

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

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ABSTRACT

Trauma or physical injury encompasses any bodily harm resulting from accidents, falls, sudden twisting movements, or other forms of physical exertion. Among the wide spectrum of injuries encountered in clinical practice, musculoskeletal injuries are the most prevalent, involving the muscles, ligaments, bones, cartilage, and associated supportive tissues. Ankle sprain is among the most frequently presenting musculoskeletal complaints. It affects not only sportspersons and dancers but also individuals engaged in ordinary daily activities involving improper foot placement or abrupt rotational movements. According to Ayurveda, the ankle joint (*Gulpha Marma*) is counted among the twenty *Sandhi Marma* (vital joint-related points) and the eight *Rujakara Marma*, which are highly susceptible regions that elicit severe pain when

traumatised. Injuries to this region typically produce marked pain, swelling, and restricted joint mobility. In Ayurveda, such traumatic conditions are classified under *Agantuja Vyadhi* (exogenous disorders) and more specifically correlated with *Agantuja Shotha* (traumatic or externally induced swelling), as elaborated in *Sushruta Samhita*. The *Shotha* arising from trauma (*Abhighata*) involves vitiation of all three *Doshas*, primarily *Vata* and *Pitta*. Ayurvedic management advocates *Alepa* (topical medicated paste) as the foremost *Upakrama* for *Shotha*. In this case, a 22-year-old male patient presented with pain, swelling, and restricted movement in the left ankle following a sudden twisting injury. He was diagnosed with ankle sprain (*Gulpha Sandhija Agantuja Shotha*) and managed with *Nyagrodhadi Lepa*

along with *Bandhana* (bandaging) for 15 days. The patient demonstrated significant clinical improvement, with notable reduction in pain, swelling, and restoration of ankle mobility by the end of treatment.

KEYWORDS: *Gulpha Sandhi, Ankle Sprain, Agantuja Shotha, Rujakara Marma, Nyagrodhadi Lepa.*

INTRODUCTION

An ankle sprain is a common musculoskeletal injury that occurs when the stabilizing ligaments of the ankle joint are subjected to excessive stretch or rupture. It typically arises from a sudden inversion or twisting of the foot during routine activities such as ambulation on uneven terrain, accidental slipping, falls, or strenuous physical exertion. While ankle sprains are frequently reported among athletes and sports professionals, they are also widely observed in the general population during everyday activities. Epidemiological data suggest that ankle sprains constitute approximately 16–40% of all musculoskeletal injuries presenting at medical facilities.^[1]

The ligaments are indispensable for the biomechanical stability of the ankle joint, which is inherently susceptible to instability owing to its anatomical configuration and extensive range of motion. The most prevalent form involves partial or complete disruption of the medial or lateral collateral ligamentous complex. Although often regarded as a minor injury, ankle sprains are associated with considerable pain, swelling, and functional impairment that can significantly affect an individual's daily routine and quality of life.

Ankle Sprain in Ayurveda – Correlation with Agantuja Shotha

Acharya Sushruta, in *Sushruta Samhita*, has enumerated *Shotha* arising from external trauma under the category of *Agantuja Shotha*. As per *Sutra Sthana* (17th chapter), *Agantuja Shotha* develops when external forces such as blows, falls, or twisting injuries precipitate localised swelling through a *Tridoshaja* mechanism, with predominant involvement of *Vata* and *Rakta*.^[2] The symptoms of ankle sprain—acute swelling, localised pain, erythema, and restricted mobility—closely correspond to the *Agantuja Shotha* description.

Furthermore, the *Marma* concept of Ayurveda defines anatomically critical junctions where *Mamsa* (muscle), *Sira* (blood vessels), *Snayu* (ligaments), *Asthi* (bone), and *Sandhi* (joint) converge. Acharya Sushruta has identified 107 *Marma* points, classifying them into five types

based on the predominant tissue involved. Among them, *Gulpha* is included in the eight *Rujakara Marma*—those which, upon injury, produce intense pain.^[3] The *Gulpha Marma* is also one of the twenty *Sandhi Marma* (joint-associated vital points), localised at the ankle joint with a dimension of two *Angula*. The *Viddha Lakshana* (features of injury) of *Rujakara Marma* include *Ruja* (pain), *Stabdhatta* (stiffness), and *Khanjata* (limping)—features that are characteristically mirrored in ankle sprain.^[4]

Nyagrodhadi Lepa – Textual Reference from Yogaratnakara

The *Nyagrodhadi Lepa* is a classical formulation documented in *Yogaratnakara* under the chapter on *Shotha Chikitsa*. The formulation consists of *Nyagrodha* (*Ficus benghalensis*), *Udumbara* (*Ficus racemosa*), *Ashwattha* (*Ficus religiosa*), *Plaksha* (*Ficus lacor*), and *Madhuka* (*Glycyrrhiza glabra*), processed with *Godhuma* (wheat) and *Dadhi* (curd).^[5] According to *Yogaratnakara*, this *Lepa* is specifically indicated in *Shotha* of traumatic or inflammatory origin and possesses *Shothahara* (anti-inflammatory), *Vedanashamaka* (analgesic), and *Vranashodhana* (wound-cleansing) properties, making it an appropriate topical choice for ankle sprain management.

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:** Nil

Family History: Nil

Chief Complaints with Duration

Complaint	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 22-year-old male student presented to the Shalya Tantra Outpatient Department (OPD No. 05) of Vaidya Yagya Dutt Sharma Ayurved Mahavidhyalya Khurja, Bulandshahar U.P India, with acute onset of severe pain and swelling over the left ankle joint. The patient reported that while descending a staircase the previous day, his left foot underwent a sudden inward twisting movement, following which he experienced immediate pain, progressive swelling, and significant difficulty in bearing weight and walking. On clinical examination, mild-to-

moderate tenderness was noted over the lateral aspect of the left ankle, with visible swelling and markedly restricted, pain-restricted range of motion.

Past History: Not significant.

MATERIALS AND METHODS

Consent and Ethical Compliance

Written informed consent was obtained from the patient prior to initiating treatment. The study was conducted in adherence to the ICMR National Ethical Guidelines for Biomedical and Health Research Involving Human Participants.

INVESTIGATION

X-ray of the left foot (AP and Lateral views) was performed and was within normal limits.

No evidence of fracture or dislocation was detected.



Fig. 1: X-Ray of left ankle joint AP/lateral view.

DIAGNOSIS

Gulpha Sandhija Agantuja Shotha (Ankle Sprain)

Treatment Protocol

Topical application of *Nyagrodhadi Lepa* followed by *Bandhana* (crepe bandaging) for immobilisation, administered twice daily (morning and evening) for 15 consecutive days.

Preparation of Nyagrodhadi Lepa

The *Nyagrodhadi Lepa* was prepared by taking the bark of *Nyagrodha*, *Udumbara*, *Ashwattha*, *Plaksha*, and *Madhuka* in equal proportions, grinding them into a fine paste with *Dadhi* (curd) as the medium (*Drava*). The prepared paste was applied over the sprained ankle

at a thickness of 4–5 mm (equivalent to *Ardra Maheesh Charma*), in *Pratiloma Gati* (direction opposite to hair follicles) to facilitate dermal absorption through *Romakupa* (hair follicles). The *Lepa* was removed using a cotton cloth soaked in warm water prior to complete drying. Subsequently, a crepe bandage was applied over the affected region for support and immobilisation. The procedure was repeated twice daily for 15 days.

Other Medication: No oral or systemic medications were administered during the treatment period.

OBSERVATIONS

Clinical assessment was performed using a standardised scoring system before treatment, after 7 days, and after 15 days of treatment, evaluating the following parameters

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

The application of *Nyagrodhadi Lepa* followed by *Bandhana* produced clinically significant improvement in both subjective and objective parameters of ankle sprain. At the end of 15 days, pain, tenderness, and swelling resolved completely, while range of motion was markedly restored across all planes of ankle movement.

In Ayurvedic nosology, ankle sprain is most appropriately correlated with *Agantuja Shotha* as described in *Sushruta Samhita (Sutra Sthana, 17th chapter)*.^[6] *Agantuja Shotha* arises from direct trauma (*Abhigata*), and involves a *Tridoshaja* pathogenesis with predominant vitiation of *Vata* and *Rakta*. As per *Sushruta Samhita Sutra Sthana (18th chapter)*, *Alepa* (medicated paste application) constitutes the primary *Upakrama* (therapeutic measure) for *Sarva Shotha* (all types of swelling).^[7]

The *Nyagrodhadi Lepa*, as referenced in *Yogaratanakara Shotha Chikitsa*, is specifically formulated to address inflammatory swelling. The constituent drugs of the *Panchavalakala* group (*Nyagrodha*, *Udumbara*, *Ashwattha*, *Plaksha*, and *Madhuka*) collectively possess *Kashaya Rasa* (astringent taste) and *Sheeta Veerya* (cold potency), which exert potent *Shothahara* (anti-inflammatory) and *Vedanashamaka* (analgesic) effects. The *Kashaya* property promotes *Stambhana* (tissue constriction), thereby reducing oedema and tissue exudation, while *Sheeta Veerya* counteracts the *Ushna* and *Daha* (burning sensation) associated with acute inflammation.

When applied topically in *Pratiloma Gati*, the active phytoconstituents penetrate through *Romakupa* (hair follicles) and are subsequently absorbed via *Swedavaha Srotas* (sweat glands) and *Siramukha* (venular openings). These substances then undergo metabolic transformation by *Bhrajakapitta* residing in *Twacha* (skin), resulting in local pacification of vitiated *Doshas* and alleviation of associated symptoms such as pain, swelling, and tenderness.^[8] *Bandhana* (bandaging) provides additional mechanical support, prevents further ligamentous stress, and aids in oedema reduction through sustained compression.

CONCLUSION

The present case study demonstrates that *Nyagrodhadi Lepa* followed by *Bandhana* constitutes an effective, safe, and economically accessible therapeutic intervention for the management of ankle sprain (*Gulpha Sandhija Agantuja Shotha*). The drugs employed are readily available in Ayurvedic pharmacy, feasible for administration at the outpatient level, and are devoid of reported adverse effects. The treatment addresses the fundamental Ayurvedic pathophysiology of *Agantuja Shotha* by pacifying vitiated *Vata* and *Pitta Doshas* and promoting tissue healing. These encouraging findings support the potential applicability of this regimen not only in ankle sprains but also in other musculoskeletal injuries arising from trauma. Rigorous multi-centre clinical trials with larger sample sizes are warranted to validate these observations and establish evidence-based protocols for Ayurvedic sports injury management.

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