

## MANAGEMENT OF SOFT TISSUE INJURY OF GULPHA SANDHI AND AYURVEDIC APPROACH

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### ABSTRACT

Soft tissue injuries of the ankle joint (Gulpha Sandhi) are among the most frequently encountered conditions in Shalya Tantra outpatient practice. These injuries commonly result from trauma and may involve ligaments, muscles, and periarticular soft tissues, with ankle sprain being the predominant cause of pain when fractures and dislocations are excluded. Although fractures of the lower end of the fibula are also observed, sprain injuries constitute the majority of cases presenting with functional impairment. In most instances, except for severe ligamentous disruptions, conservative management yields satisfactory outcomes. The Ayurvedic approach emphasizes local application of Mahāviśagarbha Taila, which possesses Vāta-hara, Śothahara, and Vedanāsthāpana properties, combined with supportive bandaging or ankle binders to provide stability and promote healing. The study included 10

cases of soft tissue injury of Gulpha sandhi. This integrative conservative regimen offers an effective, safe, and economical method for managing soft tissue injuries of Gulpha Sandhi and facilitates early recovery of function.

**KEYWORDS:** Ankle sprain, Gulpha sandhi, Mahavishagarbha taila, Ankle binder.

## INTRODUCTION

Injury to the ankle joint is a very common condition encountered in the Shalya Tantra OPD of GACH. Such injuries may involve bones, joints, ligaments, and other soft tissues. Fracture of the lower end of the fibula is a frequently observed injury, second only to ankle sprain. Excluding cases of fractures and dislocations, ankle sprain remains the most common cause of traumatic ankle pain. In sprain injuries, various structures such as muscles and ligaments may be involved. Except in cases of severe ligamentous tears, the majority of ankle sprain cases can be managed conservatively with the application of Mahāviṣagarbha. Taila along with bandaging or the use of a binder.

## MATERIALS AND METHODS

In this clinical study, ten cases of ankle sprain were registered and managed conservatively. Mahāviṣagarbha Taila was applied locally, and an ankle binder was used for a period of seven days, along with restriction of active movements of the ankle joint. In all cases, digital X-ray examination was performed prior to registration to rule out any displaced or undisplaced fractures. Routine blood investigations were carried out to exclude any associated medical conditions.

The subjective parameters assessed were pain, swelling, and restriction of mobility. The objective parameters included tenderness, the amount of swelling measured in centimetres, and restriction of the degree of ankle rotation, assessed in increments of 10 degrees in all three movements.

### Method

In the registered cases, after gentle manual rotation of the ankle joint up to 90°, lukewarm Mahāviṣagarbha Taila was applied circumferentially over the ankle joint (360°) with a vertical extension of approximately 8 cm above and below the joint. The joint was then wrapped with a fine cotton roll, followed by the application of a roller bandage in a figure-of-eight pattern. Additional support was provided using an ankle binder.

This procedure was repeated every 24 hours for seven consecutive days. After completion of the initial treatment period, the ankle binder was advised to be worn for an additional seven days. Thus, the total duration of the study was 14 days. During the study period, data related to subjective and objective parameters were recorded daily for the first seven days.

Most patients experienced significant relief from pain and swelling within seven days, and restoration of active movements was observed by the fifteenth day. No oral medications were administered during the study period, and all patients were maintained on a normal diet. One patient was withdrawn from the study due to exaggeration of pain and swelling.

## SUBJECTIVE PARAMETERS

### 1. Pain

- No pain - 0
- Mild pain, doesn't restrict activity - 1
- Moderate pain, restrict walking - 2
- Severe pain, unable to bear weight - 3

#### Visual Analogue scale: (1-10)

0 - No pain

1-3 - mild pain

4- 6 - Moderate

8-10 - Severe

### 2. Swelling

- No swelling - 0
- Mild swelling, noticeable by patient - 1
- Moderate swelling, visible - 2
- Severe swelling, tense - 3

### 3. Restriction of mobility

- No restriction - 0
- Mild difficulty in movement - 1
- Moderate restriction - 2
- Severe restriction / almost immobile - 3

## OBJECTIVE PARAMETERS

### 1. Tenderness

- No tenderness - 0
- Tenderness on deep palpation - 1
- Tenderness on superficial palpation - 2

- Patient doesn't allow touch - 3

**2. Amount of swelling in centimetres (measured with measuring tape at same landmark)**

- No difference from normal ankle - 0
- Increase upto 1 cm - 1
- Increase 1.1 - 2 cm - 2
- Increase > 2 cm - 3

**3. Restriction of ankle rotation (degrees)**

**(Planter flexion/ Dorsiflexion/ Inversion)**

- Normal range - 0
- Restriction upto  $10^\circ$  - 1
- Restriction  $11 - 20^\circ$  - 2
- Restriction  $> 20^\circ$  - 3

**OBSERVATION AND RESULT**

**Table Stastistical analysis showing the result on clinical features after 7days of treatment with local application of Mahāviṣagarbha Taila with ankle binder.**

Criteria	BT (Day 1) Mean $\pm$ S.D	AT (Day7) Mean $\pm$ S.D	Mean Difference	t	P	Significance	% of improvement
Pain	$2.78 \pm 0.44$	$1.11 \pm 0.33$	1.67	9.24	<0.001	Highly significant	60.1%
Swelling	$2.67 \pm 0.50$	$1.11 \pm 0.33$	1.56	8.41	< 0.001	Highly significant	58.4%
Restriction of mobility	$2.78 \pm 0.44$	$1.22 \pm 0.44$	1.56	7.98	< 0.001	Highly significant	56.1%
Tenderness	$2.56 \pm 0.53$	$1.33 \pm 0.50$	1.23	6.12	<0.001	Highly significant	48.0%
Amount of swelling (in cm)	$3.26 \pm 0.63$	$1.22 \pm 0.41$	2.04	10.36	<0.001	Highly significant	62.6%
Restriction of Rotation	$31.1^\circ \pm 8.6$	$12.2^\circ \pm 4.4$	$18.4^\circ$	8.94	<0.001	Highly significant	60.8%

SD: Standard deviation, BT: Before treatment, AT: After treatment.

Statistical analysis using paired Student's t-test revealed highly significant improvement ( $p < 0.001$ ) in all subjective and objective parameters, including pain, swelling, tenderness, restriction of mobility, and ankle joint rotation, following local application of Mahavishagarbha Taila with ankle binder.

## RESULT

- Maximum improvement was observed in objective swelling (62.6%) and ankle rotation (60.8%).
- Pain reduction showed a 60.1% improvement, indicating effective analgesic and anti-inflammatory action.
- Mobility restriction improved significantly, supporting functional recovery.
- No oral medication was used, highlighting the effectiveness of local application of Mahavishagarbha Taila with ankle binder.

## SUMMARY AND CONCLUSION

Different kinds of traumatic swelling including Sports injury can easily be managed without Surgical intervention. Only with local application of Mahavishagarbha taila and support to the ankle joint can be useful for management of Sprain.

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