



Case Study

A CLINICAL STUDY OF KNEE JOINT LIGAMENT INJURY WITH AYURVEDIC TREATMENT

P Krishna Prasad Bhat^{1*}, K Ravindra Bhat², Waheeda Banu³

*1PG Scholar, ²Professor, ³HOD & Professor, Department of P.G studies in Kayachikitsa, Karnataka Ayurveda Medical college and Hospital, Mangalore, D.K District, Karnataka, India.

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ABSTRACT

Knee is one of the largest and most complex joint of body. The complexity is because where there will be fusion of Lateral femorotibial, Medial femorotibial and Femoropatellar joints. Here a case report of 24 years female while playing had a sudden trauma to right knee with severe pain and swelling. Patient was unable to flex the knee joint. On MRI she was diagnosed with thinning and altered signal intensity of anterior cruciate ligament with partial tear and thickening of the medial meniscus with horizontal tear in posterior horn. By this patient was unable to do day to day activities. Here 2 months of Ayurvedic treatment was followed by patient who provided relief from pain and brought a significant improvement in the movement of knee joint.

INTRODUCTION

The knee is the largest synovial joint in body. It consist of three functional compartments that collectively form a dynamic, specialized hinge joint^[1]. It is also a complex joint as the cavity is divided by the Menisci. The knee joint is formed by the condyles of femur, the patella and the condyles of tibia^[2]. The knee joint is supported by the Ligaments such as Fibrous capsule, ligamentum patellae, tibial collateral ligament, fibular collateral ligament, oblique popliteal ligament, arcuate popliteal ligament, anterior cruciate ligament, posterior cruciate ligament, medial meniscus, lateral meniscus and transverse ligament^[3]. Anterior cruciate ligament begins from anterior part of intercondylar area of tibia, runs upwards, backwards and laterally and is attached to the Posterior part of medial surface of lateral condyle of femur. It is taut during extension of knee. Medial meniscus is nearly semicircular, it is wider behind. The posterior fibres of the anterior end are continuous with the transverse ligament. Its Peripheral margin is adherent to the deep part of the tibial collateral ligament^[4]. *Janu Sandhi* is a *Kora Sandhi*^[5] which is in the shape of hinge and are

totally mobile in one direction while partially mobile in opposite direction. *Acharya Sushruta* mentions that in total human body contain 900 *Snayu* (ligaments) in which 600 are present in extremities. Further *Acharyas* explains that 10 *Snayu* is present in *Janu Sandhi*^[6]. The ligaments present in extremities are *Pratanavati* types which are broad in shape. Further while explaining the importance of *Snayu* *acharya Sushruta* explains that injury to bone, muscle, veins will not kill the person but injury to ligaments will kill the person^[7]. Hence a great importance should be given to cure the disease.


Case Report

Presenting Complaint

A 24 year old female named X was apparently normal previously, complained of pain and swelling in right knee joint since 2 months.

History of Presenting Complaint

The patient reported of having sudden trauma to right knee while playing. The knee had twisting movement during which she had severe pain and also developed moderate swelling within one hour. Immediately she consulted a physician nearby and took medication for 7 days and had no relief from pain and swelling. This bothered her day today activities. So she was advised MRI of right knee and physician noticed ligament injury in the report, so she was advised to undergo surgery. So patient opted Ayurvedic treatment for better management.

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Investigation

X-Ray: There were no fractures detected on right knee.

MRI Right knee: Thinning and altered signal intensity of anterior cruciate ligament with partial tear and thickening of the medial meniscus with horizontal tear in posterior horn.

Examination of Right Knee

Inspection	
Swelling	Present
Redness	Absent
Deformity	Absent
Bruising	Absent
Palpation	
Sensation	Intact
Temperature	Present
Pain	Severe
Range of Movements	
Flexion	Limited to 30° with pain
Extension	Limited to 5° with pain
Tests	

Anterior drawer test	Positive
Lachman test	Positive
Pivot Shift test	Positive
Patellar tap test	Positive

Treatment Protocol

Internal medications Prescribed in the course of treatment are:

- *Lakshadi guggulu*
- *Gandha taila* capsule
- *Yogaraja guggulu*
- *Mustadi marma Kashaya*

Procedures followed

- **Lepa:** *Nagaradi Lepa Churna* mixed with *Murivenna* and applied to right knee joint.
- *Janu basti*
- Application of *Gandha taila* to right knee joint.

Advice: Rest and minimal essential movements.

Diet: Milk, ghee, *Madhura* and *Amla rasa Dravya, Shali, Godhuma*.

Treatment Followed Day Wise

Days	Procedure done	Medicine	Condition of patient
Day 1 - 15	<i>Lepa - Nagaradi lepa churna</i> mixed with <i>Murivenna</i> and applied to right knee joint at morning and application of <i>Gandha taila</i> to right knee joint at night.	<i>Laksha guggulu</i> 1-0-1 <i>Gandha taila capsule</i> 1-0-1 <i>Yogaraja guggulu</i> 0-1-0	Swelling reduced Pain - Moderate Movements: Flexion - Limited to 30° with pain Extension - Limited to 5° with pain Tests: Anterior drawer test, Lachman test, Pivot Shift test- Positive
Day 16 - 30	<i>Nagaradi lepa</i> to right knee joint at morning and <i>Janu basti</i> with <i>Kshirabala taila</i> to right knee joint at evening and application of <i>Gandha taila</i> to right knee joint at night.	<i>Laksha guggulu</i> 1-0-1 <i>Gandha taila capsule</i> 1-0-1 <i>Yogaraja guggulu</i> 0-1-0	Swelling - Nil Pain - Mild Movements: Flexion - Possible with pain Extension - Possible with pain Tests: Lachman test- Positive
Day 31 - 45	<i>Nagaradi lepa</i> to right knee joint at morning and <i>Janu basti</i> with <i>Kshirabala taila</i> to right knee joint at evening and application of <i>Gandha taila</i> to right knee joint at night.	<i>Mustadi marma Kashaya</i> 20ml -0-20ml <i>Laksha guggulu</i> 1-0-1 <i>Gandha taila capsule</i> 0-1-0	Swelling - Nil Pain - Nil Movements: Flexion and Extension - Completely possible. Tests: Lachman test, Anterior drawer test Pivot shift test - Negative.
Day 46 - 60	<i>Nagaradi lepa</i> to right knee joint at morning and <i>Janu basti</i> with <i>Kshirabala taila</i> to right knee joint at evening and Application of <i>Gandha taila</i> to right knee joint at night.	<i>Mustadi marma Kashaya</i> 20ml -0-20ml <i>Laksha guggulu</i> 1-0-1 <i>Gandha taila capsule</i> 0-1-0	Swelling - Nil Pain - Nil Movements: Flexion and Extension - Completely possible. Tests: Lachman test, Anterior drawer test Pivot Shift test - Negative.



Application of *Nagaradi lepa* to Right knee joint DISCUSSION

Ligaments are very important structures which hold the bone and helps in proper locomotion. The medial meniscus separates the tibia and femur. It reduces friction between the two bones to allow smooth movement in the knee and distribute load during movement. Injury to this will effect the locomotion of patient. *Bagna chikitsa* holds good for the injury to *Snayu* and helps in curing the disease. In the course of 60 days treatment we planned *Lepa chikitsa* for full period and in addition to it after 15 days we added a *Janu basti* also. Here, firstly for 15 days the *Lepa chikitsa* is followed with *Nagaradi lepa churna* mixed with *Murivenna* at morning and application of *Gandha taila* to affected part at night. *Nagaradi lepa* helps to reduce swelling and reduce pain. *Murivenna* is also well known for its anti-inflammatory, pain relieving, and analgesic property. Overall this *Lepa* helps in rebuilding the weakened and torn ligaments. *Gandha taila* is suggested for internally as well as for external application, it helps in improving strength of bone, joints and ligaments. After 15 days along with *Lepa chikitsa*, *Janu basti* is followed with *Ksheerabala taila*. In *Janu basti* as the name suggests oil is poured and pooled for a fixed duration by constructing a compartment using wet flour. This helps in relieving pain, swelling, improves the movement of knee joint, strengthens the ligament and

helps in overall health of joint. The internal medication such as *Laksha guggulu*, *Mustadi marma Kashaya* has good effect in ligament and bone injury as it has anti-inflammatory activity and has a capacity to heal the injured ligament and *Laksha guggulu* contains calcium which helps in improving ligament health. The *Yogaraja guggulu* is useful to reduce pain and to improve the joint health. Thus 60 days of treatment was done and patient was completely recovered from swelling, pain and was able to walk freely and to do all the normal movements of knee.

CONCLUSION

When conservative management is effective to cure the disease one should adopt it rather than opting surgery. If conservative management fails then one can opt surgery. Here the ligament injury is cured through Ayurvedic treatment and patient was advised strict rest and not to involve in twisting movements. Along with medication rest and Proper *Vihara* of patient can cure the disease faster.

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*Address for correspondence

Dr. P Krishna Prasad Bhat

PG Scholar,

Department of PG Studies in

Kayachikitsa,

Karnataka Ayurveda Medical College

and Hospital, Karnataka, India.

Email:

prasadkrishna594@gmail.com

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