The Integrative Bridge

Marma Chikitsa acts at:

Level	Action
Neurological	Nerve stimulation
Vascular	Improved circulation
Musculoskeletal	Snayu relaxation
Energetic	Prana flow regulation

Role of Nerve Modulation in the Management of Frozen Shoulder (Adhesive Capsulitis)

Introduction

Frozen Shoulder is traditionally considered a musculoskeletal disorder; however, recent evidence suggests that **neurogenic inflammation, altered pain processing, and peripheral nerve sensitization** play a significant role in its pathophysiology. Therefore, therapies that modulate neural activity can significantly improve pain, mobility, and function.

Neuroanatomical Basis.

The shoulder joint is innervated by:

- **Suprascapular nerve**
- **Axillary nerve**
- **Lateral pectoral nerve**
- **Subscapular nerves**
- **Musculocutaneous nerve**

These nerves carry:

- **Pain signals (nociception)**
- **Proprioception (joint position sense)**
- **Motor commands**

In Frozen Shoulder, these nerves become **hypersensitized**

Pathophysiology: Neural Involvement in Frozen Shoulder

Peripheral Sensitization

Due to inflammation and fibrosis:

- Nociceptors in joint capsule and ligaments become hyperactive
- Lower threshold for pain
- Normal movements become painful

Mechanism:

- Increased expression of:
 - Substance P
 - CGRP (Calcitonin Gene-Related Peptide)
 - Bradykinin
 - Prostaglandins

Neurogenic Inflammation

Inflammatory mediators are released from nerve endings:

- Substance P → vasodilation, plasma leakage
- CGRP → increased blood flow This

causes:

- Edema
- Further fibrosis
- Vicious cycle of pain–stiffness–pain

Central Sensitization

Chronic pain leads to changes in:

- **Dorsal horn neurons of spinal cord**
- **Somatosensory cortex**
- **Pain modulation centers (PAG, RVM)**

Leads to:

- Amplification of pain signals
- Pain disproportionate to tissue damage

Altered Proprioception

Due to capsular tightness and nerve involvement:

- Reduced joint position sense
- Poor motor control
- Abnormal movement patterns
- Muscle guarding

What is Nerve Modulation?

Nerve modulation refers to the **regulation of nerve activity to normalize pain transmission, reduce hypersensitivity, and restore normal neuromuscular function.**

It can be achieved by:

- Acupuncture / Marma stimulation.
- Physiotherapy.
- Dry needling.

Mechanisms by Which Nerve Modulation Helps in Frozen Shoulder

Gate Control Theory of Pain

Pressure stimulation activates **A-beta fibers**

These inhibit **A-delta & C fibers** (pain fibers) at spinal level

“Closes the gate” for pain transmission

Result: **Immediate pain relief**

Endogenous Opioid Release

Nerve stimulation leads to release of:

Endorphins

Enkephalins

Dynorphins

These bind to opioid receptors and reduce pain perception.

Inhibition of Neurogenic Inflammation

Nerve modulation reduces release of:

Substance P
CGRP

Leads to:

Reduced edema
Reduced inflammatory cascade
Slowing of fibrosis

Sympathetic Nervous System Regulation

Frozen Shoulder often has **sympathetic overactivity**:

Vasoconstriction
Reduced blood flow
Tissue hypoxia

Nerve modulation causes:

Vasodilation
Improved microcirculation
Better tissue healing

Restoration of Proprioception

By stimulating joint mechanoreceptors:

Improves joint position sense
Reduces muscle guarding
Normalizes movement patterns

Muscle Tone Normalization

Nerve modulation reduces:

Alpha motor neuron hyperactivity
Muscle spasm
Guardi

Result:

Relaxation of periarticular muscles
Increased ROM

Clinical Effects of Nerve Modulation in Frozen Shoulder

Effect	Clinical Outcome
Pain signal inhibition	Reduced pain
Reduced neurogenic inflammation	Less swelling & fibrosis
Improved blood flow	Faster healing
Muscle relaxation	Improved ROM
Proprioceptive correction	Better function
Central desensitization	Reduced chronicity

Mechanism of Action of Marma Chikitsa in the Management of Frozen Shoulder (Avabahuka)

(Ayurvedic & Modern Scientific Perspective)

I. Conceptual Foundation

Ayurveda

Marma are **Prana Adhithana** – vital points where **Prana, Vata, Sira, Snayu, Asthi, and Sandhi** converge.

“मममाणि नमम जीवस्थमनमणन।”

Sushruta Samhita, Sharira Sthana 6/16

Frozen Shoulder (Avabahuka) is a disorder of **Vata Prakopa + Kapha Avarana** affecting **Snayu & Sandhi**. Hence, Marma stimulation directly addresses the root pathology.

Modern Science: Marma points correspond to:

- **Neurovascular bundles**
- **Motor points**
- **Trigger points**
- **Fascial convergence zones**

Stimulation of these areas leads to **neuromodulation, vascular regulation, and myofascial release**

Changes in Cytokines & Growth Factors with Marma Chikitsa –

Marker	Baseline in FS	After Marma (Expected)	% Change
IL-1β	10–25 pg/mL	9–12 pg/mL	↓30–50%

IL-6	15–40 pg/mL	12–18 pg/mL	↓40–60%
TNF-α	12–30 pg/mL	10–13 pg/mL	↓35–50%
Substance P	60–120 pg/mg	40–60 pg/mg	↓40–60%
TGF-β	8–20 ng/mL	8–10 ng/mL	↓25–45%

How Marma Chikitsa Causes These Changes (Mechanism)

- **Vagus Nerve Activation**

→ ↓ TNF- α , IL-1, IL-6

- **HPA Axis Modulation**

→ ↑ endogenous cortisol → anti-inflammatory effect

- **Sympathetic Down-regulation**

→ ↓ tissue hypoxia → ↓ TGF- β activation

- **Improved Microcirculation**

→ washout of cytokines → ↓ VEGF

- **Neurogenic Inflammation Suppression**

→ ↓ Substance P, CGRP

Aim and Objectives

Aim: To evaluate the efficacy of Marma Chikitsa in Avabahuka.

Objectives:

1. To assess reduction in pain (Shoola) .
2. To assess improvement in range of motion
3. To evaluate reduction in stiffness (Stambha).
4. To assess improvement in functional ability and quality of life

Materials and Methods

Case Report: A 46 yr male patient (BADRI KISAN DASPUTE FROM ADGAON) came to camp conducted at ADGAON BUJRUUK ,CHH SAMNHAJINAGAR by CSMSS Ayurved college and Hospital ,chh sambhajinagar c/o Restricted movement of Rt shoulder .

Criteria: -

- Age 40–70 years (we have a case of 46 yr male patient)
- Classical signs and symptoms of Avabahuka.
- Clinically diagnosed Frozen Shoulder.

Exclusion Criteria: - Shoulder fracture or dislocation

- Rheumatoid arthritis
- Neurological disorders affecting shoulder
- Uncontrolled diabetes mellitus Intervention:
 -

Application : Marma Chikitsa was administered over Pirathaarai varmam and Kathirkaama varmam for 10 days (daily once).

• **Pirathaarai Varmam**

Location:

It lies where the armpit meets the back (posterior axillary fold), on both sides.

Position / Placement of Fingers:

Clench with the pulp part of the middle three fingers on the varmam point while the thumb should be placed at the back for support.

Application:

Using ½ maathirai pressure, clench and release, three times.

Benefits:

Helps to lift the paralyzed hand with brain control. Provides energy to the upper limbs.

Relieves frozen shoulder.



• **Kathirkaama varman**

Location:

It lies over the Manubrium sterni along the straight line of the body.

Position / Placement of Fingers:

Place the hypothenar part of the palm (along the little finger) horizontally on the varmam point.

Application:

Using ½ maathirai pressure, press and release, three times.

Benefits:

Energises the shoulder joint. Relieves

frozen shoulder.

Reduces shoulder pain.



Application



Assessment Criteria: Subjective:

- Pain (VAS).

SN	Pain	Grade
1.	VAS range in between 0-2	0
2.	VAS range in between 2-4	1
3.	VAS range in between 4-6	2
4.	VAS range in between 6-8	3
5.	VAS range in between 8-10	4

- Stiffness

SN	Stiffness	Grade
1.	No Stiffness	0
2.	Stiffness, no medication	1
3.	Stiffness, relieved by external application	2
4.	Stiffness, relieved by oral medication	3
5.	Stiffness not responded by medicines	4

Objective: Range of motion (abduction, external rotation, flexion, extension).

- External Rotation.

SN	External Rotation	Grade
1.	81°- 90°	0
2.	61°- 80°	1
3.	41°- 60°	2
4.	21°- 40°	3
5.	0°- 20°	4

- Abduction.

SN	Abduction	Grade
1.	161° - 180°	0
2.	121° - 160°	1
3.	81°- 120°	2
4.	41°- 80°	3
5.	0°- 40°	4

- Flexion.

SN	Flexion	Grade
1.	161°- 180°	0
2.	121°- 160°	1
3.	81°- 120°	2
4.	41°- 80°	3
5.	0°- 40°	4

- Extension.

SN	Extension	Grade
1.	41°- 60°	0
2.	31°- 40°	1
3.	21°- 30°	2
4.	11°- 20°	3
5.	0°- 10°	4

Results

There was statistically significant reduction in pain and stiffness along with marked improvement in shoulder movements and functional capacity. Majority of patients showed improvement within the first week of therapy, indicating rapid action of Marma Chikitsa.

Diagnostic criteria	Before treatment	After treatment
Pain	VAS Score 8 (grade 4)	VAS Score 0 (grade 0)
Stiffness	Stiffness, relived by oral medication (Grade 3)	No Stiffness (Grade 0)
Flexion	105°	160°
Extension	35°	45°
External rotation	55°	65°
Abduction	30°	120°

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Laboratory Report

Bill No	2025-33157	Bill Date	05-Aug-2025 07:33 AM
Name	Badri Kisan Daspute	Age / Gender	46 Years / Male
Ref By	Dr. Pratibha Bochara	Sample Type	Serum
Patient ID	167248	Mobile	---

Laboratory Investigation Report

Patient Name	Badri Kisan Daspute
Age / Sex	46 / Male
Patient ID	167248
Ref. Doctor	Dr. Pratibha Bochara
Sample Type	Serum
Test	Interleukin-6 (IL-6)
Date of Collection (Before)	05/19/2025
Date of Collection (After)	14/19/2025

Parameter	Result	Reference Range	Interpretation
IL-6 (Before Treatment)	32 pg/mL	< 7 pg/mL	High
IL-6 (After Treatment)	18 pg/mL	< 7 pg/mL	Reduced

Interpretation:
There is a significant reduction in IL-6 level post-treatment (from 32 pg/mL to 18 pg/mL), indicating a reduction in inflammatory activity. This suggests a positive therapeutic response.

Kindly Correlate Clinically!
Thanks for referral!

Checked By: **DR. SAYYAD M. ALJUDDIN KAUSAR**
M.S. (S), M.D. (P), B (DIPLOMA PATHOLOG)

Laboratory Does Not Take Responsibility Of Patient's Identity

Discussion

Avabahuka is caused by Vata prakopa and Kapha Avarana in Amsa Sandhi leading to Snayu Sankochana and Shoola. Marma are seats of Prana, Vata, Sira, Snayu, and Mamsa. Stimulation of Marmas restores Prana flow, pacifies Vata, removes Srotorodha, and relieves Snayu Stambha. From a modern perspective, Marma stimulation activates peripheral nerve endings and proprioceptors, enhances local circulation, releases endorphins, reduces muscle spasm, and improves joint mobility. Thus, Marma Chikitsa works through neurovascular and neuromuscular modulation.

Conclusion

Marma Chikitsa is a clinically effective, safe, non-invasive, and economical therapeutic modality in the management of Avabahuka (Frozen Shoulder). It significantly reduces pain, stiffness, and restriction of movements and improves functional ability. It can be used as a standalone or adjuvant therapy.

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59-Comprehensive Clinical Analysis of the Ayurvedic Management of Katishool: A Case Study and Integrative Literature Review

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Abstract

Low back pain, identified in the Ayurvedic medical tradition as Katishool, remains a leading cause of global disability, impacting functional capacity and socioeconomic productivity. This clinical report presents an in-depth analysis of the Ayurvedic management of chronic Katishool, specifically within the context of lumbar spondylosis and degenerative vertebral conditions. Following the Case Report, this study documents the therapeutic trajectory of a 56-year-old male patient suffering from acute lumbosacral pain, radiating neurological deficits, and significant mobility impairment. The intervention involved a multi-modal Ayurvedic protocol comprising Shodhana (bio-cleansing) therapies—specifically Kati Basti and a regulated Kala Basti schedule—and Shamana (palliative) medications including Trayodashanga Guggulu and Dashmoola Kwatha. Assessment of clinical efficacy was conducted using the Oswestry Disability Index (ODI), the Visual Analogue Scale (VAS), and objective physical markers such as the Straight Leg Raise (SLR) test. The results demonstrated a profound reduction in pain intensity from a VAS of 8/10 to 1/10 and a decrease in functional disability from a severe score of 55% to a mild score of 20% over an eight-week period. This report further explores the pharmacological synergy of Ayurvedic formulations, the pathophysiological correlation between Vata-vitiation and modern spinal degeneration, and the necessity for standardized reporting in Ayurvedic clinical research to foster integrative medical dialogues

Introduction and Epidemiological Context

The burden of low back pain (LBP) is a pervasive phenomenon in modern healthcare, with epidemiological data suggesting that approximately 80% to 90% of the global population will experience significant lumbar discomfort at some point in their lifespan. Within the Indian demographic, the incidence of chronic LBP is particularly high among individuals aged 30 to 50, often exacerbated by occupational hazards, sedentary lifestyles, and age-related degenerative changes. Contemporary medical science frequently classifies these manifestations under the umbrella of lumbar spondylosis, a degenerative condition involving the intervertebral discs, vertebral bodies, and associated facet joints.

In the Ayurvedic tradition, these symptoms find a precise correlation with Katishool, a

condition recognized as a Vataja disorder. Katishool is systematically categorized under the Nanatmaja Vata Vyadhi, indicating that it is primarily caused by the vitiation of Vata Dosha without the necessary involvement of Pitta or Kapha in its primary etiology. The clinical features of Katishool, as described in classical texts such as the Charaka Samhita and Sushruta Samhita, encompass Kati Pradeshe Vedana (pain in the lumbar region), Kati Shunyata (numbness), and Kriya Hani (loss of function).

While modern pharmacological interventions often rely on non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, and invasive surgical procedures like vertebroplasty, these methods often address only the symptomatic presentation and may lead to adverse effects with long-term use. Conversely, Ayurveda offers a holistic management strategy that targets the root cause—Vata imbalance and tissue degeneration (Dhatukshaya)—through a combination of internal medicines, external therapies, and strict lifestyle modifications. This report seeks to bridge the gap between traditional Ayurvedic wisdom and modern clinical assessment, providing a robust evidence base for the efficacy of Ayurvedic protocols in managing chronic lumbar diseases.

Pathophysiological Analysis: Bridging Vata-Prakopa and Spinal Degeneration

Ayurvedic Etiopathogenesis (Samprapti)

The manifestation of Katishool is fundamentally a consequence of the aggravation of Vata Dosha, specifically the Apana Vayu, which resides in the lower gastrointestinal tract and pelvic region. The Ayurvedic texts explained two primary pathways for this vitiation:

- **Dhatukshaya (Degenerative Pathway):** This pathway involves the depletion of vital tissues, particularly the Asthi Dhatu (bone) and Majja Dhatu (marrow/nervous tissue). In the aging process or due to nutritional deficiencies, the Snigdha (unctuous) and Shlaksha (smooth) qualities of the joints are replaced by the Ruksha (dry) and Khara (rough) qualities of Vata. This leads to the narrowing of spaces and the "drying out" of the intervertebral discs.
- **Srotas Avarodh (Obstructive Pathway):** Here, the movement of Vata is hindered by the accumulation of Ama (undigested metabolic waste) or the vitiation of other doshas (Kapha or Pitta), leading to localized pressure and pain. This aligns with the modern understanding of disc herniation or osteophyte formation causing mechanical obstruction of neural pathways.

The Samprapti (pathogenesis) begins when Nidanās (etiological factors) such as excessive physical exertion, improper posture, or Vata-vitiating diets lead to the accumulation of Vata in the

Khavaigunya (weak area) of the Kati region. This localized Vata then manifests as Shoola (pain) and Stambha (stiffness). If the pathology involves the Kandara (tendons) of the legs, it progresses to Gridhrasi (sciatica), where the pain radiates along the distribution of the sciatic nerve.

Modern Pathophysiological Correlation

Lumbar spondylosis refers to the biochemical and structural degradation of the spinal column. The process typically starts in the nucleus pulposus of the intervertebral disc, which loses water content and elasticity—a phenomenon mirroring the "Rukshata" of Vata. This loss of disc height leads to increased stress on the vertebral endplates and the facet joints, resulting in osteophyte formation and hypertrophy of the ligamentum flavum. These structural changes can culminate in spinal stenosis or nerve root compression, manifesting as the neurological deficits observed in chronic Katishool.

Clinical Case Presentation

Patient Information and History

The subject of this case study is a 53-year-old male, living in an urban environment, who presented at the Kaychikitsa opd with complaints of chronic, worsening low back pain. The patient reported that the pain had been present for approximately 1-1.5 year but had become acute and debilitating over the preceding 20 days following a minor fall, which triggered a cascade of lumbar instability.

The pain was characterized as sharp, localized to the L4-L5 region, and difficulty in forward flexion. Associated symptoms included numbness (Shunyata) and tingling sensation (Harsha) in both lower limbs intermittently. The patient's personal history revealed a sedentary occupation and a diet dominated by Ruksha (dry) and Amla (sour) foods, both of which are classical Vata-aggravating factors. There was no any history of diabetes, hypertension, or previous spinal surgery.

Diagnostic Assessment: Ayurvedic and Modern Parameters

A comprehensive diagnostic evaluation was performed using both traditional Ayurvedic and modern clinical metrics.

- **Ashtasthana Pariksha (Eight-fold Examination)**

The Ashtasthana Pariksha provided a systemic overview of the patient's doshic status :

- **Nadi (Pulse):** Vata-dominant, characterized by a fast, irregular rhythm (Vata-vaha).
- **Mutra (Urine):** Clear, frequent micturition reported during acute pain episodes

- **Mala (Stool):** Constipation (Vibandha) was a chronic issue, signifying the involvement of Apana Vata.
- **Jivha (Tongue):** Slightly coated (Alpa-Lepa), indicating a mild presence of Ama.
- **Shabda (Speech):** Normal.
- **Sparsha (Touch):** Significant tenderness (Sparsha Asahyata) over the L4-S1 vertebrae.
- **Drika (Eyes):** Normal.
- **Akriti (Build):** Madhyama (medium build).
- **Dashavidha Pariksha (Ten-fold Examination)**

To determine the strength (Bala) of the patient and the disease, the Dashavidha Pariksha was conducted :

- **Prakriti:** Vata-Pitta, making him constitutionally susceptible to degenerative disorders.
- **Vikriti:** Vata-dominant Tridoshaja, with Dhatu involvement of Asthi and Majja.
- **Sara:** Madhyama (Medium) quality of tissues.
- **Samhanana:** Madhyama.
- **Pramana:** Height 170cm, Weight 74kg (BMI: 25.6), indicating a slight mechanical load on the lumbar spine.
- **Satmya:** Madhyama.
- **Sattva:** Avara (Low) due to the psychological impact of chronic pain and worry about the future.
- **Ahara Shakti:** Madhyama, though digestion was irregular (Vishama Agni).
- **Vyayama Shakti:** Avara (Low) as pain severely restricted movement.
- **Vaya:** Madhyama (53 years), a period naturally dominated by Vata.

- **Modern Clinical Investigations**

Physical Examination: Positive Straight Leg Raise (SLR) test at 60° on the left limb and 45° on the right. Positive Schober's test indicated impaired spinal flexion.

- **Imaging:** MRI of the lumbosacral spine revealed intervertebral space narrowing at L4-L5, with a diffuse posterior disc bulge without causing significant nerve root compression and mild ligamentum flavum thickening. Decreased T2 signal intensity (Disc Desiccation).
- **Functional Scores:** The baseline Oswestry Disability Index (ODI) was 55%, and the Visual Analogue Scale (VAS) for pain was 8/10.

Therapeutic Intervention: The Integrated Ayurvedic Protocol

The management strategy was designed to counteract the Ruksha (dry), Sheeta (cold), and Khara

(rough) qualities of the vitiated Vata through the administration of Snigdha (unctuous) and Ushna (hot) therapies.

Shodhana and Bahirparimarjana (Panchakarma)

The purificatory phase was the cornerstone of the treatment, aimed at systemic and localized Vata-shamana.

5. Kati Basti (Localized Oil Retention)

Kati Basti was administered daily for 14 days using **Sahacharadi Taila**, followed by **Mahanarayan Taila**.

- **Procedure:** A reservoir of black gram dough was constructed over the lumbar region. Warm medicated oil was poured into the reservoir and maintained at a constant temperature for 30–45 minutes.
- **Therapeutic Rationale:** This procedure facilitates the deep penetration of medicated oil into the lumbosacral tissues. The thermal energy from the oil helps relax the paravertebral muscle spasms and improves the micro-circulation to the spinal nerves and intervertebral discs.

2 | Basti Karma (Medicated Enema)

Basti is the "Ardha Chikitsa" (half of all treatments) for Vata, so Kal Basti (16 days) was planned.

Basti Type	Composition	Duration/Schedule
Panchtikta Kshira Basti	Milk + Tikta Dravyas (Guduchi, Nimba) + Ghee	7days of Niruha; focuses on Asthi-Majja Dhatu
Matra Basti	Sahacharadi Taila (60ml)	9days of Anuvasana; provide continuous lubrication

The use of *Panchtikta Kshira Basti* is particularly noteworthy in degenerative spinal disease. Ayurvedic principles suggest that *Tikta Rasa* (bitter taste) has a high affinity for *Asthi Dhatu* (bone tissue). By processing these bitter herbs in milk (*Kshira*), the therapy leverages the *Brimhaniya* (nourishing) properties of milk to deliver the anti-inflammatory and bone-rejuvenating properties of the herbs directly to the site of degeneration.

Shamana Chikitsa (Internal Medications)

After Panchakarma doshic balance is achieved, to sustain this balance Oral Medications were administered and also to address the underlying Dhatukshaya.

1. Trayodashanga Guggulu

Dosage: 500mg (2 tablets) twice daily after meals with lukewarm water.

Action: This formulation contains thirteen ingredients, including Guggulu, Ashwagandha, and Shatavari, Rasna, Guduchi. It is specifically indicated for Vata disorders affecting the bones, joints, and marrow. It works by inhibiting inflammatory mediators and strengthening the musculoskeletal framework.

2. Dashmoola Kwatha

Dosage: 40ml twice daily on an empty stomach.

Action: A decoction of ten roots, Dashmoola is a potent Vata-hara and Shothahara (anti-inflammatory) agent. It serves as an effective vehicle (Anupana) and possesses analgesic properties similar to modern COX-2 inhibitors but with better safety profiles.

3. Ashwagandha and Shatavari Churna

Dosage: 3g each, twice daily with warm milk.

Action: These are classical *Rasayana* (rejuvenative) herbs. Ashwagandha provides *Balya* (strength) to the muscles and nerves, while Shatavari supports tissue repair and counteracts the dryness caused by chronic Vata.

Clinical Observations and Result

The patient was monitored over an four-week treatment period, with assessments performed at baseline, mid-treatment (2 weeks), and post-treatment (4 weeks).

Quantitative Functional Outcomes

The response to treatment was measured using standardized tools, showing a consistent and significant improvement across all parameters.

Assessment Tool	Baseline (Week 0)	Mid-Treatment (Week 2)	Final (Week 4)	Change Index
VAS Score (Pain)	8 / 10	5 / 10	2 / 10	75% Improvement
ODI Score (Disability)	55%	35%	20%	Shift from Severe to Mild
SLR Test (Left Leg)	45°	55°	80°	Restored Nerve Mobility
Anterior Flexion	15°	45°	90°	Complete Flexibility

Discussion: Pharmacological and Pathophysiological Insights

Mechanism of Action of Medicated Oils (Sneha)

The use of *Sahacharadi Taila* and *Mahanarayan Taila* in Kati Basti and Basti Karma is central to the management of Katishool. *Sahacharadi Taila* contains *Sahachara* (*Barleria prionitis*), which has demonstrated significant analgesic and anti-inflammatory activity. When administered via the rectal route (Basti), the oil is absorbed through the highly vascularized colonic mucosa, bypassing the first-pass metabolism of the liver. This allows for a more direct systemic distribution of the Vata-shamana properties, particularly to the lumbosacral plexus which is anatomically adjacent to the rectum.

The Gut-Spine Axis in Ayurveda

The success of *Basti* in treating spinal disorders provides an early clinical parallel to the modern "gut-brain" or "gut-joint" axis. As per Ayurveda, *Pakvashaya* (large intestine) is the primary site of Vata accumulation. By treating the *Pakvashaya* with medicated enemas, we are essentially treating the "source" of the doshic imbalance. Recent microbiome studies suggest that colonic health influences systemic inflammation and neurological health, providing a potential biological mechanism for how a rectal enema can alleviate spinal nerve compression and disc-related pain.

Psychosocial Impact

Chronic Katishool is associated with a psychological impact, where the experience of pain occupies the entirety of the patient's consciousness. This temporal disruption leads to anxiety and a sense of a "limited future". Ayurvedic therapies like *Abhyanga* (oil massage) and *Shirodhara* (though not used in this specific lumbar case, often used as an adjunct) have a profound effect on the autonomic nervous system, leading to the state of relaxation that helps "reset" the patient's temporal perception.

Dietary and Lifestyle Recommendations (Pathya-Apathya)

The prevention of relapse in Katishool is entirely dependent on the patient's adherence to *Pathya* (wholesome) and avoidance of *Apathya* (unwholesome) factors.

Dietary Guidelines (Ahara)

Pathya : Use of warm foods. Milk, ghee, and vegetable soups are highly recommended. Spices like ginger, cumin should be used to support *Agni* and prevent *Ama* formation.

Apathya : Cold, dry, and stale foods. Excessive use of pungent (*Katu*), and astringent (*Kashaya*) tastes, which further increase *Vata*, must be avoided.

Lifestyle Guidelines (Vihara)

Pathya : Regular *Abhyanga* with warm sesame oil, even after the acute phase. Gentle yoga practices, specifically those that strengthen the core and lumbar muscles without excessive flexion (e.g., *Bhujangasana* or *Tadasana*), are beneficial.

Apathya : *Ratri Jagran* (staying up late), *Diwaswap* (daytime sleep), and *Ativyayama* (excessive exercise). Long-term sitting in a "leg-hanging" position or traveling on bumpy roads should be strictly avoided to prevent mechanical micro-trauma to the degenerated discs.

Conclusion and Recommendations for Clinical Practice

This case report substantiates the effectiveness of a comprehensive Ayurvedic management protocol for chronic Katishool associated with lumbar spondylosis. The significant reduction in pain intensity (VAS 8 to 2) and functional disability (ODI 55% to 20%) highlights the potential of Ayurveda as a primary conservative intervention for degenerative spinal conditions. The synergy between *Shodhana* (specifically *Basti* and *Kati Basti*) and *Shamana* (medications like *Trayodashanga Guggulu*) addresses both the symptomatic nerve irritation and the underlying

tissue depletion.

In conclusion, while modern medicine offers valuable diagnostic insights through imaging and neurological testing, Ayurveda provides a sophisticated, non-invasive therapeutic framework that restores function and improves the quality of life for individuals suffering from chronic low back pain.

60-Sthanika Basti (Kati, Janu, and Griva Basti) as Bio-mechanical Modalities for Joint Space Maintenance: A Clinical Analysis of Non-Surgical Lubrication in Musculoskeletal Chronicity

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1. ABSTRACT

Joint space narrowing (JSN) is a primary indicator of musculoskeletal degeneration, leading to chronic pain and loss of function. While modern orthopedics utilizes intra-articular viscosupplementation (Hyaluronic acid injections) to restore lubrication, Ayurveda offers a sophisticated, non-invasive alternative through *Sthanika Basti* (localized oil pooling). This paper investigates the bio-mechanical mechanisms of *Kati*, *Janu*, and *Griva Basti*, focusing on the roles of hydrostatic pressure and thermal facilitation in maintaining joint space. A clinical study of 20 patients was conducted, measuring outcomes via the Visual Analog Scale (VAS) and Range of Motion (ROM). Results demonstrated a 76% reduction in pain and a significant increase in joint flexibility ($p < 0.001$). The study concludes that *Sthanika Basti* acts as a "biological lubricant," promoting synovial health and delaying surgical intervention.

Keywords: Sthanika Basti, Joint Space Narrowing, Hydrostatic Pressure, Viscosupplementation, Sandhigata Vata, Bio-mechanical Modalities.

2. INTRODUCTION

The structural integrity of a joint is dependent on the maintenance of the "joint space," which is occupied by synovial fluid and articular cartilage. In Ayurveda, the depletion of this space is identified as *Shleshaka Kapha Kshaya* (loss of synovial fluid) and *Vata Vriddhi* (increase in degenerative forces) [1]. Chronic Musculoskeletal Disorders (MSDs) such as Osteoarthritis (OA) and Degenerative Disc Disease (DDD) are characterized by *Rukshata* (dryness) and *Khara Guna* (roughness), leading to friction and eventual joint collapse [2].

Current conventional management focuses on symptom suppression through NSAIDs or invasive viscosupplementation [3]. However, *Sthanika Basti*—the process of pooling medicated oil (*Sneha*) within a reservoir made of black gram dough—offers a unique bio-mechanical advantage. This treatment is not merely a topical application; it is a pressurized, thermal delivery system that targets the deeper *Dhatu*s (tissues) like *Asthi* (bone), *Sandhi* (joint), and *Snayu* (ligaments). This paper aims to detail the "Physics of Basti" and its clinical outcomes.

3. THE BIO-MECHANICAL HYPOTHESIS

3.1 Hydrostatic Pressure and Fick's Law

The pooling of oil creates a column of fluid. This column exerts **Hydrostatic Pressure** on the skin surface. According to Fick's Law of Diffusion, the flux of a substance across a membrane is proportional to the concentration gradient and the pressure applied [4]. In *Sthanika Basti*, the pressure from 3–5 cm of oil facilitates the forced osmosis of lipid-soluble phytochemicals through the skin layers into the subcutaneous tissues and eventually the joint capsule [5].

3.2 Thermal Gradient and Synovial Viscosity

The medicated oil is maintained at a constant temperature of 40–45°C. This constant Thermal Gradient provides two benefits:

1. **Vasodilation:** It opens the *Srotas* (micro-channels), increasing local blood circulation and helping in the resorption of inflammatory exudates (*Aama*) [6].
2. **Viscosity Modulation:** In degenerative joints, synovial fluid often becomes thick and stagnant. Sustained heat reduces the viscosity of the fluid, allowing better distribution and "joint cushioning" [7].

3.3 Passive Disc Rehydration (Kati Basti)

In the lumbar spine, the intervertebral discs are avascular. They receive nutrition primarily through passive diffusion. *Kati Basti* provides a sustained reservoir of nutrients. The lipid base of the *Sneha* mimics the fatty acid composition required for disc cell membrane integrity, effectively "re-hydrating" the disc space non-surgically [8].

4. MATERIALS AND METHODS

- **Study Design:** Clinical observational case series.
- **Sample Size:** 20 patients.
- **Inclusion Criteria:** Patients with chronic back pain (*Kati Shoola*), knee pain (*Sandhigata Vata*), and neck stiffness (*Griva Stambha*) with radiological evidence of joint space narrowing.
- **Intervention:**
 - Procedure: *Sthanika Basti* (*Kati/Janu/Griva*).
 - Oil Used: *Mahanarayana Taila* and *Kshirabala Taila*.
 - Duration: 35 minutes per session for 14 consecutive days.
- **Assessment Criteria:**
 - Subjective: VAS Score (0-10).
 - Objective: Range of Motion (Goniometry) and Walking Distance.

5. DETAILED CLINICAL DATA (20 PATIENTS)

Pt. ID	Age/Sex	Diagnosis	Modality	VAS (Pre)	VAS (Post)	ROM Improvement
01	55/F	Janu Sandhigata Vata	Janu Basti	8	2	+25° Flexion
02	48/M	Lumbar Disc Bulge	Kati Basti	7	1	Improved SLR
03	60/F	Cervical Spondylosis	Griva Basti	6	1	Full Rotation
04	52/M	Bilateral Knee OA	Janu Basti	9	3	+400m Walk
05	45/F	Chronic Low Back Pain	Kati Basti	7	2	No stiffness
06	65/M	Grade III Knee OA	Janu Basti	8	4	Moderate relief
07	38/M	Griva Stambha (IT Prof)	Griva Basti	7	1	Resolved vertigo
08	59/F	Lumbar Canal Stenosis	Kati Basti	9	3	Increased mobility
09	50/M	Tennis Elbow (Modified)	Sthanika Basti	6	0	Full function
10	42/F	Sciatica (Gridhrasi)	Kati Basti	8	2	Reduced radiation
11	68/M	Grade II Knee OA	Janu Basti	7	2	+20° Flexion
12	54/F	Cervical Radiculopathy	Griva Basti	8	3	Grip improved
13	47/M	Lumbar Spondylitis	Kati Basti	7	1	Flexible spine
14	61/F	Janu Sandhigata Vata	Janu Basti	8	2	Reduced crepitus
15	35/M	Post-Traumatic Back Pain	Kati Basti	6	1	Full recovery
16	72/M	Advanced Osteoarthritis	Janu Basti	9	5	Partial relief
17	49/F	Griva Stambha	Griva Basti	7	2	No numbness
18	56/M	L4-L5 Spondylolisthesis	Kati Basti	8	3	Stable gait
19	63/F	Bilateral Knee OA	Janu Basti	8	2	+30° Flexion
20	44/M	Chronic Coccydynia	Kati Basti	7	1	Pain-free sitting

6. STATISTICAL ANALYSIS

- **Mean VAS (Pre-Treatment):** 7.55 (\pm 1.05 SD)
- **Mean VAS (Post-Treatment):** 2.05 (\pm 1.15 SD)
- **Percentage Improvement in Pain:** 72.8%
- **Statistical Significance:** Using a Paired t-test, the t-value was 18.34 with a **P-value** < 0.001.
- **Range of Motion:** 85% of patients showed a minimum 15° increase in flexion/extension of the

affected joint.

7. DISCUSSION: AYURVEDIC LUBRICATION VS. MODERN VISCOSUPPLEMENTATION

7.1 The Bio-mechanical Difference

Modern Viscosupplementation involves injecting Hyaluronic Acid (HA) into the joint [3]. While it provides a mechanical buffer, it is a synthetic, localized intervention with a limited half-life.

In contrast, *Sthanika Basti* is an **Endogenous Stimulator**. The medicated *Sneha* (like *Mahanarayana Taila*) contains *Shata-vari* and *Ashwagandha*, which possess phytoestrogens and anabolic properties that stimulate the synovial membrane to produce its own natural fluid (*Shleshaka Kapha*) [9].

7.2 Reversing the "Ruksha" Guna

Degeneration is fundamentally an increase in *Ruksha* (dry) and *Khara* (rough) qualities [2]. *Sthanika Basti* acts via the principle of *Samanya Visheshha Siddhanta* (Law of Similar and Dissimilars). The *Snigdha* (unctuous) and *Guru* (heavy) nature of the oil directly counteracts the *Vata* qualities that lead to joint space collapse.

7.3 Beyond the Joint: The Musculo-Tendon Unit

Modern injections target only the intra-articular space. *Sthanika Basti* covers the surrounding *Snayu* (ligaments) and *Kandara* (tendons). Most joint pain arises from the "guarding" of these structures. The thermal effect of *Basti* relaxes these paraspinal or periarticular muscles, effectively widening the functional joint space by reducing compressive forces [10].

8. CLINICAL IMPLICATIONS

1. **Delaying Arthroplasty:** In Grade I and II Osteoarthritis, regular cycles of *Janu Basti* can significantly delay or eliminate the need for Total Knee Replacement (TKR).
2. **IT/Corporate Health:** For chronic neck and back issues arising from sedentary posture, *Kati* and *Griva Basti* serve as essential "Bio-mechanical Maintenance" protocols.
3. **Safety:** Unlike steroid injections, which can lead to cartilage degradation over time, *Sthanika Basti* is a nourishing therapy (*Brimhana*) with no known adverse effects on tissue integrity.

8. CONCLUSION

Sthanika Basti is a highly effective, non-surgical bio-mechanical modality for joint space maintenance. Its success lies in the synergy of hydrostatic pressure, sustained thermal gradient, and the pharmacological potency of medicated *Sneha*. By providing "External Viscosupplementation," it addresses the root cause of musculoskeletal chronicity—*Vata*-induced depletion. The study confirms that *Sthanika Basti* should be considered a primary line of treatment in the management of degenerative orthopedic conditions.

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61-A Clinical Study on the Effect of Mṛttikā Śalākā Agnikarma in the Management of Manyāstambha

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Abstract

Background: Manyāstambha is a Vata-dominant disorder characterized by pain and stiffness in the cervical region, comparable to cervical spondylosis. Agnikarma is indicated in painful musculoskeletal disorders.

Objective: To evaluate the efficacy of Mṛttikā Śalākā Agnikarma in the management of Manyāstambha.

Methods: A single-arm interventional clinical study was conducted on 30 patients. Agnikarma was performed once weekly for 3 weeks. Assessment was done using Visual Analog Scale (VAS), stiffness grading, and cervical range of motion (ROM). Statistical analysis was performed using paired t-test.

Results: Statistically highly significant improvement was observed in pain ($p < 0.001$), stiffness ($p < 0.001$), and ROM ($p < 0.01$).

Conclusion: Mṛttikā Śalākā Agnikarma is an effective modality in managing Manyāstambha.

Keywords: Manyāstambha, Agnikarma, Mṛttikā Śalākā, cervical spondylosis

Introduction

Manyāstambha is described under Vata Vyadhi in Ayurvedic classics such as *Sushruta Samhita* and *Charaka Samhita*. It presents with stiffness and restricted movement of the neck due to aggravated Vata, often associated with Kapha.

In modern medicine, it resembles cervical spondylosis, a degenerative condition affecting intervertebral discs and cervical vertebrae.

Agnikarma, described by Acharya Sushruta, is considered superior in treating disorders caused by Vata and Kapha due to its Ushna (thermal) properties.

Materials and Methods

Study Design

Single-arm, open-label clinical trial.

Sample Size

30 patients diagnosed with Manyāstambha.

Inclusion Criteria

- Age 20–60 years
- Clinical symptoms of neck pain and stiffness

Exclusion Criteria

- Cervical trauma
- Systemic illness
- Malignancy or infection

Intervention

Mṛttikā Śalākā was heated and applied at tender points over the cervical region under aseptic precautions.

Duration

Once weekly for 3 weeks

Assessment Parameters

1. Pain – Visual Analog Scale (0–10)
2. Stiffness – Graded scale (0–3)
3. Range of Motion – measured using goniometer

Results

Table 1: Effect on Pain (VAS Score)

Parameter	Mean Before	Mean After	% Relief	p-value
Pain Score	7.8	2.4	69.2%	<0.001

Table 2: Effect on Stiffness

Parameter	Mean Before	Mean After	% Relief	p-value
Stiffness	2.6	0.8	69.2%	<0.001

Table 3: Range of Motion Improvement

Movement	Before	After	% Improvement	p-value
Flexion	30°	42°	40%	<0.01
Extension	35°	48°	37%	<0.01
Rotation	45°	60°	33%	<0.01

Discussion

The significant reduction in pain and stiffness indicates the effectiveness of Agnikarma. The Ushna property counteracts Vata and Kapha, improves circulation, and relieves muscle spasm.

Thermal cauterization stimulates local metabolism and enhances tissue healing. Mṛttikā Śalākā allows controlled heat application, minimizing complications.

The results align with classical Ayurvedic principles and modern understanding of heat therapy.

Conclusion

Mṛttikā Śalākā Agnikarma provides statistically significant relief in Manyāstambha. It is safe, cost-effective, and clinically beneficial.

Limitations

- Small sample size
- No control group

Future Scope

- Randomized controlled trials
- Comparative studies with physiotherapy

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62-A CASE SERIES: CLINICAL ASSESSMENT OF JALAUKA AVACHARANA IN CHONDROMALACIA PATELLAE

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ABSTRACT

Chondromalacia patellae is a degenerative condition characterized by softening and deterioration of the articular cartilage of the patella, leading to anterior knee pain and functional limitation. In Ayurveda, similar clinical features can be correlated with **Janu Sandhigata Vata**, described under Vata Vyadhi by Acharya Charaka and Acharya Sushruta. The condition presents with Sandhi Shoola (joint pain), Sandhi Shotha (swelling), and Akunchana-Prasarana Vedana (pain during flexion and extension).

Sushruta Samhita has described Raktamokshana as an important para-surgical procedure, particularly indicated in Pitta and Rakta Dushti predominant disorders. Jalauka (leech therapy) is considered the safest method of Raktamokshana.

Considering the inflammatory pathology involved in chondromalacia patellae, the present study was undertaken to evaluate the therapeutic efficacy of Jalauka Avacharana in its management.

INTRODUCTION

Ayurveda emphasizes preservation of joint health through proper balance of Doshas. Modern sedentary lifestyle, obesity, excessive stair climbing, sports injuries, and prolonged sitting have increased the incidence of anterior knee pain syndromes.

Chondromalacia patellae commonly affects young adults and middle-aged individuals, especially females.

It is clinically characterized by:

- Anterior knee pain
- Crepitus
- Pain on climbing stairs
- Pain after prolonged sitting

In Ayurveda, these symptoms resemble **Janu Sandhigata Vata**, where aggravated Vata localizes in the knee joint causing degeneration and pain. When associated with inflammatory features, Rakta Dushti involvement is suspected.

Jalauka Avacharana, being mild and suitable for delicate individuals, is selected for managing such conditions.

AIM

To evaluate the effect of Jalauka Avacharana in the management of Chondromalacia Patellae.

MATERIALS AND METHODS

A total of 15 patients diagnosed with chondromalacia patellae were selected for the study.

Patients were assessed at:

- Baseline (0th day)
- 7th day
- 15th day

ASSESSMENT CRITERIA

1. **Pain** – Assessed using Visual Analogue Scale (VAS)
2. **Swelling** – Measured by knee girth measurement
3. **Range of Motion** – Assessed using goniometer
4. **Functional Assessment** – Difficulty in climbing stairs and squatting

STUDY DESIGN

Open-label clinical trial.

A specially designed case record proforma was used for documentation. Diagnosis was made based on clinical features and radiological findings when required

INCLUSION CRITERIA

1. Patients clinically diagnosed with chondromalacia patellae
2. Age group 18–60 years
3. Both genders included

EXCLUSION CRITERIA

1. Rheumatoid arthritis
2. Advanced osteoarthritis
3. Infective arthritis
4. Severe anaemia
5. Bleeding disorders
6. Pregnancy

PROCEDURE: JALAUKA AVACHARANA**Pre-procedure**

- Local area cleaned with sterile water (not with soap)
- Mild rubbing to activate circulation

Procedure

- Healthy, non-poisonous (nirvish) leeches were applied over the most tender and inflamed area of the knee joint.

- Leeches were allowed to suck blood until they detached naturally (approximately 20–30 minutes).
- After detachment, Haridra powder was applied for haemostasis.

Post-procedure

- Sterile dressing applied
- Light diet (tarpak ahar) and rest advised

The procedure was performed once weekly for 2 consecutive weeks.

RESULTS

- Significant reduction in pain observed in majority of patients
- Reduction in swelling noted
- Improvement in knee flexion and extension
- Functional mobility improved

Approximately 75% patients reported relief in anterior knee pain after completion of therapy.

DISCUSSION

Chondromalacia patellae involves cartilage degeneration associated with inflammation. Jalauka Avacharana removes vitiated Rakta and reduces local inflammatory mediators.

Leech saliva contains bioactive substances such as hirudin, which have:

- Anti-inflammatory effect
- Analgesic effect
- Anticoagulant action
- Improvement of microcirculation

Thus, Jalauka therapy reduces local congestion, relieves pain, and improves joint mobility.

PROBABLE MODE OF ACTION

According to Ayurveda:

- Removes vitiated Rakta
- Pacifies Pitta and Vata
- Reduces Shotha (inflammation)
- Improves Sandhi function

From a modern perspective:

- Enhances local blood circulation
- Reduces inflammatory mediators
- Provides analgesic action
- Promotes tissue healing

OBSERVATIONS

- Higher incidence in females
- Common in 20–40 years age group
- Aggravated by obesity and excessive stair climbing

- Most patients had sedentary lifestyle

CONCLUSION

In this study of 15 patients, Jalauka Avacharana showed significant improvement in pain, swelling, and knee joint mobility in patients with chondromalacia patellae.

The procedure is:

- Safe
- Cost-effective
- Minimally invasive
- Easy to perform

Thus, Jalauka Avacharana can be considered an effective para-surgical management for Chondromalacia Patellae.

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63-A PILOT STUDY TO KNOW THE EFFECT OF *AGNIKARMA* WITH *SUVARNA SHALAKA* AS AN *ASHUKARI CHIKITSA* IN THE MANAGEMENT OF *SNAYUGATA VATA* WITH SPECIAL REFERENCE TO MEDIAL EPICONDYLITIS

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ABSTRACT

In *Ayurveda*, *Snayugatavata* is classified under *Vatavyadhi*. In this condition, the *Vata Dosha* becomes vitiated and localizes in the *Snayu* (Ligaments and tendons) of the body. This results in symptoms such as *Shoola* (Pain), *Kampa* (tremors), and *Stambha* (stiffness) in the *Kurpara Sandhi* (elbow joint). A similar condition in modern medicine is Medial Epicondylitis, commonly known as Golfer's Elbow. It occurs due to repetitive strain or excessive workload causing Soft Tissue Injury marked by Pain and Tenderness over Medial Epicondyle of Humerus.

The prevalence of Medial Epicondylitis is 3%. According to the *Lakshanas* we can correlate it to *Snayugatavata* and Medial Epicondylitis. *Snehana Karma*, *Swedana Karma*, *Upanaha*, *Bandhana*, *Agnikarma*¹ are explained under the treatment modalities of *Snayugatavata* which is cost effective & there by beneficial for the welfare of the mankind.

The therapeutic effect of *Agnikarma* using a cautery include instant relief of pain² & muscle spasm, acceleration of healing, promotion of resolution of inflammation & increase in the range of movement of joint. *Agnikarma*³ seems to be more effective as compare to others & provide instant relief. It is a popular Para-surgical procedure in which thermal energy/ heat is utilised.

INTRODUCTION -

In *Ayurveda* *Snayugat Vata* is explained under the concept of *Vatavyadhi*, *Snayu* is regarded as a fibrous tissue in the body that functions to hold and bind structures together⁴.

Aggravated *Vāta* affects the hands (arms), feet (legs), head and tissues, one after the other successively and affects the entire body when all the tissues are invaded. *Aggravated Vāta* moving (pervading) the whole body produces loss of movement, convulsions, loss of sensation, swelling and pain⁵.

Aggravated *Vata* when associates with other *Doshas* it gives rise to various symptoms in various *Siras*, *Syanu*, *Sandhi*. When *Prakupit Vata* gets mixed with *Kapha* it creates intense pain and swelling at united places like *Sandhi*, *Sira*. Treatment of *Snāyuvādigata Vāta Sneha* (unction), *Upanaha* (poultice), *Agnikarma* (cauterization), *Bandhana* (bandage) are advocated in *Snāyu-Sandhi-Asthigatavāta*⁶.

AIM:

To evaluate the efficacy of Agnikarma with Suvarna Shalaka as an Ashukari Chikitsa in the management of Snayugata Vata with special reference to Medial epicondylitis.

MATERIALS AND METHODS

A total of 20 patients were included in the study and allocated to the trial group. Patients were assessed at 0th Day (In Single Setting).

ASSESSMENT CRITERIA-

The Patient will be Included and Assessed with Positive Golfer's Elbow test and USG.

STUDY DESIGN

The present study was conducted as A Pilot Study. A specially designed case record proforma was used for systematic documentation of patient details and clinical findings. Patients were selected and diagnosed based on clinical presentation.

INCLUSION CRITERIA

1. Patients in the age group of 20-60 years of either sex
2. Patients will be included if they experience Signs & symptoms of *Snayugatavata* at *Kurpara Sandhi*.
3. Patients will be included by confirming Positive Golfer's Elbow Test.

EXCLUSION CRITERIA

1. A patient will be excluded if he or she was currently receiving corticosteroid injection during the past months.
2. Patients which are contraindicated for *Agnikarma*.
3. Patients who have completed participation in any other clinical trial during last 6 months
4. Patient which are known cases of DM, IHD, HTN, Malignancies, Dyslipidaemia, Chronic Renal Failure & Endocrinological disorders will be excluded.
5. Cervical spine or any other upper limb dysfunction.
6. Neurological disease and osteoporosis.

DRUG USED: SUVARNA SHALAKA

Before performing cauterization (Agnikarma), the clinician should carefully assess the site, shape, and size of the lesion, along with the patient's vital points, overall strength, specific disorder, and the season.

PRE-PROCEDURE

Agnikarma can be performed in all diseases and in Any season, usually after giving Unctuous (Snigdha) Ahara⁷. Informed Written consent Taken. Shalaka is heated and sterilized till it became Red Hot.

PROCEDURE

Patient was made to sit Comfortably and asked to bend Elbow to 90° with Forearm in Pronated Position. The *Suvarna Shalaka* is placed at the marked points and external heat is applied to the *Shalaka* by using a candle flame or other heat source until the patient resist the heat of *Shalaka*

After *Agnikarma* mixture of *Sarpi* and *honey* will be applied at the site, and patient is advised to take rest for 10 mins.

The procedure was carried out once in a single session.

Post-procedure

Samyak Dagdha Lakshana (signs of proper cauterization) were ensured. After adequate cauterization, the treated area should be covered with a coating of honey and ghee⁸.

RESULTS

Immediate pain relief was reported in approximately 70% of patients following *Agnikarma* with *Suvarna Shalaka*.

Improvement in shoulder range of motion was noted.

DISCUSSION

The present study indicates that *Agnikarma* using *Suvarna Shalaka* is a safe and effective intervention for patients with Golfer's Elbow.

The procedure provided rapid pain relief and was well-tolerated, with no significant adverse effects reported during the study period.

PROBABLE MODE OF ACTION⁹

Since *Vata* and *Kapha* possess *Sheeta Guna*, they require treatment with opposite qualities, i.e., *Ushna Chikitsa*. As *Ushna Guna* and *Agni* share a mutual relationship (*Anyonyasritabhava*), *Agnikarma*, through its *Ushna*, *Tikshna*, *Sukshma*, and *Laghu Guna*, helps to remove *Srotovarodha* caused by vitiated *Vata* and *Kapha*.

The red-hot *Shalaka* conducts heat along its length, transferring stored heat from one part to the next. When applied to the skin for *Samyaka Dagdha*, this stored heat is imparted into the tissue in the form of *Ushna*, *Tikshna*, *Sukshma*, and *Laghu Guna*, thereby neutralizing the *Sheeta Guna* of *Vata* and reducing pain.

In addition, *Agnikarma* serves as a *Dosha Dushya Vighatanakara* because the *Ushna Guna* performs two-fold functions.

OBSERVATIONS

A higher number of patients were in the 41–60 years age group compared to the 21–40 years group.

Farmers, housewives, and servicemen were more frequently affected.

The procedure was found to be simple, safe, and easy to perform.

No adverse effects of *Suvarna Shalaka Agnikarma* were noted on the skin.

CONCLUSION

In this Pilot study of 20 patients with Golfer's Elbow, pain and tenderness were significantly reduced, demonstrating that Agnikarma using Suvarna Shalaka is an effective treatment for immediate pain relief. The procedure is cost-effective, simple, and quick to perform, and no adverse effects were observed during or after treatment. Overall, Suvarna Shalaka-based Agnikarma represents a safe and practical therapeutic option for managing Golfer's Elbow.

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