



Case Study

AYURVEDIC MANAGEMENT OF NON-SPECIFIC KNEE JOINT EFFUSION WITH *LEKHANA BASTI* AND *UPANAHA SWEDA*

Omkumari Kumre^{1*}, Neha G. Tank², Rakesh Chauhan³

¹MD Scholar, ²Associate Professor, ³MD Scholar, Department of Panchakarma, ITRA, Jamnagar, Gujarat, India.

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ABSTRACT

In the present era, unhealthy lifestyle habits, obesity, lack of physical activity, excessive workload, improper posture, and stress have increased the prevalence of joint diseases. It refers to the abnormal accumulation of fluid in or around the knee joint due to inflammation, injury, overuse, degenerative changes, or non-specific arthropathies. As the knee is one of the major weight-bearing joints of the body, it is highly prone to wear and tear and degenerative changes. Patients commonly present with swelling, pain, tenderness, heaviness, and difficulty in walking or performing daily activities, which can ultimately affect mobility and quality of life. In Ayurveda, knee joint effusion can broadly be correlated with *Janu Sandhigata Shotha*, particularly when *Kapha* and *Vata Dosha* are predominantly involved. The presence of swelling, heaviness, and fluid accumulation indicates *Kapha* predominance, while pain and restricted movement suggest the involvement of *Vata Dosha*. Therefore, the treatment protocol was planned considering *Kaphaja Janu Sandhigata Shotha*. The treatment included *Lekhana Basti* and *Upanaha*. These therapies help reduce *Kapha*, relieve inflammation, decrease fluid accumulation, and improve joint function. After completion of the treatment, significant improvement was observed in both subjective and objective parameters. Thus, this study suggests that proper Ayurvedic management can effectively help in the treatment of knee joint effusion and contribute to evidence-based clinical practice.

INTRODUCTION

Kaphaja Janu Sandhigata Sotha can be correlated with knee joint effusion due to the presence of symptoms such as swelling, heaviness, pain, coldness, restricted joint movements, and fluid accumulation in the knee joint.^[1]

According to Charaka Samhita^[2]

श्वेतः शीतो गुरुः स्निग्धः स्थिरो मन्दरुजः श्लक्ष्णः ।

कफजः शोफ इत्युक्तो निद्रालस्यसमन्वितः ॥

Kapha predominance leads to *Srotorodha*, *Sheeta*, *Shotha*, and *Guru-Gaurava* in the *Sandhi* region. Ayurveda describes treatment principles such as

Swedana, *Vamana*, *Virechana*, *Upanaha*, *Parisheka*, and *Lepa* for *Kaphaja Sandhi* disorders.^[3]

Case History

Patient Information

A 62-year-old male patient, with no history of addiction or trauma, presented to our OPD with complaints of pain, heaviness, and swelling in the left knee joint, along with difficulty in walking, sitting on the floor, and flexing the knee. His symptoms were aggravated by prolonged sitting, long-distance walking, and running.

Clinical Finding

Physical Examination

Painful movement of the joint was present. His VAS (Visual Analogue Scale) score was 6 on the left side. The WOMAC score was 85.5%. Goniometric measurement was used to assess the flexion and extension range of motion (ROM) of the knee joint.

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Range of Movement

ROM	Before Treatment	After Treatment
Flexion	80°	130°
Extension	5°	0°

VAS (Visual Analogue Scale)

Before Treatment	After Treatment
6	2

WOMAC score

Before Treatment	After Treatment
69	10

Dashavidha Pariksha (Ten-fold examination)

Patient's *Prakruti* (body constitution) was *Kapha-Vataja* (combination of *Kapha* and *Vataja Doshas*); while *Vikruti* (abnormality) was *Vata-Kaphaja*, *Dhatu* (bodily tissues) involved were *Rasa* (body fluids), *Mamsa* (muscles tissue), *Meda* (fat tissue), *Asthi* (bones) and *Majja* (bone marrow). *Sara* (excellence of tissues), *Samhanana* (compactness of tissues), *Sattva* (psychic condition), *Satmya* (homologation) were *Madhyama* (moderate). *Pramana* (measurements): Height-167 cm, Weight- 80 kg and BMI- 28.7kg/m². *Ahara* and *Abhyavaran Shakti* (power of intake and digestion of food) and *Vyayama Shakti* (power of performing exercise) were *Avara*. *Vaya* (age) is *Vridhaavastha*.

USG of Left Knee Joint

- Impression: Synovial Fluid Collection++
- Image of USG report is attached below-Image 1,2,3,4.

Timeline and Intervention

Initially for a period of around 11 months patient was given internal medications. As Patient was not able to take any panchakarma procedures due to his busy schedule. Thereafter in the month of February 6, patient was admitted and planned for *Lekhana Basti* (medicated enema for 9 days). Patient was discharged and *Shamana* (pacifying) medicines were continued as outdoor patient.

Timeline

20 November 2022	Started experiencing gradually increasing left knee joint pain with swelling, difficulty in walking and other associated complaints.
27 th March 2023	Visited our hospital and was advised <i>Shamana</i> treatment.
27 th March 2023	USG of left knee joint: Showed approximately 160 cc synovial fluid collection with few incomplete septa and internal echoes.

Intervention

S. no.	Date	Procedure/medication	Details
1.	27/03/2023	1. Gokshuradi Guggulu	Two tablets, twice daily after meals with water.
		2. Dashmoola Kwath Punarnavastak Kwath	40ml twice daily before meals
		3. Lepa Gutti with Haridra	Local application
		4. Rasayana churna 3gm Arogyavardhini Ras 125 mg	Twice daily after meals with water.
		5. Tab. Bonton DQ	1 tablets twice daily, after meals.
		6. Tab. Rhumayog Gold	1 tablets twice daily, after meals.
2.	06/02/2024 (Admitted in PK hospital) to 21/02/2024	<i>Sarvanga Abhyanga</i> (full body oil massage) with <i>Sahachar Taila</i> and <i>Nadi Swedana</i> (full body steam fomentation)	<i>Abhayanga</i> and <i>Swedana</i> were done at whole body.
		<i>Lekhana Basti</i> for 9 days	<i>Madhu</i> - 60ml

		(Continue 3 <i>Basti</i> with a gap of 2 days- Total 9 <i>Basti</i> was given)	<i>Saindhava</i> - 10gm <i>Dashmoola Taila</i> - 100 ml <i>Kalka</i> - <i>Triphala</i> , <i>Trivrutta</i> , <i>Katphala</i> , <i>Madanaphala</i> , <i>Vacha</i> 30gm <i>Kwatha</i> - <i>Dashmool Kwatha</i> 200ml <i>Go-mutra</i> – 100ml <i>Kottamchukkadi Churna</i> - 30gm <i>Haridra</i> - 5gm <i>Ajmoda churna</i> - 5gm <i>Lehsun</i> - 20gm <i>Saindhava lavana</i> - 10gm <i>Nimbu</i> – 1 <i>Yava churna</i> – 20gm <i>Dashmoola kwatha</i> - QS <i>Arka patra</i> - QS
		<i>Upanaha sweda</i> (10 days)	
3.	21/02/2024		Discharged <i>Shamana</i> continued till March 2024
		1. <i>Gokshuradi Guggulu</i>	Two tablets, twice daily after meals with water.
		2. <i>Dashmoola Kwath</i> <i>Punarnavastak Kwath</i>	40ml twice daily before meals
		3. <i>Rasayana churna</i> 3gm <i>Arogyavardhini Ras</i> 125mg	Twice daily after meals with water.
		4. Tab. Bonton DQ	1 Tablets twice daily, after meals.

Follow up and Outcomes

The patient was advised to take oral medications regularly and follow the dietary guidelines mentioned in the classical texts. He was treated on an outpatient basis and advised to attend follow-up visits every 15 days. During the treatment period, ultrasonography (USG) was performed intermittently along with *Shamana* (pacifying) *Aushadhi* to monitor the patient's progress. After completion of the treatment, significant clinical improvement was observed, along with noticeable changes in the USG reports.

DISCUSSION

Non-specific knee joint effusion is the excessive accumulation of synovial fluid in knee joint, causing swelling and functional impairment without a clearly defined cause. It usually occurs secondary to inflammation, degenerative joint changes, repetitive mechanical stress, obesity, overuse, or synovial irritation. The knee joint is one of the major weight-bearing joints of the body and is therefore highly susceptible to wear and tear, especially in elderly individuals. In the present case, the patient presented with pain, swelling, heaviness and restricted movement of the left knee joint, leading to difficulty in walking, sitting on the floor, and performing daily activities. These symptoms significantly affected the patient's functional mobility and quality of life.^[4] From

the modern medical perspective, the pathophysiology of knee joint effusion mainly involves inflammation of the synovial membrane. Repetitive stress, obesity, aging, and degenerative changes stimulate the release of inflammatory mediators such as cytokines, prostaglandins, and enzymes within the joint cavity. These mediators increase vascular permeability and synovial membrane activity, resulting in excessive production and accumulation of synovial fluid. Chronic inflammation may further lead to synovial hypertrophy, cartilage degeneration, pain, and restriction of joint movements. In the present case, ultrasonography revealed approximately 160 cc of synovial fluid collection with internal echoes and incomplete septa, suggestive of inflammatory synovial pathology. Increased body weight and reduced physical activity may also have contributed to continuous stress on the knee joint, thereby aggravating the condition.^[5]

According to Ayurveda, this condition can be correlated with *Kaphaja Janu Sandhigata Shotha*. Etiological factors such as sedentary lifestyle, lack of exercise, excessive intake of *Guru*, *Snigdha*, and *Abhishyandi Ahara*, obesity, and aging lead to *Agnimandya* (diminished digestive and metabolic fire), resulting in the formation of *Ama*. This *Ama* combines with aggravated *Kapha Dosha* and localizes in the *Janu*

Sandhi due to *Khavaigunya* in the joint. Vitiated *Kapha* produces symptoms such as *Shotha* (swelling), *Guru* (heaviness), *Sthirata* (stiffness), and fluid accumulation, while aggravated *Vata Dosha* causes pain and restricted movement. Obstruction of channels (*Srotorodha*) caused by aggravated *Kapha* further disturbs the normal movement of *Vata*, leading to chronicity of the disease. Thus, the pathology predominantly involves *Kapha-Vata Dushti* along with the involvement of *Rasa, Mamsa, Meda, Asthi* and *Majja Dhatu*.^[6] Considering the predominance of *Kapha* and *Vata Dosha*, the treatment was planned based on the principles of *Kapha-Vatahara Chikitsa*. The patient was treated with *Lekhana Basti, Saagni Upanaha Sweda* using *Kottamchukkadi Churna*, along with appropriate *Shamana Aushadhi*. *Lekhana Basti* was selected as the main therapeutic procedure because *Basti* is considered the best treatment for *Vata Dosha*, while its *Lekhana* property helps reduce excessive *Kapha, Meda*, and abnormal fluid accumulation.

The probable mode of action of *Lekhana Basti* can be explained from both Ayurvedic and modern perspectives. *Madhu* and *Saindhava* help enhance drug penetration and remove obstruction in the channels. *Gomutra* possesses *Lekhana, Kapha-Vatahara*, and *Shothahara* properties, which help reduce edema and clear accumulated pathological fluid.^[7] *Punarnavastaka Kwatha* acts as a potent anti-inflammatory and diuretic formulation, thereby reducing swelling and fluid accumulation. *Dashamoola* possesses well-known anti-inflammatory and analgesic properties, which help relieve pain and improve joint mobility. Through its systemic action via the colon, *Basti* therapy regulates aggravated *Vata Dosha*, improves tissue metabolism, and restores normal physiological functioning of the joint.

An important component of the present treatment protocol was *Saagni Upanaha Sweda* with *Kottamchukkadi Churna*. *Upanaha Sweda* is a specialized form of localized sudation therapy described in Ayurvedic classics for the management of *Shotha, Stambha*, and *Shoola*. *Upanaha* provides continuous, deep, and sustained warmth over the affected joint for an extended period, thereby improving local blood circulation and enhancing the absorption of medicinal substances through the skin.

The *Ushna, Tikshna*, and *Kapha-Vatahara* properties of *Kottamchukkadi Churna* help in liquefying aggravated *Kapha*, reducing joint stiffness, and promoting the reabsorption of accumulated synovial fluid. This therapy also helps relieve muscle spasm and improves joint flexibility by reducing local inflammation and enhancing microcirculation around the affected area. From a modern medical perspective, prolonged therapeutic heat may enhance lymphatic

drainage, reduce periarticular edema, relax surrounding muscles, and ultimately improve joint mobility while reducing pain.^[8]

After completion of treatment, the patient showed significant improvement in pain, swelling, heaviness, range of motion, and walking ability. Improvement in VAS and WOMAC scores, along with reduction in synovial fluid collection on USG findings, indicates the effectiveness of Ayurvedic management in non-specific knee joint effusion. This case highlights that a properly planned Ayurvedic treatment protocol based on *Dosha, Dushya*, and *Samprapti* can effectively manage knee joint effusion and improve the patient's quality of life.

Internal Medication

1. **Gokshuradi Guggulu:** Main contains is *Gokshura*. The *Vatahara, Mutrala*, and *Shothahara*, *Vedanasthapana* properties of *Gokshura* mainly help in reducing synovial fluid accumulation and inflammatory swelling in knee joint effusion.^[9]
2. **Dashmoola Kwath:** It is *Tridoshashamaka* and *Shothahara*.^[10, 11]
3. **Punarnavastak Kwath:** The formulation comprises equal parts of *Punarnava, Daru, Nisha, Tikta, Patola, Pathya, Musta, Nagara*, and is known for its *Shothahara* (anti-inflammatory and anti-edematous) action.^[12]
4. **Rasayana churna:** Contains *Churnas* of *Guduchi* (*Tinospora cordifolia* Miers.), *Gokshura* (*Tribulus terrestris* Linn.) and *Amalaki* (*Embolica officinalis* Gaertn.) in equal proportion. It has Anti-oxidant and Anti-inflammatory properties.^[13-14]
5. **Arogyavardhini Ras:** Contains mainly *Parada, Gandhaka, Abhraka, Katuki*; It acts as *Kostha Shodhana* thereby helps to remove the *Doshas* from the *Kostha*. It is *Tridosha Shamaka* and does *Deepana, Pachana* and *Dhatuprasadana*.^[15]
6. **Tab. Bonton DQ:** Main contains *Cissus quadrangularis* is *Vata-kaphahara, Ushana, Ruksha* properties.^[16]
7. **Tab. Rhumayog Gold:** Contains *Svarna Bhasma, Yograj Guggulu, Maharasnadi Kwatha, Vanga Bhasma, Naga Bhasma, Lauha Bhasma, Mandura Bhasma, Makshika Bhasma, Abhraka Bhasma* and *Rasa Sindura* collectively exhibit *Rasayana, Balya, Agnideepana, Shothahara, Vedanasthapana, Dhatuposhaka*, and *Vata-Kapha Shamaka* properties, thereby helping in tissue rejuvenation, reduction of inflammation, enhancement of metabolism, and improvement of musculoskeletal health.^[17]

CONCLUSION

Ayurvedic management with *Lekhana Basti*, *Saagni Upanaha Sweda* and *Shamana Aushadhi* produced significant improvement in pain, swelling, joint mobility, and functional ability in this case of non-specific knee joint effusion. Objective improvements were observed in VAS, WOMAC score, range of motion, and USG findings. The treatment effectively reduced synovial fluid accumulation and improved the patient's quality of life. This case suggests that Ayurvedic management may be a safe and effective therapeutic option for knee joint effusion. Further well-designed clinical studies are required to establish its efficacy.

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***Address for correspondence**

Dr. Omkumari Kumre

MD Scholar,

Department of Panchakarma,

ITRA, Jamnagar, Gujarat.

Email: omeekumre870@gmail.com

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