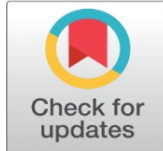
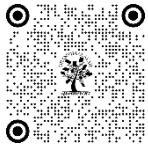


A REVIEW ARTICLE ON GULPHA SANDHI W.S.R TO ANKLE INJURY

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ABSTRACT

The purpose and goals of this essay are to elucidate the many ways that Ayurvedic principles related to gulpha are articulated. The term gulpha is defined as gulpha sandhi in sandhi shareera, as a gulpha marma in marma shareera, and as one of the asthi sanghata and a place of jaala in shareera. Due to the rising number of locomotives and the frantic lifestyle of today, traffic accidents are prevalent and are becoming more deadly and serious.

Keywords: Gulphasandhi, Gulphamarma, Ankle Injury

1. INTRODUCTION

Because it connects the mobile foot to the stable leg bone, foot injuries are more common. One may even lose their employment as a result of the morbidity that causes different difficulties. Road accidents, sports, and mechanical and physical force are causing a variety of injuries and symptoms, including excruciating pain, limited joint movement, and lameness. Joint damage results in excessive edema, inflammation, debility, breaking pain, and ultimately loss of joint function (Su.Su.25/38). *Gupha* injury results in tendon, ligament, and bone injuries; of these three, ligament injury is the most common.

Gulpha as a sandhi:

Synonyms : *Padagranthi, guthika, charanagranthi, ghuntakaha, khudaka, khallakaha.*

The lower limb's *gulphasandhi*, also known as *korasandhi* structurally and *bahuchalasandhi* functionally, is in charge of the body's many motions, including walking, standing, running, climbing, and so on. One of the sturdy joints, it supports half of the body weight when moving around in daily life. *Gulpha* is located where the foot and leg meet. It serves as the link between the mobile foot and the stable leg bones, enabling a range of motions. The interphalangeal elbow, wrist, and knee joints are known as *korasandhi*. The bones' articular region appears to be rather convex and concave. The bone,

called *korasandhi*, has a smooth, concave external appearance. When more than two articular bones are present, the ankle joint is a complex joint. The inferior transverse tibiofibular ligament, the lateral malleolus of the fibula, and its medial malleolus interact with the lower end of the tibia to provide a deep socket for the talus body. The structure of the ankle joint is a hinge type of uniaxial compound synovial joint. The joint has a very sturdy structure. Close interlocking of the articular surface, strong collateral ligaments on the sides, and crossing tendons—four in front and five behind—that are extended into the foot past the transverse tarsal joint all contribute to stability. The joint is supported by a fibrous capsule made up of lateral and deltoid (medial) ligaments. With the exception of the posterior superior and anterior inferior regions, the fibrous capsule encloses the joint and is connected to the articular edge on all sides. The capsule is thin and loose in the anterior and posterior regions to permit hinge movements, although it is supported by a strong collateral ligament on each side. On the medial side of the ankle, the deltoid or medial ligament is a very strong triangle ligament with both superficial and deep portions. Above the medial malleolus' apex, both sections are attached. The tibionavicular ligament, the middle tibiocalcaneal ligament, and the posterior tibiotalar ligament make up the superficial portion. There is only one ligament in the deep region, the anterior tibiotalar ligament. The anterior talofibular ligament, posterior talofibular ligament, and calcaneofibular ligament are the three bands that make up lateral ligaments.

Gulpha as asthi sanghata: Joints are created when two or more bones articulate. *Guphapradesha* contains a joint region that may be referred to as *asthisanghata*, which forms the body's complex joints in one piece. (Su.Sha 5/16).

2. INJURY OF THE ANKLE JOINT

Ankle stability is dependent on ligaments, which provide as extra supports for the joint, in addition to the joint's bony structure. The ankle joint is connected to the subtalar joint by ligaments on the medial and lateral sides of the ankle.

Ankle injuries: Ankle joint bones are often the site of injuries. Fractures and fractures with dislocation are caused by the wide range of bending and twisting force; these injuries are all classified as potts fractures. Strong and secure ankle articulation is made possible by the medial and lateral malleoli, as well as the robust tibiofibular syndesmosis. As a result, ankle dislocation is uncommon and typically only happens in conjunction with malleolar fractures. The lateral collateral ligament is prone to injury and is weak. Adduction injuries, abduction injuries, pronation external rotation injuries, supination external rotation injuries, and vertical compression injuries are the five fundamental mechanisms used to categorize ankle injuries.

Adduction injuries: Ankle lateral ligament sprains are caused by inversion force when the foot is in plantar flexion. It could rupture completely or partially. A partial rupture only affects the lateral ligament's anterior fasciculus; a complete rupture involves the entire lateral ligament complex. A fracture of the medial malleolus, a fracture of the lateral malleolus, or a rupture of the lateral ligament are caused by the inversion force applied to the ankle when it is in a neutral or dorsiflexed position.

Pronation: Injury from external rotation the talus also rotates outward along its vertical axis when the pronated foot rotates externally. A fracture of the fibula above the ankle mortise is a sign that the tibia-fibular syndesmosis has been disrupted.

Supination: The talus twists externally with the mortise when the foot is supinated, causing external rotation injuries. Because of the laxity of the medial tissues, the lateral side structures give way first. The head of the talus strikes the lateral malleolus, causing a spiral fracture at the level of the ankle mortise; in severe cases, the entire foot and all three malleoli are displaced.

Vertical compression injuries: A component of vertical compression force may cause any of the aforementioned injuries to become more complicated. A vertical injury that causes either a commuted fracture of the tibial articular surface with a fracture of the fibula pilon fracture or an anterior marginal fracture of the tibia.

Clinical features: Pain and edema follow a history of ankle joint twisting injuries. The ankle is examined and found to be swollen. The injured site (bone or ligament) may be the only location where there is swelling and soreness. If an ankle fracture results in deformity, crepitus may be observed.

Sprained ankle: The lateral-collateral ligament is frequently sprained as a result of ankle ligament damage. The ankle's medial collateral ligaments may sprain as a result of this eversion stress.

3. DISCUSSION

The *sandhi marma*, *asthi sanghata* and *jaalas* in Ayurveda describe the idea of *gulpha*. RTA generates a number of complications in today's lifestyle, including physical and mechanical traumas, traffic accidents, sports injuries, excruciating pain, and limited joint mobility, which can even result in unemployment. Joint injuries result in increased swelling, inflammation, excruciating pain, and decreased joint function. *Gulpha* injuries result from the joint between the movable foot and leg bones. Bone and ligament injury results from abnormal stresses. Major ankle injuries are frequently caused by sports.

Gulpha sandhi: This lower limb *sandhi* supports 50% of the body weight while moving and aids in a variety of activities. Its location at the foot-leg junction permits movement; it is kora structurally and *bahuchala* functionally. Another name for it is *Kallkorasandhi*. This involves more than two articular bones. The tibiofibular ligaments and medial and lateral malleoli form a deep socket for the talus's body. As a result, the articular surfaces interlock to create a robust and stable joint.

Gulpha as asthi sanghata: *Asthisanghata* is the union of more than two bones. This is where the tibia's lower end, medial malleolus, lateral malleolus of the fibula, and talus body articulate. The seven tarsal bones that make up the tarsus are positioned in two rows.

For support and weight distribution, these bones are bigger and more robust.

Gulphamarma : It is lower limb *sandhimarma* located at the foot-leg connection. The underlying structures involved are the tibia, fibula, and calcaneum bones, as well as the muscles known as the flexor hallucis longus, flexor hallucis brevis, tibialis posterior, and others, as well as the post-tibial artery and vein. It is two *anguli* in *Pramana*, *vaikalyakara* in nature. Damage to this *marma* results in discomfort, numbness, swelling, and decreased function. Lastly, the stability of the *gulpha* is dependent on the surrounding ligaments, which provide it with extra support, in addition to the bony structure.

4. CONCLUSION

Gulpha is a location where *Asthis* meets. According to established anatomy, joints can sustain injuries that result in functional disturbances including pain, stiffness, or incapacity. Ligament and bone damage from *gulpha* injuries will result in disability. Disability resulted by ligament damage. Ankle dislocations or fractures typically happen during sports, auto accidents, avertition, etc. Additionally, wearing high heels can injure soft tissues including the medial and lateral ligaments, nerves, and blood vessels, which can lead to incapacity. We may conclude that *Gupha* is a *sandhi*, *sanghata*, *jaala*, and *marma* based on the review and debate above. It is therefore susceptible.

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CONFLICT OF INTEREST

None.

REFERENCES

- Sushruta yadavji trikamjiacharya, editor Susrutasamhita with nibandhassamgraha of dalhana acharya. 8th edition varanasi: choukambaorientalia, 2008
- Bhavamishra; bhavaprakasha; with vidyothini hindi tika by bhisha kranta shri bhramhashankara shastri and sri roopalal vaishya, vol 2, 8th edition 1997: chaukhamba Sanskrit bhavan, Varanasi, uttarpradesh.
- Bd Chaurasia's Human Anatomy 9th Ed, 2nd Volume (PB - 2023) [Paperback] B.D. Chaurasia and Krishna Garg.