

AYURVEDIC CONSERVATIVE MANAGEMENT OF KNEE LIGAMENT INJURY IN A PEDIATRIC PATIENT: A CASE STUDY**Dr. Rajrajeshwar V. Patil^{1*}, Dr. Gayatri Khade²**¹PG Scholar, Department of Kaumarbhritya, Dr. D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, 411018.²Asso. Professor, Department of Kaumarbhritya, Dr D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, 411018.***Corresponding Author: Dr. Rajrajeshwar V. Patil**PG Scholar, Department of Kaumarbhritya, Dr D. Y. Patil College of Ayurved and Research Centre, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune, 411018. DOI: <https://doi.org/10.5281/zenodo.18480261>**How to cite this Article:** Dr. Rajrajeshwar V. Patil^{1*}, Dr. Gayatri Khade² (2026). Ayurvedic Conservative Management Of Knee Ligament Injury In A Pediatric Patient: A Case Study. World Journal of Pharmaceutical and Medical Research, 12(2), 427-430.

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ABSTRACT

Knee joint ligament injuries are common musculoskeletal disorders, especially among adolescents involved in sports activities. Anterior cruciate ligament (ACL) injuries significantly impair joint stability, mobility, and quality of life. Conventional management often recommends surgical intervention for ligament tears; however, conservative management remains an important option in selected cases. Ayurveda attributes ligament injuries to vitiation of Vata dosha affecting Sandhi (joints) and Snayu (ligaments). The present case study documents the successful Ayurvedic management of a partial ACL tear with associated ligamentous and meniscal injury in a 14-year-old male patient. The patient presented with pain, swelling, restricted movement, and difficulty in walking following trauma. Magnetic Resonance Imaging (MRI) revealed a partial tear of the anterior cruciate ligament and associated findings. The treatment protocol consisted of Panchakarma therapies including Snehana, Swedana, Matra Basti, along with internal medications such as Maharasnadi Kwatha, Triphala Guggulu, and Lakshadi Guggulu. Significant improvement was observed in pain, swelling, gait, and range of motion after 51 days of treatment, without surgical intervention. This case highlights the potential role of Ayurvedic conservative management in knee ligament injuries.

KEYWORDS: Knee joint, Anterior cruciate ligament tear, Panchakarma, Basti therapy.**INTRODUCTION**

The knee joint is the largest and one of the most complex weight-bearing synovial joints of the human body, playing a crucial role in locomotion, stability, and maintenance of posture.^[1] Owing to its anatomical complexity and functional demands, the knee is highly susceptible to traumatic injuries, particularly ligamentous injuries, which are commonly observed in adolescents and young individuals engaged in sports and physical activities.^[2]

Among knee ligament injuries, anterior cruciate ligament (ACL) tears are of significant clinical importance due to their impact on joint stability, restricted mobility, and long-term risk of meniscal damage and early degenerative changes. Conventional management of ACL injuries includes conservative treatment for partial

tears and surgical reconstruction for complete tears or persistent instability. However, surgical intervention may not always be feasible or desirable, especially in pediatric and adolescent populations, highlighting the need for effective conservative treatment modalities.^[3]

In Ayurvedic literature, the knee joint is described as **Jānu Sandhi**, classified under **Kora Sandhi**, and is considered a **Vaikalyakara Marma**, where injury may result in functional disability such as **Khañjatā** (lameness) and **Balakṣaya** (weakness).^[4] Ligaments are included under the structural entity **Snāyu**, and injury to Snāyu (**Snāyu Abhighāta**) is primarily attributed to the vitiation of **Vāta Doṣa**, which governs movement, stability, and neuromuscular coordination in the body.^[7]

Aggravated Vāta in Sandhi and Snāyu manifests clinically as pain, stiffness, swelling, restricted movement, and instability of the joint. Classical Ayurvedic texts advocate conservative management for traumatic musculoskeletal conditions through **Snehana**, **Swedana**, **Basti**, and appropriate internal medications aimed at pacifying Vāta, reducing inflammation, and promoting tissue healing.^[5] **Basti**, in particular, is regarded as the prime therapy for Vāta-dominant

disorders due to its systemic action and nourishment of deeper tissues.^[6]

The present case study aims to document the efficacy of Ayurvedic conservative management, including **Pañcakarma** therapies and internal medications, in a case of partial ACL tear with associated ligamentous and meniscal injury, thereby highlighting the potential role of Ayurveda as a non-surgical therapeutic option in selected cases of knee ligament injuries.

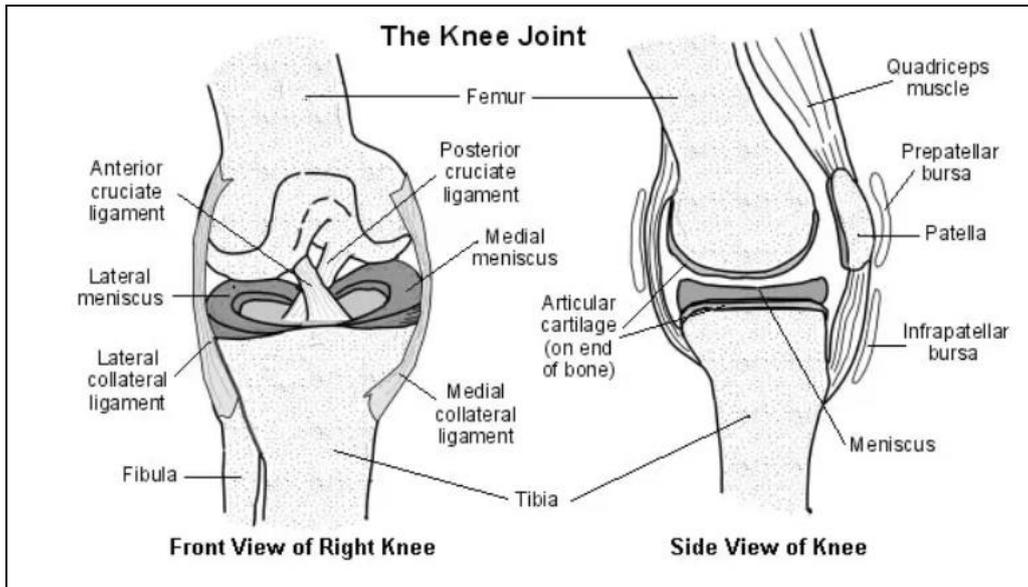


Figure 1: Cross section diagram of the knee.

Source: (<https://patient.info/doctor/knee-ligament-injuries-pro>)

CASE REPORT

Presenting complaint

A 14-year-old Child called x, who had previously appeared normal, had been complaining of pain and swelling, Difficulty in walking, Restricted movement of Left knee.

History of presenting complaint

A patient claimed sustaining a sudden damage to his left knee joint after fall while playing. He complained of acute discomfort and considerable swelling following trauma. After that, he saw a nearby doctor and took drugs for 7 days, but the discomfort and swelling persisted. thus, the physician adviced an MRI of his left knee, and a ligament injury was discovered in the report, thus he was advised to have surgery. So, the patient chose Ayurvedic medicine for better management.

Birth History

- FT/NVD (Full Term Normal Vaginal Delivery)
- Birth weight- 2.8kg, Male
- Immunization history – completed as per schedule

Pretreatment examinations

O/E - Prakruti- Kapha Vataj

Wt. – 65Kg., Height – 151cm, B.P. – 100/72 mmHg,

Pulse – 84/min

Local examination- left knee joint

Inspection

| | |
|-----------|---------|
| Swelling | Present |
| Redness | Absent |
| Deformity | Absent |
| Bruising | Absent |

Palpation

| | |
|--------------------|-----------------|
| Sensation | Intact |
| Temperature | Present |
| Pain | Moderate |

Tests

| | |
|-------------------|----------|
| Lachman Test | Positive |
| Patellar tap Test | Positive |

AshtvidhParikshan

- Nadi – 84/min
- Mala – Vibandha
- Mutra -Prakrut
- Jivha – Sam
- Shabda – Spashta
- Sparsha – Anushna
- Druk – Prakrut

- Aakruti – Sthula

Horizontal tear involving posterior horn and body of medial meniscus.

INVESTIGATION

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

Treatment Protocol

Basti is considered the foremost therapy for Vata dominant disorders involving Sandhi and Snayu.^[8]

2. MRI Left knee

Partial tear of femoral attachment of anterior cruciate ligament with mild edema.

Bala Ashwagandhadi Taila was selected for Snehana and Matra Basti due to its Vata shamaka and Snayu balya properties as described in classical texts.^[10]

Mild edema involving femoral attachment of posterior cruciate ligament possibly strain.

| Days | Treatment done |
|---------|---|
| 7 Days | 1.SthanikSnehan – Bala Tail 2.Mrudu swedan – Nadiswed 3.Matra Basti – Bala Ashwagandha Tail× 7 days |
| 1 Month | 1.Maharasnadi Kwath – 10 ml with lukewarm water twice daily 2.Triphala Guggul 250 mg twice daily 3.Lakshadi Guggul 250mg twice daily 4.Vata Vidhwansak Rasa – twice daily with lukewarm water |
| 15 Days | 1.Snehana – Bala Taila 2.Mrudu Swedana – Nadi Sweda 3.Basti – Balaashwagandhadi Taila (30 ml) × 15 days 4.Maharasnadi Kwath –10 ml, twice daily 5.Vatchintamani Ras –250 mg, twice daily |

Advice: Rest and minimal essential movements.

RESULT AND DISCUSSION

The table below depicts the signs and symptoms of a knee ligament injury. Table 1 demonstrates pain in patients before and after treatment.^[9]

Table 1: Knee Ligament Injury sign and symptoms.

| Sign and symptoms | Before treatment | After 1 st Panchama Setting | After 2 nd Panchakarma Setting |
|----------------------------------|------------------|--|---|
| Pain | +++ | ++ | + |
| Swelling | ++ | + | - |
| Difficulty in walking | +++ | ++ | + |
| Restricted movement of Left knee | +++ | ++ | + |

The ligaments in the knee which are commonly injured are the anterior cruciate and the medial collateral.

Lateral collateral ligament of knee is rarely injured. Grade I and Grade II tears of these ligaments are usually managed conservatively, whereas in case of Grade III tear surgical repair and reconstruction are usually done.

Basti will initiate its nourishment of the knee joints, alleviates the dosha that causes discomfort or pain (by utilizing appropriate oils), calms the nerves, addresses degeneration, stiffness, and inflammation, and alleviates pain.

CONCLUSION

When conservative therapy is beneficial in curing the disease, it should be preferred over surgery. If

conservative treatment fails, surgery may be an option. Suśrutha Saṁhitha provides a conventional Ayurvedic therapy strategy for managing injuries. Before planning treatment, a thorough understanding of the damage must be obtained by physical examination and evidence-based special investigations. A collective regimen using Ayurveda treatment can result in a better overall outcome in terms of signs and symptoms as well as post-traumatic consequences. According to ĀcāryaSuśrutha^[7], conservative management should be tried first in śāstrasādhyavyādhi if conditions allow, followed by surgery if conservative management fails.

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