



Case Study

A SINGLE CASE STUDY ON *AMLIKADI LEPA* IN THE MANAGEMENT OF ANKLE SPRAIN
(*GULPHA SANDHIJA ABHIGHATAJA SHOTHA*)

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ABSTRACT

Injury is defined as any physical harm or damage to the body resulting from accidents, falls, sudden twisting, or other physical activities. Among various types of injuries, musculoskeletal injuries are the most common, affecting muscles, ligaments, bones, cartilage, and related supporting structures. Ankle sprain is one of the most frequently observed conditions in clinical settings. It occurs not only in athletes and dancers but also during routine daily activities due to improper foot placement or abrupt twisting movements. According to Ayurveda, the ankle joint (*Gulpha Marma*) is included among the twenty *Sandhi Marma* (vital points associated with joints) and the eight *Rujakara Marma*, which are particularly sensitive and produce intense pain when injured. Trauma to this region often leads to significant pain, swelling, and restricted movement. Such injuries are classified under *Agantuja Vyadhi* (externally induced disorders) and are correlated with *Abhighataja Shotha* or *Agantuja Shotha* (traumatic swelling). Ayurvedic management emphasizes *Alepa* (application of medicated paste) as the primary treatment for *Shotha* (inflammation). A 22-year-old male patient presented with complaints of pain, swelling, and limited movement in the left ankle following a sudden twisting injury one day prior. He was diagnosed with ankle sprain (*Gulpha Sandhija Abhighataja Shotha*) and treated with *Amlikadi Lepa* along with *Bandhana* (bandaging) for 15 days. Post-treatment, the patient showed marked improvement, with significant reduction in pain and swelling and restoration of ankle mobility.

INTRODUCTION

An ankle sprain is a common musculoskeletal injury that occurs when the ligaments supporting the ankle joint are stretched or torn. It usually results from a sudden twisting or rolling of the foot, which may happen during daily activities such as walking on uneven surfaces, accidental slips, falls, or physical exertion. Although ankle sprains are frequently seen in athletes and individuals involved in sports, they can also occur in the general population during routine movements. It has been estimated that sprained ankles account for

approximately 16–40% of injuries reported in medical clinics.^[1]

Ligaments play an essential role in maintaining the stability of the ankle joint, which is naturally prone to instability due to its structure and range of motion. The most common type of ankle sprain involves a partial or complete tear of the medial or lateral collateral ligaments of the ankle joint. Despite appearing to be a minor injury, ankle sprains often cause significant pain, swelling, discomfort, and difficulty in movement, which can affect an individual's daily activities.

Ankle Sprain in Ayurveda

According to Ayurveda, *Marma* point is an anatomical site where *Mamsa* (muscle), *Sira* (blood vessels), *Snayu* (ligaments), *Asthi* (bones), *Sandhi* (joints) meet together. Acharya Sushruta mentioned there are five types of *Marmas*. Among them, eight *Rujakar Marmas* include two *Gulpha* which can be

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correlated with ankle joint. Acharya Sushruta also have mentioned its dimension as two *Angula*. The *Gulpha Marma* is one among 20 *Sandhi Marma* (vital points related to joints).^[2] *Marmasthana* is vital and most vulnerable point of the body. Acharya has also explained *Ruja* (pain), *Stabdhta* (stiffness), and *Khanjta* (difficulty in walking) as *Viddha lakshana* of *Rujakara Marma* in *Shareer sthana*. The symptoms of sprain are similar to these *Lakshana*.^[3]

Case Report

Name: XYZ
 Age: 22 years
 Sex: Male
 OPD no: 8115
 Occupation: Student
 Address: Ahmedabad
 Date of visit: 23/03/2026
 Socioeconomic status: Middle class
 Marital status: Unmarried
 Personal history: No any
 Family history: No any

Chief Complaints with Duration

Pain in left ankle	1 day
Swelling at left ankle	1 day
Difficulty in movement and walking	1 day

History of Present Illness

A male student, age 22, presented himself to the Shalyatantra Outpatient Department (OPD No. 14) of Government Akhandanand Ayurveda Hospital, Ahmedabad, Gujarat, India, complaining of excruciating pain and swelling in his left ankle joint. Yesterday, while stairs down, he had a history of twisting his left foot. He had difficulty walking and moving his foot. On clinical examination, he had mild tenderness, restricted and painful movements.

Past History: No

MATERIALS AND METHODS

Consent: Before starting treatment, consent was obtained, an investigation was conducted, and the study was carried out as per ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants.

Investigation: X-ray of left foot (AP and Lateral view) X-ray was normal. No fracture condition was seen.

Diagnosis: *Gulpha Sandhija Abhighataja Shotha* (ankle sprain)

Treatment

Application of *Amlikadi* (fruit pulp of *Tamarindus indicus* along with *Saindhav Lavana*) *Lepa* and *Bandhana* for immobilization twice daily (morning and evening) for 15 days.

Preparation of Lepa: Powdered *Saindhav Lavana* taken in bowl and *Lepa* is prepared by mixing it with *Amlika Phala rasa* (fruit pulp) which is then applied to the patients' sprained ankle with a thickness of *Ardra Maheesh Charma* (4-5mm) and in *Pratiloma Gati* (opposite direction of hairs). The *Lepa* is removed with a cotton cloth soaked in warm water before it dries up. Then after crepe bandage applied over affected part for provide support and immobilization. The same procedure was done twice a day for 15 days.

Other Medication: No oral medication was given to this patient.



OBSERVATION

Assessment criteria	Before treatment	After 7 days	After 15 days
Pain	2	1	0
Tenderness	1	0	0
Difficulty of function	1	1	0
Stiffness	0	0	0
Discoloration	0	0	0
Swelling	2	0	0
Dorsiflexion	2	1	0
Plantarflexion	2	1	1
Adduction	1	0	0
Abduction	1	0	0
Inversion	2	1	1
Eversion	2	1	0
Total score	16	6	2

RESULT AND DISCUSSION

Bandaging after *Amlikadi Lepa* application in ankle sprain significantly relieved subjective and objective criteria. After 15 days of treatment, swelling, pain, and tenderness were reduced, and movement improvement was also seen. Ankle sprain can be correlated to *Abhighataj shotha* or *Agantuja shotha*, and *Alepa*^[4] is the first *Upakrama* in *Sarvasotha*. *Acharya Vangsenal*^[5] and *Acharya Bhavprakasha*^[6] advocated that *Amlikadi Lepa* is useful in every *Shotha* (swelling). It relieves *Raga* (redness) and *Ruja* (pain) in every *Shotha* and acts as an analgesic. *Saindhava Lavana* possesses *Laghu* (light), *Snigdha* (unctuous), and *Tikshna* (sharp) *guna*, along with *Sheeta veerya* (cold potency) and *Tridoshashamaka* properties. It performs *Agnideepana* (enhances digestive fire), *Pachana* (digestion), *Ruchya* (improves taste), *Netriya* (beneficial for eyes), *Hridiya* (cardiotonic), and *Vrishya* (aphrodisiac) actions. Therapeutically, it exhibits *Shothahara* (anti-inflammatory), *Vibandhagna* (relieves constipation), and *Vranadoshahara* (promotes wound healing) properties, thereby contributing to the reduction of swelling and associated symptoms.^[7] *Amlika Phala* is characterized by *Amla rasa*, which varies as *Atyamla* in the unripe stage and *Madhuramla* in the ripe stage. It possesses *Guru* (heavy) and *Ruksha* (dry) *guna*, *Ushna veerya* (hot potency), and *Amla vipaka*. The *Apakva phala* (unripe fruit) exhibits *Vata shamaka* action while increasing *Kapha* and *Pitta*, and may act as *Raktapittakaraka*. In contrast, the *Pakva phala* (ripe fruit) shows *Pitta shamaka* and *Kapha-Vata shamaka* effects, thereby helping in

balancing *Doshas* and reducing inflammation.^[8] When applied externally as *Lepa*, the active principles of *Saindhava Lavana* and *Amlika Phala* are absorbed through the skin. Application against the direction of hair facilitates penetration through *Romakupa* (hair follicles), followed by absorption via *Swedavaha Srotas* (sweat glands) and *Siramukha* (venules). Subsequently, the absorbed substances undergo *Pachana* by *Bhrajakapitta* situated in *Twacha* (skin), leading to local pacification of vitiated *Doshas* and alleviation of symptoms such as pain, swelling, and tenderness. The *Ushna veerya*^[9] of *Amlika Phala* promotes vasodilation and improves local circulation, aiding in the reduction of swelling and stiffness, while *Saindhava Lavana*, due to its *Snigdha* and *Tikshna guna*^[10], enhances penetration and facilitates drug absorption. Together, they exert significant *Shothahara* and *Vedanashamaka* effects, thereby improving functional mobility and accelerating recovery in conditions like ankle sprain.



Before treatment: Swelling



After treatment: No swelling

CONCLUSION

It was observed that *Bandhana* (bandaging) following the application of *Amlikadi Lepa* is highly effective in the management of ankle sprain as well as other musculoskeletal injuries arising from sports activities and accidental or daily life trauma. The drugs used in this *Lepa* are easily available in Ayurveda hospitals, can be conveniently administered at the OPD level, and are cost-effective. The encouraging outcomes indicate that this treatment modality can be beneficial not only in sports-related injuries but also in ankle sprains occurring due to non-sporting causes such as improper foot placement or accidental twisting. With further large-scale clinical studies involving a wider range of musculoskeletal injuries, Ayurveda has significant potential to contribute effectively to the field of sports medicine and injury management.

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