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Case Report
Chondromalacia Patella

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Role of Ayurveda in Chondromalacia Patella Grade IV - A Case Report

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Chondromalacia Patellae is a disease in which the hyaline cartilage of patella is softened and easily wears away. It is found in around 37% knee joint affected patients, with just 0.3% of grade IV. Thus, it is a rare outcome. The case presented here is of 46 years old male patient, who came to Panchakarma OPD with complaint of pain at left knee joint and difficulty in walking. The patient had MRI, suggestive of Chondromalacia Patellae Grade IV of left knee joint. It was diagnosed as Janu Sandhi Gata Vata. It was treated with Janu Basti (~oil pool at knee joint) of Murivennadi Taila externally and Matra Basti (~enema with fats) of ghee-oil mixture made of particular drugs, i.e., Jeevaniya and Sandhaniya Maha Kashaya. Significant improvements were observed in subjective and objective parameters, like pain, range of motion and even MRI after the treatment. This case proves that Snehana (~oleation), specifically with Jeevaniya and Sandhaniya drugs is useful in treating chondromalacia, even of grade IV, which is rare and requires surgical intervention.

Keywords: Case report, Chondromalacia patellae, Janu Basti, Jeevaniya Maha Kashaya, Matrabasti, Sandhaniya Maha Kashaya. Yamaka Sneha

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Introduction

Post-traumatic injuries, microtrauma wear and tear, and iatrogenic medication injections can lead to chondromalacia development. Chondromalacia occurs in any joint and is especially common in joints with trauma and deformities, which is why knee joint is common.**[1]**

Chondromalacia Patellae is a disease in which the hyaline cartilage of patella is genetically softened and easily tears or wears away. The posterior articular surface of the patella starts losing its density and becomes softer with subsequent tearing, fissuring and erosion of the articular cartilage. It is commonly recognized as involving the extensor mechanism of the knee and, accordingly, is often referred to as chondromalacia of the patellae, patellofemoral syndrome, or runner's knee.**[2]** Chondromalacia patellae is found in 36.2% patients, with just 0.3% of Grade IV. Thus, it is one of the rare cases.

In Ayurveda this condition can be correlated with *Janusandhigata Vata*. Symptoms of *Janusandhigata Vata* like *Shoola* (~pain), *Shopha* (~swelling), *Vedana* (~pain) during *Akunchana* (~contraction) of left knee**[3]** are similar to the ones described in chondromalacia.

Case Report

Patient information

A 46 year old male patient came to the OPD of Panchakarma department with pain in the anterior part of left knee joint along with crepitus and difficulty in walking since nine months, and hip joint pain. He had history of blunt trauma to the left knee nine months ago. He had no ongoing medications and no concurrent disease. He had no any history of addiction. He consulted allopathic doctor and took medicines, and got symptomatic relief by that. As he discontinued medicines, the symptoms were aggravated. Thereafter, his MRI was taken and reported as chondromalacia patellae and he was suggested surgery. Avoiding it, he approached to Ayurveda OPD for further management.

Clinical Findings

Appetite of patient was normal, bowel movement was once per day in normal consistency. Micturition was normal with four to five times per day. Sleep was disturbed due to pain. His blood pressure was normal - 124/82 mm Hg. His pulse was 74/min.

Local Examination specific to knee joint is mentioned in [Table 1]. The gait was limping.

Table 1: Findings of local examination of both knee joints before treatment.

Parameters	Left knee joint	Right knee joint
Pain	Present (grade 6 on VAS scale)	Absent
Swelling	Absent	Absent
Temperature	Absent	Absent
Crepitus	Present (2)	Absent
Discolouration	Absent	Absent
Restricted rom	Present (flexion)(40°)	Absent
Tenderness	Present (3)	Absent

Diagnostic Assessment:

He had brought MRI dated 02.06.22 with following findings, as depicted in Figure [1] and [2]. It suggested Grade IV, which is severe form of chondromalacia.

Timeline: Timeline of events is noted in [Table 2].

Table 2: Timeline of events

Date	Condition
24.06.22	Patient visited with knee joint pain, crepitus and difficulty in walking.
25.06.22 to 09.07.22	Janu Basti with Murivenna Taila, and Matra Basti with oil-ghee prepared from Jeevaniya-Sandhaniya Mahakashaya drugs
09.07.22	Pain subsided and difficulty in walking was thus absent.

Therapeutic intervention (for 15 days)

The patient was advised *Janu Basti* (~reservoir for oil holding at knee joint) with 250 ml *Murivenna Tailam* for 30 minutes for 15 days. *Matra Basti* (~oil enema) was done with *Jeevaniya Mahakashaya - Sandhaniya Mahakashaya Siddha Yamaka Sneha* (~combination of ghee and oil) - 60 ml, for 15 days.

The drugs used for *Yamaka Sneha* are -

Jeevaniya Mahakashaya, viz. *Vidari* [*Pueraria tuberosa (Roxb. ex Willd.)DC*] for *Jeevaka-Rushabhaka, Shatavari (Asparagus racemosus Willd.)* for *Meda-Mahameda, Ashwagandha* [*Withania somnifera(L.)*] for *Kakoli-Ksheerakakoli, Mudgaparni (Phaseolus trilobus)-Mashaparni* [*Teramnus labialis(L.) Spreng.*],

Jeevanti [*Leptadenia reticulata (Retz.)*] and *Yashtimadhu (Glycyrrhiza glabra);* as well as *Sandhaniya mahakashaya,* viz. *Guduchi* [*Tinospora cordifolia (Willd.) Hook.f.*], *Prushniparni (Uraria picta), Paatha (Cissampelos pareira), Lajjalu (Mimosa pudica Linn.), Mocharasa* [*Salmalia malabarica DC Schott &Endl.)*], *Dhataki* [*Woodfordia fruticosa (L.)Kurz.,*], *Lodhra (Symplocos racemosaRxb.), Priyangu (Callicarpa MacrophyllaVahl.), Katphala (Myrica nagi).*

Outcome and follow-up: Outcome is described in [Table 3].

Table 3: Comparison of local examination of left knee joint before and after treatment.

Parameters	BT	AT
Pain	Present (grade 6 on VAS scale)	Absent (0)
Stiffness	Present (2)	Present (1)
Crepitus	Present (2)	Absent (0)
Restricted ROM	Flexion - 40°	110°
Tenderness	Present (3)	Absent (0)

No any adverse events were noted during the treatment period.

MRI changes during follow-up: (dated 09.08.22)

MRI changes are depicted in Figure [3] and [4].

Discussion

The patient was reported of chondromalacia in MRI. In chondromalacia, the softening of articular cartilage occurs, followed by degeneration. The degeneration can be understood as *Shoshana* (~drying up) and *Kshaya* (~depletion) of *Shleshaka Kapha,* by *Vata Vruddhi* (~aggravation), due to its reasons.

In this case, it was local injury. *Shleshaka Kapha* is meant for lubrication of joints, where its *Kshaya* (~depletion) and *Vata Vruddhi* (~aggravation) suggests increase of *Ruksha* (~dry) *Guna,* and reduced *Snigdha* (~unctuous) *Guna.* The symptoms were also similar to classical symptoms of *Janu Sandhigata Vata* like swelling, i.e., *Shopha* (~swelling), *Vedana* (~pain) during *Akunchana* (~flexion). Along with these symptoms, patient was having stiffness. The case was thus, finally diagnosed as *Janusandhigata Vata,* without any *Avarana*.

The treatment for such *Vatavyadhi,* is *Sneha* (~oleation) dominant.**[4]** Thus, local *Snehana* in the form of *Janu Basti,* and systemic *Snehana* by *Matra Basti* (~oil enema) was selected. Due to injury, *Rakta Dushti* and *Vata Vruddhi* occurs.**[5]**

Thus, treatment would be *Rakta Prasadana* (~lucidity), and *Vata Shamana. Moorivenadi Tailam* was used for *Janu Basti* as it is *Sandhaniya* (~colligative) and *Vedanasthapaka* (~alleviation of pain).**[6]** The main function of *Rakta Dhatu* is *Jeevana* (~vitalization).**[7]**

Moreover to strengthen the cartilage and heal it, *Jeevaniya* and *Sandhaniya Mahakasay Sidhha Yamak* was selected for *Basti* purpose. *Matra Basti* was selected method of administration for its indication in *Bhagna*.**[8]**

Yamaka (~combination of ghee and oil) was selected for ghee is best used for *Pitta-Rakta* vitiation and oil is best for *Vata* disorders, which are main components in this case. The hip joint pain, was due to referred pain by changed gait. The knee joint pain relief, thus improved the gait and, hip joint pain was also relieved.

Conclusion

After understanding pathophysiology and etiology of disease in Ayurvedic terms, treatment decision is assisted and untroubled. Significance of oleation, that too, with *Jeevaniya* and *Sandhaniya Maha Kashaya* in injury- induced chondromalacia is proven in this case, objectively and subjectively.

Thus, its use in various *Abhighataja* (~injury) diseases can be broadly suggested. More studies are required though, to substantiate the claim, this being a single case study.

Limitations

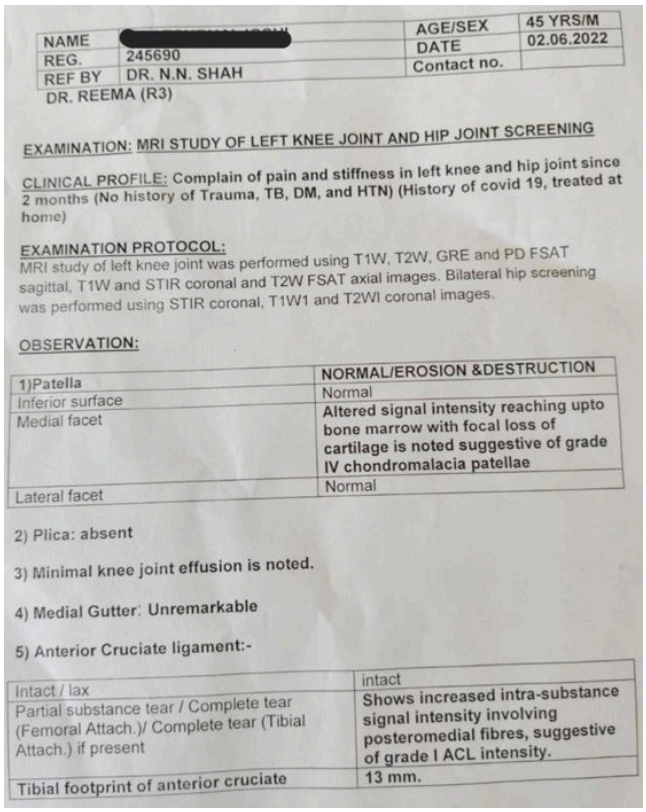
The person's suitability for *Basti* should be mandated.

Declaration of patient consent

The authors certify the consent with appropriate consent form. In the consent, patient has given acceptance for the images and other clinical information for reporting in journal. The patient is assured the anonymity for publishing and about the due efforts made for concealment of identity.

Acknowledgement

The authors are thankful to patient for consent of data publication. Hospital management and staff is acknowledged for their timely assistance in management of patient.



NAME	[redacted]	AGE/SEX	45 YRS/M
REG.	245690	DATE	02.06.2022
REF BY	DR. N.N. SHAH	Contact no.	

DR. REEMA (R3)

EXAMINATION: MRI STUDY OF LEFT KNEE JOINT AND HIP JOINT SCREENING

CLINICAL PROFILE: Complain of pain and stiffness in left knee and hip joint since 2 months (No history of Trauma, TB, DM, and HTN) (History of covid 19, treated at home)

EXAMINATION PROTOCOL:
MRI study of left knee joint was performed using T1W, T2W, GRE and PD FSAT sagittal, T1W and STIR coronal and T2W FSAT axial images. Bilateral hip screening was performed using STIR coronal, T1W1 and T2WI coronal images.

OBSERVATION:

	NORMAL/EROSION &DESTRUCTION
1)Patella	
Inferior surface	Normal
Medial facet	Altered signal intensity reaching upto bone marrow with focal loss of cartilage is noted suggestive of grade IV chondromalacia patellae
Lateral facet	Normal

2) Plica: absent

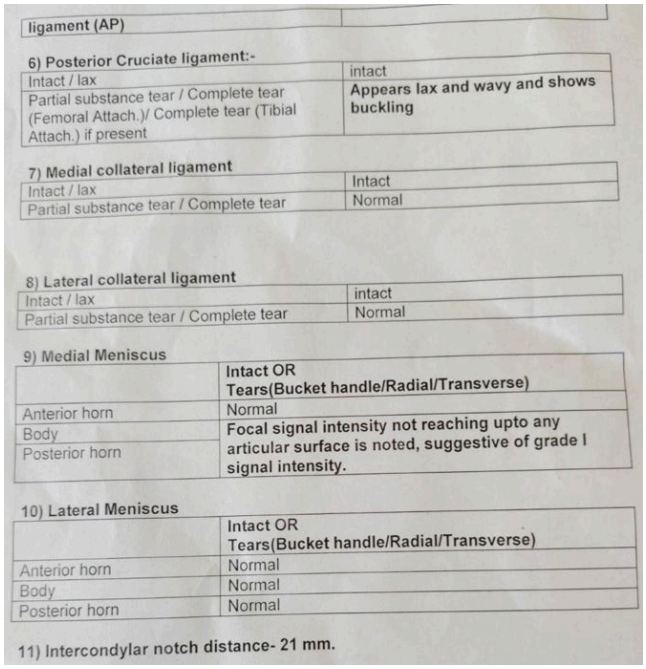
3) Minimal knee joint effusion is noted.

4) Medial Gutter: Unremarkable

5) Anterior Cruciate ligament:-

Intact / lax	intact
Partial substance tear / Complete tear (Femoral Attach.)/ Complete tear (Tibial Attach.) if present	Shows increased intra-substance signal intensity involving posteromedial fibres, suggestive of grade I ACL intensity.
Tibial footprint of anterior cruciate	13 mm.

Figure 1: BT MRI of Left knee joint and hip joint



ligament (AP)

6) Posterior Cruciate ligament:-

Intact / lax	intact
Partial substance tear / Complete tear (Femoral Attach.)/ Complete tear (Tibial Attach.) if present	Appears lax and wavy and shows buckling

7) Medial collateral ligament

Intact / lax	Intact
Partial substance tear / Complete tear	Normal

8) Lateral collateral ligament

Intact / lax	intact
Partial substance tear / Complete tear	Normal

9) Medial Meniscus

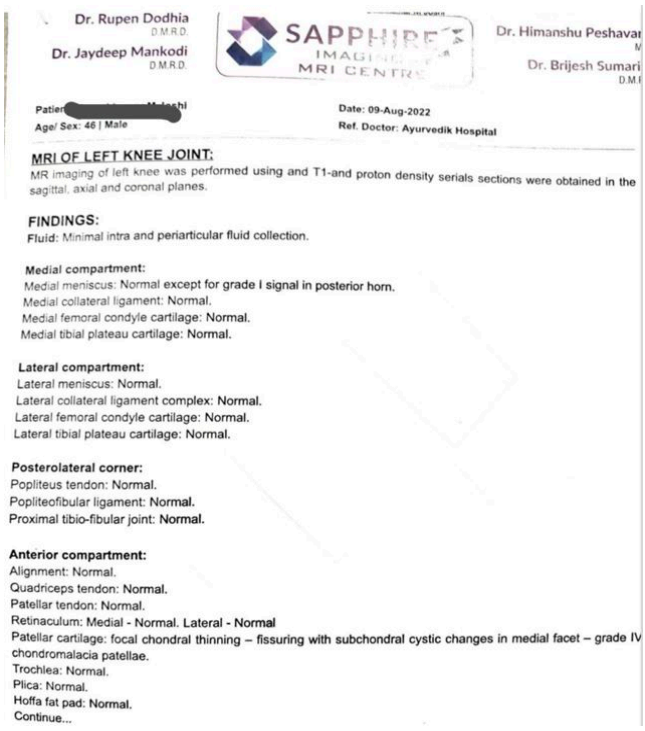
	Intact OR Tears(Bucket handle/Radial/Transverse)
Anterior horn	Normal
Body Posterior horn	Focal signal intensity not reaching upto any articular surface is noted, suggestive of grade I signal intensity.

10) Lateral Meniscus

	Intact OR Tears(Bucket handle/Radial/Transverse)
Anterior horn	Normal
Body	Normal
Posterior horn	Normal

11) Intercondylar notch distance- 21 mm.

Figure 2: BT MRI of Left knee joint and hip joint



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Patient [redacted]
Age/ Sex: 46 | Male
Date: 09-Aug-2022
Ref. Doctor: Ayurvedik Hospital

MRI OF LEFT KNEE JOINT:
MR imaging of left knee was performed using and T1-and proton density serials sections were obtained in the sagittal, axial and coronal planes.

FINDINGS:
Fluid: Minimal intra and periarticular fluid collection.

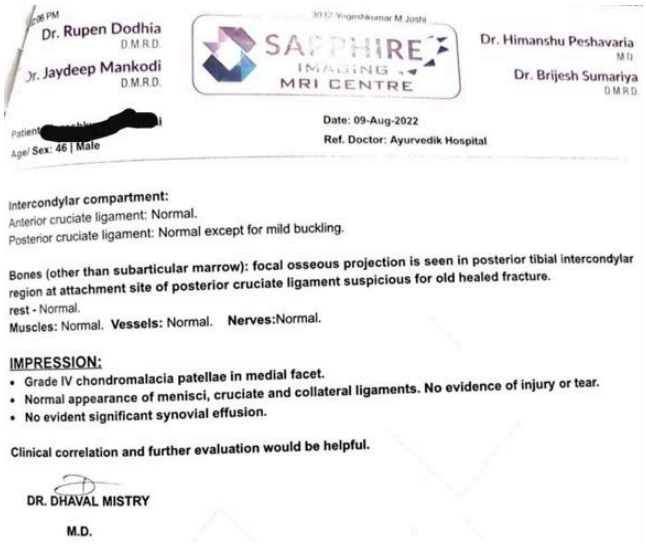
Medial compartment:
Medial meniscus: Normal except for grade I signal in posterior horn.
Medial collateral ligament: Normal.
Medial femoral condyle cartilage: Normal.
Medial tibial plateau cartilage: Normal.

Lateral compartment:
Lateral meniscus: Normal.
Lateral collateral ligament complex: Normal.
Lateral femoral condyle cartilage: Normal.
Lateral tibial plateau cartilage: Normal.

Posterolateral corner:
Popliteus tendon: Normal.
Popliteofibular ligament: Normal.
Proximal tibio-fibular joint: Normal.

Anterior compartment:
Alignment: Normal.
Quadriceps tendon: Normal.
Patellar tendon: Normal.
Retinaculum: Medial - Normal. Lateral - Normal
Patellar cartilage: focal chondral thinning – fissuring with subchondral cystic changes in medial facet – grade IV chondromalacia patellae.
Trochlea: Normal.
Plica: Normal.
Hoffa fat pad: Normal.
Continue...

Figure 3: AT MRI-left knee joint



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Intercondylar compartment:
Anterior cruciate ligament: Normal.
Posterior cruciate ligament: Normal except for mild buckling.

Bones (other than subarticular marrow): focal osseous projection is seen in posterior tibial intercondylar region at attachment site of posterior cruciate ligament suspicious for old healed fracture.
rest - Normal.
Muscles: Normal. Vessels: Normal. Nerves:Normal.

IMPRESSION:
- Grade IV chondromalacia patellae in medial facet.
- Normal appearance of menisci, cruciate and collateral ligaments. No evidence of injury or tear.
- No evident significant synovial effusion.

Clinical correlation and further evaluation would be helpful.

DR. DHAVAL MISTRY
M.D.

Figure 4: AT MRI-left knee joint

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