



A Review of Gulpha Marma and its Applied Future Prospects

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ABSTRACT

The region of Gulpha Marma different anatomical structures; one important anatomical structure present here is the tibial nerve (posterior tibial nerve). Percutaneous stimulation of the tibial nerve is used in modern therapeutics for neuromodulation in various complaints of pelvic pain and urinary incontinence. In Gulpha marma therapy, there is possible stimulation of the posterior tibial nerve by the applied pressure, which may then carry out neuromodulation of pain. This is just an idea of how Gulpha marma therapy might work, and extensive research is needed to be carried out to evaluate its effect and possible pathway.

KEYWORDS: Gulpha marma, Gulpha Marma therapy.

1. INTRODUCTION

Ayurvedic literature describes Gulpha as a *sandhi* (joint) situated in bilateral lower limbs along the junction of the *paada* (foot) and *jangha* (legs). In modern literature, the related joint in the human body is the ankle joint. *Gulpha* term is derived from "Gal" dhatu and "Fuk" prataya (affix), and synonyms include *Khulaka*, *Khudaka*, *Khallaka*, and *Kuduka*. It is classified under "*koresandhi*" in Ayurveda. Gulpha has been referred to as a *marma* as well as a *sandhi* or joint. Ayurvedic life science has given this anatomical area special importance, which is why it is included in *Marma sharir*.

OBJECTIVES

To study *Gulpha Marma* in light of Ayurveda and modern texts and to explore the applied future prospects of it.

2. MATERIALS AND METHODS

A review of Ayurvedic and modern literature on *Gulpha sandhi* (joint) and *Gulpha marma* was conducted, and an attempt was made to shed light on *Gulpha Marma* therapy.

3. REVIEW OF LITERATURE

Gross Anatomical aspects of Gulpha or Ankle joint

It is present in our both lower extremities and is formed by lower ends of leg bones (Tibia and Fibula)

with upper end of the Talus. It is a kind of compound Synovial (Hinge) joint. The articular capsule of this joint is weak anteriorly and posteriorly but is supported by strong medial and lateral ligaments on medial and lateral side. The medial collateral ligament is also known as the deltoid ligament has three parts- the anterior fibres known as Tibionavicular ligament, middle fibres known as Tibiocalcaean ligament and posterior fibres known as Tibiotalar ligament. Tibiotalar ligament has further posterior and anterior part. Lateral collateral ligament has also three parts- anterior talofibular ligament, posterior talofibular ligament and calcaneofibular ligament. Anteriorly relations of ankle joint from medial to lateral are Tibialis anterior, Extensor hallucis longus, Anterior tibial vessels, Deep peroneal nerve, Extensor digitorum longus and Peroneus tertius. Posterior relations from medial to lateral are Tibialis posterior, Flexor digitorum longus, posterior tibial vessels, tibial nerve and flexor hallucis longus. Medial to the joint are the Deltoid ligament, Tibial posterior and Flexor digitorum longus. Lateral to the joint are calcaneofibular ligament (part of lateral collateral ligament), Peroneus longus and Peroneus Brevis. Blood supply of ankle joint are from malleolar branches of the anterior and posterior tibial and the peroneal arteries. Nerve supply are from tibial and deep peroneal arteries. Movements of the ankle joint are Planter-flexion and Dorsi-flexion.^[1]

Ayurveda Concepts about Gulpha Marma

There are 107 Marma points named in the Susruta Samhita. Marma has been defined as vital or important anatomical sites on the body that must be safeguarded against trauma or injury. Injuries to these points can prove lethal or cause permanent disability.^[2] *Gulpha marma* is counted as two in each lower limb (*sakha*), and anatomically it has been put under the *sandhi marma* type. Functionally, on the basis of traumatic results, it has been classified as the *Rujakar* type. The *praman*, or measure, of *Gulpha marma* has been described as 2 *angulas*. And traumas up to this point cause *ruja* (pain), *stabhapaadata* (paresis), and *khanjata* (function loss or limpness). (Table 1)

Table 1- Gulpha Marma features

Number	Location	Type on the basis of anatomy	Type on the basis of traumatic results	Measure (Angulapraman)	Traumatic or injury symptoms
2	Ankle	<i>Sandhi</i>	<i>Rujakar</i>	2	<i>Ruja</i> (pain), <i>Stabhapaadata</i> (paresis) and <i>Khanjata</i> (loss of functions / limpness)

4. DISCUSSION

Marmas are said to be the site of prana, or vitality, in Ayurveda; this makes them very important in terms of physiological aspects other than only anatomically. Practitioners of Ayurveda have used these points or areas for therapeutic purposes by applying controlled manual pressure to them. These pressure manipulations over these areas are being used in various kinds of diseases and have been called "*Marma therapy*".^[3] Different *marma* serve different purposes, and many trials are going on to determine their therapeutic effects. *Gulpha marma* therapy is said to be beneficial in conditions such as low back pain, urinary complaints, menstrual complaints, and so on.^[4] For *Gulpha Marma* therapy, first the patient is instructed to sit straight or to lie in the supine position. If the patient is sitting straight, then the side of the limb that is to be given therapy is positioned in such a way that the lateral aspect of the leg whose *marma* point is to be pressed lies on the anterior side of the thigh of the other side. After proper positioning, the patient is instructed to calm down and relax. The therapist then positions himself or herself and administers therapy with the opposite hand, that is, for the patient's right leg, the therapist administers therapy with the left hand, and vice versa. The point posterior and slightly inferior to the medial malleolus is grasped by the lateral aspect of the index finger by the therapist in such a way that the thumb lies on the lateral malleolus. Following proper positioning and explanation to the patient, the therapist applies pulsatile pressure to the *Gulpha marma* point with his or her positioned index finger in sync with breathing for 10-15 times. This pulsatile pressing of the *Gulpha marma* can be repeated twice or three times a day, depending on the patient's condition. The therapist determines the

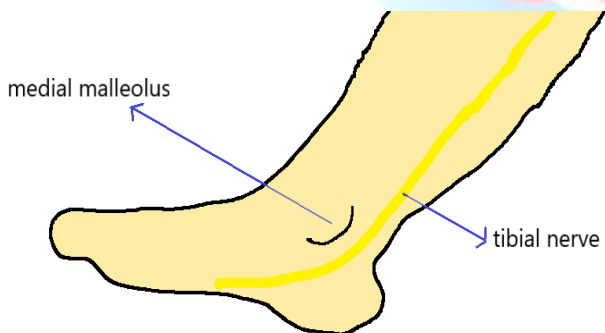
amount of pressure to be applied by observing the patient's facial expressions. During the whole procedure, the patient is verbally consoled and asked about any extra discomfort or complaints. The above procedure is typically used to administer *Gulpha Marma* therapy. Although documentary evidence is very limited, some studies, like a study on basketball players, have shown good results of *Gulpha marma* therapy in ankle sprains.^[5] (Figure 1)

Figure 1- Gulpha marma and Gulpha marma therapy



The *Gulpha Marma* region has different anatomical structures; one important anatomical structure present here is the tibial nerve (posterior tibial nerve). (Figure 2)

Figure 2- Showing positioning of posterior tibial nerve in relation to medial malleolus



Modern therapeutics use percutaneous stimulation of the tibial nerve for neuromodulation in various complaints of pelvic pain and urinary incontinence. This has been shown in studies to help with overactive or neurogenic bladders and faecal incontinence.^{[6],[7],[8]} Peripheral neuromodulation is gaining popularity in the management of pain in modern therapeutics.^{[9],[10]} Although the concept and technique of *marma* therapy are very different from this peripheral percutaneous stimulation, the presence of the posterior tibial nerve in this area gives us some possible explanations for the pathway of pain suppression by it. The difference is that

in *marma* therapy, there is no invasion of the skin, and all the pressure is applied above the area by the therapist. In *Gulpha marma* therapy, there is possible stimulation of the posterior tibial nerve by the applied pressure, which may then carry out neuromodulation of pain. This is just one idea of how *Gulphamarma* therapy might work, and extensive research is needed to be carried out to evaluate its effect and possible pathway.

5. CONCLUSION

As per Ayurveda, *Gulpha marma* is an important anatomical and physiological area in the lower limb. *Gulpha marma* therapy is becoming increasingly popular among Ayurvedic practitioners, and it is said to be effective in treating low back pain and other types of pelvic complaints. To evaluate the effects of *Gulpha marma* therapy in various conditions, large-scale randomised active-controlled trials are required.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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