

## CLINICAL OUTCOMES OF ANTERIOR CRUCIATE LIGAMENT (ACL) TEAR TREATED WITH AYURVEDIC SCIENTIFIC REVERSAL DETOX PROCESS (SRDP): A CASE REPORT

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### ABSTRACT

**Background:** Anterior Cruciate Ligament (ACL) tears are among the most common sports-related injuries, often requiring surgical intervention. However, traditional *Ayurvedic* approaches offer promising, non-invasive alternatives for functional recovery and joint stabilization. This case study explores the effectiveness of Scientific Reversal Detox Process (SRDP) in the Ayurvedic management of ACL tear. **Objective:** To evaluate the outcomes of an integrated *Ayurvedic* SRDP approach in the conservative management of an ACL tear without surgical intervention. **Case Summary:** A 31-year-old male patient presented with clinical and radiological diagnosis of a partial ACL tear in the right knee, associated with pain, swelling, instability, and restricted movement. He declined surgical management and opted

for *Ayurvedic* care. A personalized SRDP regimen was initiated, consisting of *Abhyanga* (therapeutic oil massage), *pottali Swedana* (bundle fomentation), *Janu Dhara* (oil pooling), Colon therapy (medicated enema), and internal administration of medicines over a period of 2 months. **Results:** By the end of treatment, the patient reported significant reduction in pain (VAS score reduced from 8 to 1), improved knee stability, and enhanced range of motion, reduced swelling, stiffness. Functional improvement was assessed using the koos score which improved from 52 (poor) to 90 (good). MRI after treatment showed the tear had not

worsened, and the patient was able to resume normal activities without any signs of pain or knee instability. **Conclusion:** This case demonstrates that the SRDP protocol can be a viable non-surgical option for managing ACL tears, particularly in partial injuries. Larger-scale studies with objective imaging follow-up are needed to further validate these clinical outcomes.

**KEYWORDS:** ACL Tear, SRDP therapy, *Snayugata Vata*, Non-Surgical Management.

## INTRODUCTION

Anterior Cruciate Ligament (ACL) tears are among the most common and debilitating knee injuries, particularly affecting athletes and individuals engaged in high impact activities.<sup>[1-4]</sup> The ACL plays a critical role in stabilizing the knee joint, and its injury often results in pain, swelling, restricted movement, and joint instability.<sup>[5,6]</sup> Conventional treatment options range from conservative physiotherapy to surgical reconstruction, which, despite being effective, carry risks such as graft failure, post-surgical complications, and delayed rehabilitation.<sup>[3,7,8]</sup> From an *Ayurvedic* perspective, ACL injury can be correlated with *Snayugata Vata* and *Marma Abhigata*, where the integrity of ligaments (*Snayu*) and vital points (*Marma*) is compromised due to trauma (*Abhigata*) and aggravated *Vata Dosha*. Ayurveda offers a multidimensional therapeutic approach focusing on *Dosha* pacification, tissue regeneration, pain relief, and functional restoration.

The Scientific Reversal Detox Process (SRDP) is an integrative therapeutic framework developed to address musculoskeletal and neurological disorders through a structured combination of Ayurvedic therapy and physiotherapy. The protocol aims to reverse early degenerative changes, promote ligament healing, and restore joint function without the need for invasive surgical procedures. This paper presents a clinical evaluation of SRDP therapy in a patient with an ACL tear who opted for non-surgical management. The study aims to assess the effectiveness of SRDP in reducing pain, improving joint stability, and facilitating return to normal activity, thereby exploring its role as a viable alternative to surgical intervention in ACL injuries.

## CASE REPORTS

A 31-year-old male presented with complaints of right knee pain and restricted range of motion, particularly painful flexion, persisting for the past three months.

The history revealed that the patient was in good health until three months ago, when he sustained an injury to his right knee following a fall from a bike. He developed localized swelling over the knee and subsequently sought treatment at a nearby allopathic hospital, where he was diagnosed with a partial tear of the anterior cruciate ligament (ACL) of the right knee. He underwent conservative management, including immobilization with a plaster of Paris (POP) cast for two weeks and was prescribed analgesics, which provided temporary relief.

However, over the past three months, his symptoms gradually worsened. He began experiencing diffuse pain in the knee along with increasing restriction in both flexion and extension movements. These symptoms significantly interfered with his daily activities and professional responsibilities. Due to the persistence and progression of these issues, he visited our clinic seeking further treatment.

## INVESTIGATION

Magnetic Resonance Imaging (MRI) of the right knee demonstrated features indicative of a partial tear of the anterior cruciate ligament, characterized by thinning and signal intensity changes

### Examination of Right Knee

Inspection	
Swelling	Present
Redness	Absent
Deformity	Absent
Bruising	Absent
Palpation	
Sensation	Normal
Temperature	Present
Pain	Severe
Range of movements	
Flexion	Limited to 95° with pain
Extension	Limited to 5° with pain

### Test

Anterior drawer test: Positive

Lachman test: Positive

Patellar tap test: Positive

**General Examination**

*Mala: Samyaka* (2 times a day)

*Mutra: Samyaka* (4-5 times a day)

*Kshudha: Samyaka*

*Trushna: Samyaka*

*Jivha: Eshat Sam*

*Shabda: Spashta*

*Sparsha: Samashitoshna*

*Aakruti: Madhyam*

**Nidana (Causative Factors)**

- **Diet:** Dry, cold, light, less unctuous food (Vata aggravating)
- **Lifestyle:** Excessive physical exertion, inadequate sleep, cold exposure
- **Injury:** Direct trauma to ligaments or tendons
- **Mental stress:** Anxiety, fear, emotional disturbances (can vitiate Vata)

*Samprapti:* No specific *Samprapti* has been explained for *Snayugata Vata*. So, it can be said that *Samprapti* of *Snayugata Vata* is same as that of general *Samprapti* of *Vatavyadhi*.

*Nidana* (Causative factors) → *Vata dosha prakopa* (aggravation) due to dryness, trauma, overuse, etc. → *Doshagati* (movement) of aggravated *Vata* to *Snayu* → *Sthanasamshraya* (lodgment) in degenerated or weak *Snayu* tissues → *Snayu dushti* due to *VatSa's* dry, mobile, and destructive qualities → Clinical manifestation (*Lakshanas*) such as pain, stiffness, limited movement etc.

**Medicinal intervention**

**Physiotherapy:** - 15 session (3 times in week)

- 1) TENS
- 2) Ultrasound therapy
- 3) Isometric exercises

**Treatment Followed for first month (03/04/2025 to 02/05/2025)**

Medicine (03/04/2025 to 17/04/2025)	Dose (03/04/2025 to 17/04/2025)	Time	Medicine (18/04/2025 to 02/05/2025)	Dose (18/04/2025 to 02/05/2025)	Time	Procedure (03/04/2025 to 17/04/2025)	Procedure (18/04/2025 to 02/05/2025)
Tb SRDP	2-0-2	After food	Tb SRDP	2-0-2	After food	Abhyagam with pottali oil	Abhyagam with pottali oil
Tb Shulaghna	2-0-2	Before food	Tb Shulaghna	2-0-2	Before food	Rheumo Pottali	Tero Pottali
Uriflex Granules	2-0-2 spoon	After food	Syp Edoflex	2-0-2 spoon	After food	Dhanyamla dhara	Murrivena oil dhara
SRDP Powder	1 spoon in increasing quantity	Before food for 7 days	Tb Ostoflex	2-0-2	Before food for 7 days	Shulaghna lepa	Dharasana lepa
Laxoflex Oil	4 spoons	On 8 <sup>th</sup> day			At morning	Leech therapy on 10 <sup>th</sup> day	Leech therapy on 20 <sup>th</sup> day

**Treatment Followed for second month (03/05/2025 to 02/06/2025)**

Medicine (03/05/2025 to 17/05/2025)	Dose (03/05/2025 to 17/05/2025)	Time	Medicine (18/05/2025 to 02/06/2025)	Dose (18/05/2025 to 02/06/2025)	time
Tb SRDP	2-0-2	After food	Tb orthoflex	2-0-2	After food
Tb Teroflex	2-0-2	After food	Tb teroflex	2-0-2	After food
Tb Edoflex	2-0-2	After food	Tb ostoflex	2-0-2	After food
Tb Shulaghna	2-0-2	Before food	Syp teroflex	2-0-2 spoon	Before food

**Physiotherapy**

Physiotherapy plays a crucial role in managing *Snayugata Vata* by alleviating symptoms and promoting functional recovery. Techniques such as **TENS (Transcutaneous Electrical Nerve Stimulation)** are used to reduce nerve related pain by modulating pain signals, offering significant relief in *Vata* aggravated conditions. **Ultrasound therapy** is another effective modality that aids in deep tissue healing and reduces localized inflammation, thereby supporting regeneration of affected ligaments and tendons. The application of **moist heat packs** helps counteract the *ruksha* (dry) and *sheeta* (cold) qualities of vitiated *Vata*, relieving stiffness and improving peripheral circulation. To address muscle weakness that often accompanies *Snayugata Vata*, **isometric exercises** are introduced initially, allowing muscle activation without joint movement and avoiding further strain on the involved structures. As strength improves, **progressive resistance training** is implemented to build stability around the affected joint, support the ligaments, and restore normal biomechanics. Together, these physiotherapeutic interventions complement therapies, leading to faster and more sustainable recovery.

## OBSERVATION AND OUTCOME

Table showing before after treatment score

Objective	Before treatment (03/04/2025)	After treatment (02/06/2025)
Pain	8	0
Swelling	Present	reduced
Range of motion	95 degrees	110 degrees
Koos score	50	95

After treatment walking time increase from 15 min to 1 hr without pain

## DISCUSSION

This case study illustrates a successful application of the Ayurvedic Scientific Reversal Detox Process (SRDP) in the conservative management of a partial ACL tear. The integrative approach, combining therapies, internal medications, and physiotherapy, produced substantial clinical improvement without surgical intervention.

The patient initially presented with symptoms typical of *Snayugata Vata*, such as joint pain, swelling, restricted range of motion, and instability<sup>[9]</sup> In *Ayurveda*, ACL injury corresponds to *Snayu Marma Abhigata* involving *Vata* vitiation in *Snayu* tissues, resulting in dysfunction and degeneration. The treatment was guided by principles aimed at *Vata shamana*, *Snayu Poṣhaṇa* (nourishment of ligaments), and *Marma Chikitsa*.

The SRDP protocol incorporated therapies like *Abhyanga*, *Pottali Swedana*, *Dhanyamla dhara*, *Janu Dhara*, and *Basti*, which worked synergistically to relieve stiffness, promote circulation, and detoxify the system. Internal medications such as *Shulaghna*, *Ostoflex*, *Edoflex*, and SRDP tablets were selected to reduce inflammation, enhance ligament healing, and restore neuromuscular coordination. The addition of leech therapy (*Jalauka*) on the 10th and 20th days further supported local decongestion and microcirculation, aligning with the Ayurvedic principle of *Shonita Mokshana* for pain and swelling relief.

Physiotherapy, integrated with *Ayurvedic* care, played a significant role in regaining joint function. Modalities like TENS and ultrasound therapy helped in pain modulation and tissue regeneration. Isometric and resistance exercises were systematically introduced to strengthen the surrounding musculature and support the healing ligament, contributing to enhanced joint stability and functional recovery.

Teroflex tablet contains *lakshadi guggulu*, *tapyadi loha*, *raktapachak* and other drugs, this formulation acts through a multi-dimensional approach in ligament injuries. It reduces

inflammation and pain, stimulates collagen synthesis and fibroblast activity for ligament repair, and enhances circulation for better nutrient delivery. By balancing *VataKapha*, it minimizes stiffness and swelling, while its antioxidant effects prevent degeneration. The presence of *Rasayana dravyas* further ensures systemic rejuvenation and faster recovery with sustained ligament strength.

Teroflex syrup is a classical *Ayurvedic* decoction indicated in musculoskeletal and joint disorders, especially those involving ligaments, tendons, and *marma* structures. With *Musta* (*Cyperus rotundus*)<sup>[10]</sup> as the chief ingredient, it exhibits anti-inflammatory, analgesic, and *Dipana Pachana* actions, reducing *shotha* (swelling), relieving *vedana* (pain), and correcting *ama* related pathology. By supporting *strotoshodhana*, enhancing tissue metabolism, and pacifying *VataKapha doṣhas*, it proves effective in ligament tears, meniscus injuries, osteoarthritis, and *Snayugata Vata*. Its *Rasayana* properties further strengthen connective tissues, improve flexibility, and promote faster recovery, offering both symptomatic relief and regenerative support.

*Murivenna Taila*<sup>[11]</sup> use for *taildhara* demonstrates significant therapeutic efficacy in the management of ligament tears. It possesses natural analgesic and anti-inflammatory properties, stimulating cutaneous nerve endings to reduce pain perception and enhancing the transdermal absorption of active phytoconstituents. Constituents such as Aloe vera and Shatavari accelerate tissue repair by promoting fibroblast proliferation, collagen synthesis, and extracellular matrix remodeling, thereby supporting ligament healing. The oil base, fortified with medicinal herbs, acts as a *strotoshodhaka* while maintaining a *rukṣa, snigdha* balance, which facilitates nutrient delivery and the clearance of inflammatory mediators. *Murivenna Taila* effectively pacifies vitiated *Vata* (responsible for pain, stiffness, restricted mobility) and *Kapha* (causing swelling and heaviness), thus offering a comprehensive approach to pain relief, functional restoration, and tissue regeneration.

### On Bandaging with *Murivenna Taila*<sup>[11]</sup>

After applying *Murivenna* oil to the affected joint, a *Pichu* (cotton pad soaked in oil) or *bandhana* (oil-soaked cloth bandage) is traditionally applied. This ensures prolonged retention of the medicine, deeper penetration, continuous local warmth, and protection of the injured site. Bandaging not only stabilizes the joint but also prevents excessive movement, reduces swelling, and accelerates healing.



Tero *Pottali* use for *Pottali Swedana* which contains drugs *Ashwagandha*, *Bala*, *Devdar*, *Tagar*, *Dashmool*, *Udid*, *Kushta*. The *Pottali Swedana* prepared with *Ashwagandha*, *Bala*, *Devadaru*, *Tagara*, *Dashamula*, *Udid*, and *Kuṣṭha* demonstrates a comprehensive therapeutic potential in managing ligament tears. *Devadaru*, *Dashamula*, and *Kuṣṭha* exhibit potent anti-inflammatory and analgesic effects, effectively reducing local pain and swelling<sup>[12–14]</sup> *Ashwagandha* and *Bala* stimulate fibroblast proliferation, collagen synthesis, and ligament remodeling, thereby facilitating structural repair and recovery<sup>[15,16]</sup> *Kuṣṭha* and *Devadaru* further enhance local blood circulation and nutrient delivery, optimizing the healing microenvironment.<sup>[13,17]</sup> *Tagara* and *Dashamula* contribute to the prevention of stiffness and restoration of joint mobility, while the *Rasayana* and *Brimhana* actions of *Ashwagandha*, *Bala*, and *Udid* strengthen ligaments, improve tissue resilience, and support long-term regenerative recovery. Collectively, this integrative *Pottali Swedana* protocol not only alleviates acute symptoms but also promotes regenerative healing of ligament injuries.

The drugs incorporated in *Dharasana Lepa* exert a multifaceted therapeutic action in ligament and meniscus injuries. These agents possess potent anti-inflammatory properties, effectively reducing swelling and pain at the injury site while simultaneously accelerating collagen synthesis and supporting ligament fiber repair. Their antioxidant activity helps to neutralize oxidative stress, thereby preventing further tissue degeneration and promoting a favorable environment for healing. Certain constituents are known to enhance blood circulation in connective tissues, which not only aids in nutrient delivery but also facilitates cartilage and ligament regeneration. Additionally, the formulation provides a cooling and analgesic effect, improving local blood flow through a counter irritant mechanism and reducing stiffness of the affected area. The natural analgesic action is further enhanced by stimulating cutaneous nerve endings, which diminishes pain perception. Importantly, some components of the *lepa* also act as bioavailability enhancers, facilitating deeper penetration and absorption of other active phytoconstituents, thereby amplifying the overall therapeutic efficacy. Collectively, these actions make *Dharasana Lepa* a rational and effective intervention for ligament and meniscus tear management.

Outcome measures in this case were objectively tracked. The VAS pain score improved from 8 to 0, and knee range of motion improved from 95° to 110°. The most notable improvement was observed in the KOOS score, which increased from 50 to 95, indicating a marked enhancement in pain, function, and quality of life. The patient was able to walk for over an



hour without pain post-treatment, reflecting a significant improvement in endurance and joint function. Furthermore, the MRI confirmed that the ligament tear had not worsened, which is critical in conservative ACL management.

These outcomes align with current research supporting the efficacy of Ayurveda-based rehabilitation protocols in musculoskeletal injuries, particularly in early or partial ligament tears. This case suggests that SRDP can act as a viable non-surgical approach for selected ACL injuries, with the added advantage of being holistic, non-invasive, and regenerative in nature.

However, this being a single-case report, further research through controlled clinical trials and long-term follow-ups is needed to validate the efficacy, reproducibility, and safety of SRDP therapy for ligament injuries, especially in comparison with conventional surgical outcomes.

## RESULT

The patient underwent a two-month SRDP-based Ayurvedic treatment protocol combined with physiotherapy for a partial ACL tear of the right knee. Following treatment, the VAS score for pain reduced dramatically from 8/10 to 0/10, indicating complete pain relief. Swelling and stiffness significantly decreased, with improved mobility and absence of tenderness on palpation. Functional capacity also improved notably, with the patient progressing from walking 15 minutes with discomfort to 1 hour without pain or instability and resuming routine activities without support. Overall, substantial clinical recovery was achieved through this integrative non-surgical approach.

## CONCLUSION

This case study highlights the potential effectiveness of the Scientific Reversal Detox Process (SRDP) as a non-surgical, integrative approach in the management of partial ACL tears. The combination of Ayurvedic therapies and physiotherapeutic interventions resulted in marked pain relief, improved joint stability, enhanced range of motion, and significant functional recovery. The substantial improvement in KOOS scores and the absence of progression on MRI indicate the therapeutic promise of SRDP in promoting ligament healing and restoring knee function. While these results are encouraging, larger clinical studies with imaging-based outcomes are warranted to further validate its role as a reliable alternative to surgical intervention in selected ligament injuries.

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