

**STRUCTURAL IMPROVEMENT AND SYMPTOMATIC RELIEF FROM KNEE
OSTEOARTHRITIS WITH SKETS (SHRESHTA KNEE EXPERT CLINIC TREATMENT
STRATEGY) IN A POSTMENOPAUSAL FEMALE: A CASE REPORT****Dr. Anuradha Goyal, M.D. Ayu. (Kayachikitsa), Dr. Anjali Menon, M.D. Ayu. (Rasashastra), Dipak Patil, Btech
(Comp.Sci.)**

Researcher, Tech Clinic Connect Pvt. Ltd.

***Corresponding Author: Anjali Menon**

Researcher, Tech Clinic Connect Pvt. Ltd.

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ABSTRACT

An elderly female patient came to Shreshta Knee Expert (SKE) Clinic, Mumbai with primary complaint of bilateral knee joint pain; increased since 3 years, post menopause. X Ray radiography of her knees in weight bearing position revealed advanced Osteoarthritis (Grade 4 - Kellgren Lawrence scale). Conventional treatment methods of knee osteoarthritis involving use of oral pain killers and supplements had shown no relief in her condition. She used them intermittently until such a time as the pain was unbearable. Sandhigata Vata, is a disorder affecting the joints caused due to vitiation of Vata, which has the same characteristics as Osteoarthritis. At SKE (Shreshta Knee Expert) Clinic, she was assessed as per Ayurvedic diagnostic methods and started on treatment according to Shreshta Knee Expert Treatment Strategy (SKETS) for Dhatu Pushti and Vatashamana. Relief in pain, regaining of daily activities and structural visible increase in tibio-femoral joint space width was seen at the end of treatment.

KEYWORDS: Knee Osteoarthritis, Cartilage, Meniscus, Regenerative Therapy, Ayurveda, Osteoarthritis, Ageing, Regeneration.**INTRODUCTION**

Knee Osteoarthritis is the forerunner in causing disability in the elderly. This degenerative condition of the joint has a multitude of factors leading to joint dysfunction. The matrix metalloproteinases, pro-inflammatory cytokines have been known to cause increased destruction of the collagen and extracellular matrix allowing for increased wear and tear of the cartilage and meniscus but not enough restoration. Pain and inflammation being the primary focus of treatment NSAIDs, COX-2 inhibitors remain the basic drugs used alongwith supplements like glucosamine^[1], chondroitin sulfate etc. In this condition, primary concern for all physicians is the eventuality of Total Knee Arthroplasty, which in advanced knee osteoarthritis remains the only solution. At SKE (Shreshta Knee Expert) Clinic, a comprehensive approach was developed to not only escape this eventuality but to restore the normal function of the knee joint without any surgical or invasive techniques. The use of natural - herbal and herbo-mineral supplements along with local therapy of fomentation and Dhara was applied to alleviate the symptoms of Sandhigata Vata. Present case of Knee osteoarthritis was dealt the same treatment modality achieving reduction in pain, stiffness, crepitus, improved flexion and range of motion. Radiographic changes depicting increase in tibio

- femoral Joint Space Width (jsw) which is an approximate measure of overall thickness of articular cartilage though not cartilage volume was seen.

CASE REPORT

A 58 years old, female patient with BMI 20.8 came to Shreshta Knee Expert Clinic, Mumbai guided by YouTube testimonials of previous patients. She came with her daughter and explained her complaints herself. She complained of pain in bilateral knee joints increasing since the last 3 years, difficulty in walking, inability to fold her knees, inability to conduct daily activities - Including the use of Indian style commode, floor squatting, sweeping the house, climbing stairs etc. She complained of locking sensation in both the knees especially left knee, with clicking sound when rising from the chair or sitting down.

She was clinically diagnosed with Knee Osteoarthritis as per ACR criteria^[2] - Knee Pain, Age > 50 years, Morning stiffness < 30 minutes, Crepitus present.

She was assessed as per Ashtavidha Rogi parikshan (eightfold diagnostic method)

Sr. No	Parikshan	Observation
1.	Nadi	Vata Pradhan (Predominantly Vata)
2.	Mala	Asamyak Shushka Kathin Mala Pravrutti (Constipation, Hard stools)
3.	Mutra	Prakrut (Normal)
4.	Jivha	Alpa Saam (Slightly coated tongue)
5.	Shabd	Janu Sandhi Aakunchan Prasaran Kat-Kat Shabdatva (Crepitus +++)
6.	Sparsh	Vata poorna Druti Sparsh (On Palpation - Like a air filled bag)
7.	Drik	Shukla Shushk (Clear white, Dry)
8.	Aakruti	Vataj (Vata body constitution)

She attained menopause 3 years back, post which all the symptoms seemed to have increased.

She had no other comorbidities and had not been diagnosed with any major medical or surgical illness.

Upon examination, all her vitals were stable. No systemic abnormality detected. Observations from Local examination of the knee are as following:

	Right	Left
Pain	++	+++
Swelling	Mild	Mild
Stiffness	Less than 10 minutes upon waking	Less than 10 minutes upon waking
Crepitus	Palpable crepitus ++	Audible crepitus +++
Flexion	70°	50°

After taking a detailed history of her food habits and lifestyle she was diagnosed with *Dhatu Kshayaj Samprapti* induced by *Vataj Aahar, Vihar*, aggravated due to her *Jaravastha*.

SKETS is developed to have a patient-centric approach, focusing on such modes of treatment that are pleasant and soothing to the patient, along with improvement in their health condition. In accordance with this the patient's treatment as per SKETS was designed to cause - *Dipan, Pachan, Vatanuloman, Snehana, Bruhan*. *Snehana* was given prime focus as the underlying condition was of *Vata*.

Her Medical Timeline:

- 1986 - Delivered a female child Full term normal delivery at Home

- 1990 - Delivered a male child Full term normal delivery at Home
- 1991- Delivered a female child Full term normal delivery at Home
- 1993- Delivered a female child Full term normal delivery at Home with Abdominal Tubal Ligation.
- 2013- Cholecystectomy done
- 2021- Menopause attained. Mild knee joint pain present.
- 2022- Visited different centers and took NSAIDs on and off. Knee pain aggravated.
- 2023- Difficulty in doing day to day activities because of knee joint pain.
- 2024- January- Visited SKE Clinic and started treatment

Her course in the clinic is tabulated below

Sr.no.	Prescribing Date (dd/mm/yyyy)	Symptoms	Treatment given			Duration
			Oral	Regimen	Local therapy	
1.	10/01/2024	Bilateral Knee joint pain, Swelling + Inability to sit or squat, Morning stiffness < 30 minutes	Aampachak Vati	2 TDS Before food	Shreshta Pottali fomentation therapy - 5 sessions	15 days
			Kaishor Guggul	2 BD		
			Asthi-Majja-Pachak Vati	2 TDS		
			Utrika Shuddhi*	2 TDS		
			Ajamodadi Vati	1 TDS		
Laghu Sutshekhar	1 TDS Before					

		Nadi- Predominant Vata Mala- Baddhata, Shushka Kathin Mala Pravrutti Jivha- Alpa Saam Kshuddha- Alpa Agni- Vishamagni Koshta- Krura Kosht	Ras	food		
			Erاند Oil	3 Tablespoons HS		
			Gandharva Haritaki Vati	1 HS		
2.	24/01/2024	Mild relief in Pain Swelling absent Burning sensation in chest Nadi- Vataj Mala- Prakrut Kshudha- Prakrut Jivha- Niram	Atulya Shuddhi*	2 TDS Before Meal	Regen Oil Dhara- 15 sessions	15 Days
			Asthi Majja Pachak	2 BD		
			Asthi jeevanam*	3 TDS		
			Sootshekhar Ras	2 TDS Before Meal		
			Kaishor Guggul	2 BD		
			Erاند Oil	3 Tablespoons HS		
			Gandharva Haritaki Vati	1 HS		
3.	31/01/2024	Pain present but bearable Swelling -absent Able to walk for 20 minutes without pain Nadi- Vat-Pittaj Mala- Prakrut Kshudha- Prakrut Jivha - Niram	Atulya Shuddhi	2 TDS	Regen Oil Dhara - 15 sessions	15 Days
			Asthi jeevanam*	3 TDS		
			Asthi oorjitam*	3 TDS		
			Mahayograj Guggul	2 BD		
			Satvik Shuddhi*	2 TDS		
			Erاند Oil	2 Tablespoons HS		
			Mahatiktam Ghruta with 4 tablets Ashwagandha Pranayu* 2 tablets	1 Tablespoon with Milk Early morning Empty Stomach		
4.	09/02/2024	Improvement in Pain Swelling absent Morning stiffness absent Nadi- Vat Mala- Prakrut Kshudha- Prakrut Jivha- Niram	Asthi majja pachak	2 TDS	Regen Oil Dhara - 5 sessions	For 10 days
			Mahayograj guggul	2 BD		
			Sootshekhar ras	2 TDS		
			Asthi jeevanam*	3 TDS		
			Asthi oorjitam*	3 TDS		
			Erاند Oil	2 Tablespoons HS		
			Mahatikt ghrut with Ashwagandha 4 tablets Pranayu* 4 tablets	2 Tablespoons with Milk Early morning Empty stomach		
5.	21/02/2024	Relief in Pain Pain in Right knee while walking Swelling Absent	Asthi Majja Pachak	2 TDS Before Meal	No local therapy	For 10 days
			Mahayograj Guggul	2 BD		

			Asthi jeevanam*	3 QID		
			Satvik Shuddhi*	2 TDS		
			Erand Oil	2 Tablespoons HS		
			Tapyadi Loha	2 BD		
			Mahatikt Ghrut with Pranayu* 2 Tablets	3 Tablespoons at 7 am and 1 Tablespoon at 6 Pm with Milk + Sugar		
6	04/03/2024	Relief in knee pain No swelling No morning stiffness Able to walk and fold both her knees without pain	Mahayograj Guggul	2 BD	No local therapy	For 20 Days
			Asthi jeevanam*	4 QID		
			Trayodashang Guggul	2 BD		
			Ashwagandha Ghan Vati	2 BD		
			Erand Oil	2 Tablespoons HS		
Mahatikt Ghrut with Pranayu* 2 Tablets	4 Tablespoons at 7 am and 2 Tablespoons at 6 Pm with Milk + Sugar					
7.	21/03/2024	Relief in knee pain No swelling No morning stiffness Crepitus - Nil Nadi- Vataj Mala- Prakrut Kshudha- Prakrut	Kaishor Guggul	2 BD	No local therapy	For 20 Days
			Asthi jeevanam*	4 QID		
			Asthi oorjitam*	4 QID		
			Satvik Shuddhi*	2 BD		
			Ashwagandha	2 BD		
			Erand Oil	2 Tablespoons HS		
Mahatikt Ghrut with Ayurda * 2 Tablets	4 Tablespoons at 7 am and 2 Tablespoons at 6 Pm with Milk + Sugar					

* - All are proprietary products marketed by Tech Clinic Connect Pvt Ltd

She was advised to eat at regular intervals, avoiding sprouted pulses, Junk food, bakery items and too- sour or too spicy food. She was also asked to refrain from lifting weights or overexerting till the first 15 days of treatment. She was asked to walk as per capability and comfort. Post 6 weeks of treatment she was able to stand for more than 30 minutes without any pain, and walk for 20 minutes pain-free.

She was asked to describe her journey and experience of treatment in the clinic, in her own words – “Before treatment I was in immense pain, I thought I will not be able to walk in some time. Then, when I came here after being coerced by my family to find a solution to the knee pain...I had relief within 15 days. Now (my knees) have gotten so much better. I am now doing all the household work by myself and have started helping out in the farm as well. If truth be told, I never thought I will be able to do all this again. I’m very thankful to Dr.xyz for treating

me so well, and the therapist too.” (Translated to English from Marathi.)

Outcomes

Gross structural improvement was seen in the patient post 10 weeks of treatment. The patient regained her daily activities without pain. She was able to rise from the chair, sit on the floor, squat, and even climb stairs without pain. Since treatment included local therapies like Dhara, Pottali which are soothing in nature, the patient was very comfortable and even enjoyed the treatment. The promising result shows that SKETS is a non-invasive, pleasant alternative to conventional treatment methods. The use of natural products makes it a safer, affordable alternative to surgical interventions.

The patient was asked to rate her pain using a Numeric Pain rating scale in which 0 represents no pain and 10

represent the worst pain possible- She scored her pain 8. Post treatment the patient rated her pain as 1.

The patient was assessed post 4 weeks of treatment for any changes in pain, stiffness and structural changes in X Ray.

Her pain had reduced with no swelling or stiffness. She continued treatment for another 6 weeks. Observations before treatment and after treatment are tabulated below.

Sr no	Parameter	Pre treatment		Post treatment	
		Right Knee	Left Knee	Right Knee	Left Knee
1.	Pain	++	++	No	No
2.	Swelling	Mild	Mild	None	None
3.	Crepitus	Palpable crepitus	Audible crepitus	None	None
4.	Flexion (Unassisted, Painless)	70°	50°	140°	100°
	Stiffness	< 10 minutes		None	
Patient reported Outcomes (PROs)					
5.	VAS Pain Score	8		1	
6.	Global Rating of change	NA		+7	
Radiographic assessment					
7.	Grade as per Kellgren Lawrence scale ^[3]	Grade 4		Grade 3	
8.	Joint space width (Narrowing)	Complete obliteration of joint space width		Definite narrowing of joint space width	

Xray changes

The first Xray taken before treatment, Figure 1 showing Tibio-femoral Joint space obliteration in left medial and lateral compartments, definite narrowing of Tibio-femoral joint space in right medial and lateral compartments. Osteophytes and sclerosis in both knees.

Post 4 weeks of treatment the patient was asked to repeat her Xray-0 Standing position – AP view- Figure 2, which showed definite narrowing of medial and lateral compartments of both the knees, with osteophytes and subchondral sclerosis.



Figure 1: Xray Knee Standing AP view Dated 12-01-2024.



Figure 2: Xray Knee Standing AP view Dated: 08-02-2024.

Post 10 weeks of treatment the patient was assessed on various parameters - pain, stiffness, range of motion. X ray radiograph showed gross improvement in Tibio-femoral joint space at both knees as shown in Figure 3 below.

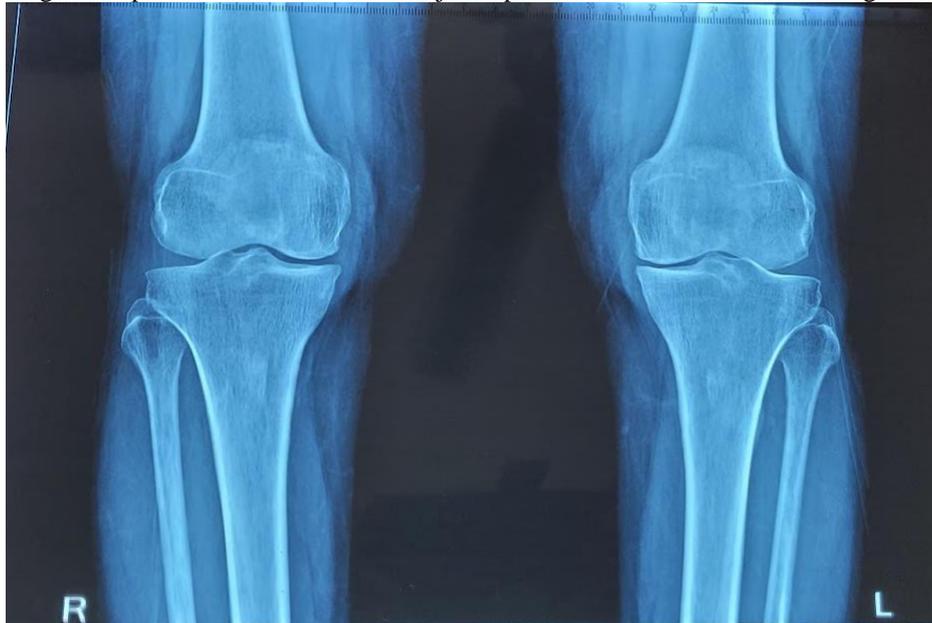


Figure 3: Xray Knee Standing Ap View Dated: 21-03-2024.

DISCUSSION

The characteristics of Osteoarthritis are similar to those of *Sandhigata Vata*, so much so that many academicians use these terms synonymously.^[4,5,6,7] The Ayurvedic principles that guide treatment of *Sandhigata Vata* were implemented to treat this case. The primary cause was identified as *Vata* vitiation and *Jaravastha* (ageing), hence the treatment predominantly consisted of *Snehana* therapies. Local sudation - in the form of Pottali sweden was done for Pachan of doshas locally, complementing the medication given orally. The use of Oral Sneha in the form of Erand Sneh and Mahatikta Ghruta caused *Vatanuloman*, *Vatashaman*.^[8] The inclusion of *Bruhan Dravyas* (nutritive elements) like Ashwagandha, Pranayu Tablets along with Mahatikta Ghruta in Rasayana Kaal (Early morning empty stomach) proved to be a potent Bruhan medication. The holistic approach of viewing the knee joint as an organ in itself^[9], taking into

consideration the synovium, pro-inflammatory mediators and treating the basic elements as per *the Dosh Dushti Samprapti* has resulted in the therapy being effective in alleviating pain and improving joint mobility.

CONCLUSION

The improvement in joint space width, overall regression of symptoms and relief from pain shows the potential of SKETS. The efficacy of treatment and sustained effect remains to be determined. Nevertheless, considering the ease of administration and non-invasive techniques used, with only herbal and herbo-mineral oral medication, it offers a superior treatment option than the conventional method. The generalization of treatment, does not fall into the logical axiom of Ayurvedic methodology, but a treatment module to cater to all three Doshas along with freedom to curtail or increase specific dosage can be made, to further a common treatment protocol for

Osteoarthritis. Further case studies and longer durational studies will be required to assess the longevity of the results, and to understand the effect of various elements involved in treatment.

Consent and approval

Informed Consent Form containing all the information regarding the reporting of the case was given to the patient and she willingly agreed. The consent form was written and explained in the language Marathi, which was the language she best understood.

No Ethics Committee approval is required for the reporting of the case as per Center guidelines.

Conflict of Interest

AG, AM, are employees of TechClinic Connect Pvt Ltd, the owner of Shreshta Knee Expert Clinic and DP is the Founder and MD of TechClinic Connect Pvt Ltd.

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