



## ANATOMICAL UNDERSTANDING OF PADAGATA KOORCHASHIRA MARMA IN AYURVEDA

**Dr. Raviraj S Kurabet<sup>1</sup>, Dr. Bhagavan G Kulkarni<sup>2</sup>**

<sup>1</sup> Ph D Scholar, Parul Institute of Ayurveda and Research, Parul University, Vadodara, Gujarat and Associate Professor, Department of Shareera Rachana, KLE Ayurveda College Chikodi, Karnataka.

<sup>2</sup> Professor and Head, Department of RachanaShareera, Parul Institute of Ayurveda and Research, Parul University, Vadodara, Gujarat.

[drravirajsk@gmail.com](mailto:drravirajsk@gmail.com)

### **ABSTRACT:**

Ayurveda the science of life deals with maintaining health of an individual not only physical but also mental and spiritual. This requires a modern knowledge to establish its potency through extensive research. Shareera Rachana is the branch of Ayurveda which deals with anatomical structures the body. Various terminologies are the main source of acquaintance of this branch.

In Ayurveda vital spots are explained in the name of Marma which is most widely described and at the same time one of the most debated topic in Brahatrayees. Acharyas have mentioned the total number of Marmas as 107.

Acharya Sushruta has classified Marma based on location and also based on involvement of Marma Vastu. Padagata Koorchashira Marma is classified under Shakhagata Snayu Marma.

Although the gross location and Viddha Lakshanas are available in Samhitas, but detail description of particular structures present in Padagata Koorchashira Marma region are lacking in ancient texts.

This study is to make the comprehensive and conceptual study on Padagata Koorchashira Marma as mentioned in texts, in the view of applied and regional anatomy described in the contemporary science with the help of cadaver dissection.

Applied anatomy provides knowledge of practical application of anatomical knowledge for diagnosis and treatment. Thus, the complete knowledge of Padagata Koorchashira Marma is very much essential to become a good physician and surgeon.

**Keywords:** Koorchashira, Shakhagata

### **INTRODUCTION:**

Ayurveda the science of life deals with maintaining health of an individual not only physical but also mental and spiritual. It describes human body by dividing it into six parts called Shadanga. Even though all the parts of body are significant, there are vital spots called Marma.

There is a vital force which is driving the life of mankind which is called Prana. Marma is considered as the point where there is conglomeration of five human basic structures like Mamsa, Sira, Snayu, Asthi and Sandhi<sup>1</sup>. These specific locations are explained under the concept of Marma Shareera in classics.

The injury to Marma leads to termination of life or disabilities. Thus from surgical point of view knowledge of Marma is important. Vaidya in olden times had to deal with more emergencies during

the time of war and it might have been the reason why Marma was given at most importance in our Samhitas. Description of 107 Marmas given by all Acharyas being classified into five varieties on basis of involved structures, five on basis of effect of injury and five on basis of location in the body. PadagataKoorchsira Marma under the classification on basis of involved structures, this is PadagataSnayu Marma.

### **CLASSIFICATION OF MARMA**

All the 107 Marmas<sup>2</sup> are classified into five different groups

1. Rachanusara (Structural classification)
2. Shadangabhedena/Avayavabhedena (Regional classification)
3. Parinamabhedena (Prognostic classification/Traumatological classification)
4. Maanabhedena (Dimensional classification)
5. Sankhyabhedena (Numerical classification)

### **STRUCTURAL CLASSIFICATION**

According to Sushruta, Marma Vasthus are Mamsa, Sira, Snayu, Asthi and Sandhi. He classified Marmas according to the predominance of structures present in that area such as MamsaMarma, SiraMarma, SnayuMarma, AsthiMarma and SandhiMarma. He also said that apart from these 5 types no other types are found<sup>3</sup>.

Sushruta classified Marma into five types. They are 11 MamsaMarma, 41 SiraMarma, 27 SnayuMarma, 8 AsthiMarma and 20 SandhiMarma.

### **KURCHASHIRA MARMA**

It is defined as the Shira of Kurcha<sup>4</sup>

#### **Location:**

KurchashiraMarma is present below the GulphaSandhi on both sides<sup>5</sup>

#### **Classification:**

Stananusara :AdhoShakha

Rachananusara :SnayuMarma

Pramananusara : one Angula<sup>6</sup>

Parinamanusara :Rujakara<sup>7,8</sup>

Sankyanusar :2

#### **ViddhaLakshana:**

InjurytokurchashiraMarma leads to Ruja and Shopha<sup>9</sup>.

Term Ruja means pain and Shopha means swelling.

### **OBSERVATIONS:**

Dissection of lower limbs of 5cadavers was done in the region of AdhoShakhagataSnayuMarma in

the dissection hall of Government Ayurveda Medical College Bangalore. The following observations were made during the dissection.

### **Kurchashira Marma:**

#### **Dorsal Aspect**

**From superficial to deep:** Skin, Superficial fascia of the dorsum of the foot was dissected. In front of the ankle the deep fascia forms thickened band known as the inferior extensor retinaculum.

Inferior extensor retinaculum: is like Y-shaped band and its stem is attached to upper surface of anterior part of the calcaneus and it lies medial to extensor digitorum brevis. The upper band was passing medially and upwards for its insertion, whereas the lower band was observed as medially and downwards.

#### **Structures below the retinacula (medial to lateral):**

The tendons of: Tibialis anterior, extensor hallucis longus, extensor digitorum longus, peroneus tertius. Dorsalis pedis artery- Was identified exactly in between two malleoli on the dorsum of foot. Superficially the extensor hallucis brevis was crossing the dorsalis pedis from medial to lateral side. On medial side extensor hallucis longus muscle was identified. Further it was passing forwards along the medial side of dorsum of foot.

Deep peroneal nerve- Identified in between two malleoli and it was crossed superficially by the extensor hallucis longus and it entered into the dorsum of the foot. Here it was located in between the extensor hallucis longus and extensor digitorum longus with the dorsalis pedis artery.

#### **Plantar Aspect**

**From superficial to deep:** Skin and superficial fascia in the region of heel was removed. Just below that pad of fat was observed. It was arranged in small tight compartments.

Apex of Plantar aponeurosis (modified deep fascia) - It was triangular in shape, having a thickened central part. The apex part was attached with medial tubercle of calcaneum, proximal to the attachment of flexor digitorum brevis.

Origin of flexor digitorum brevis- which originates from the medial tubercle of calcaneum and plantar aponeurosis, plantar surface of calcaneum was identified.

Origin of flexor digitorum accessories- after removing the origin of flexor digitorum brevis, flexor digitorum accessorius was identified. Its medial head was taking origin from the medial tubercle of calcaneum and lateral head which was more tendinous, took origin in front of the lateral tubercle of calcaneum and from the long plantar ligament.

**Dissection findings in PadagataKoorchashira Marma from Superficial to Deep:**

Fig 1: Location of PadagataKoorchashira Marma in dorsal aspect of foot.



Fig 2: Location of PadagataKoorchashira Marma in plantar aspect of foot.

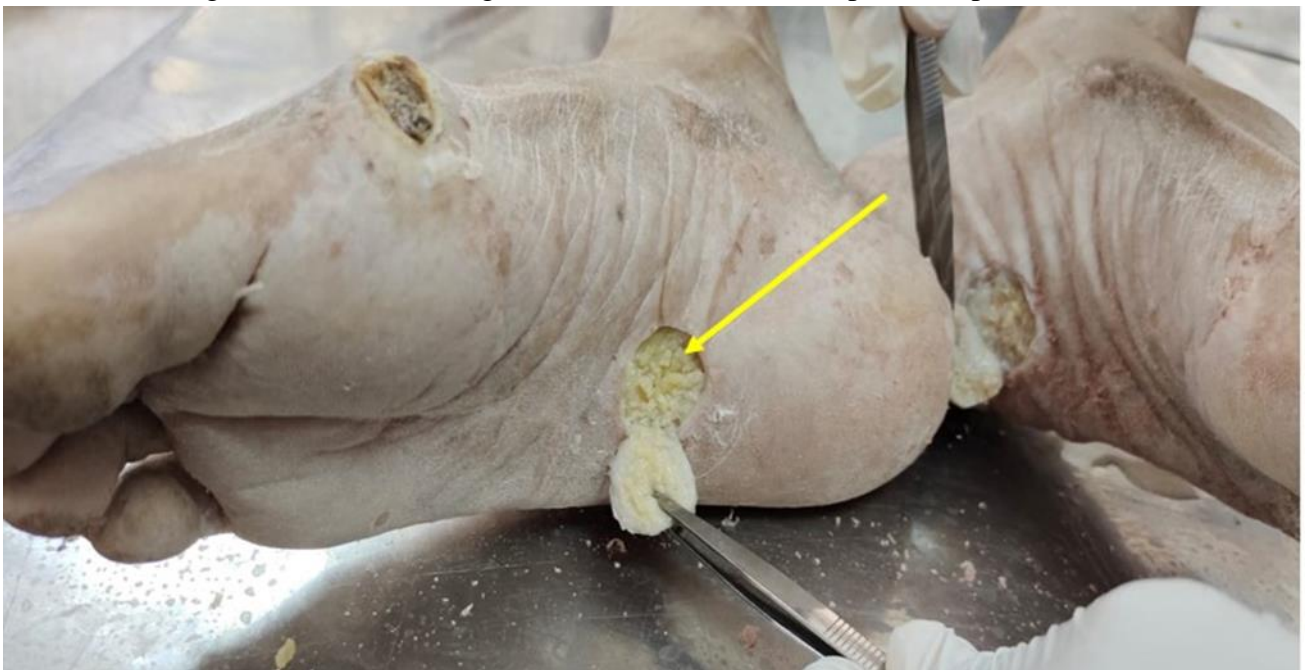




Fig 3: Structures found in PadagataKoorchashira Marma Pradesh in dorsal aspect of foot

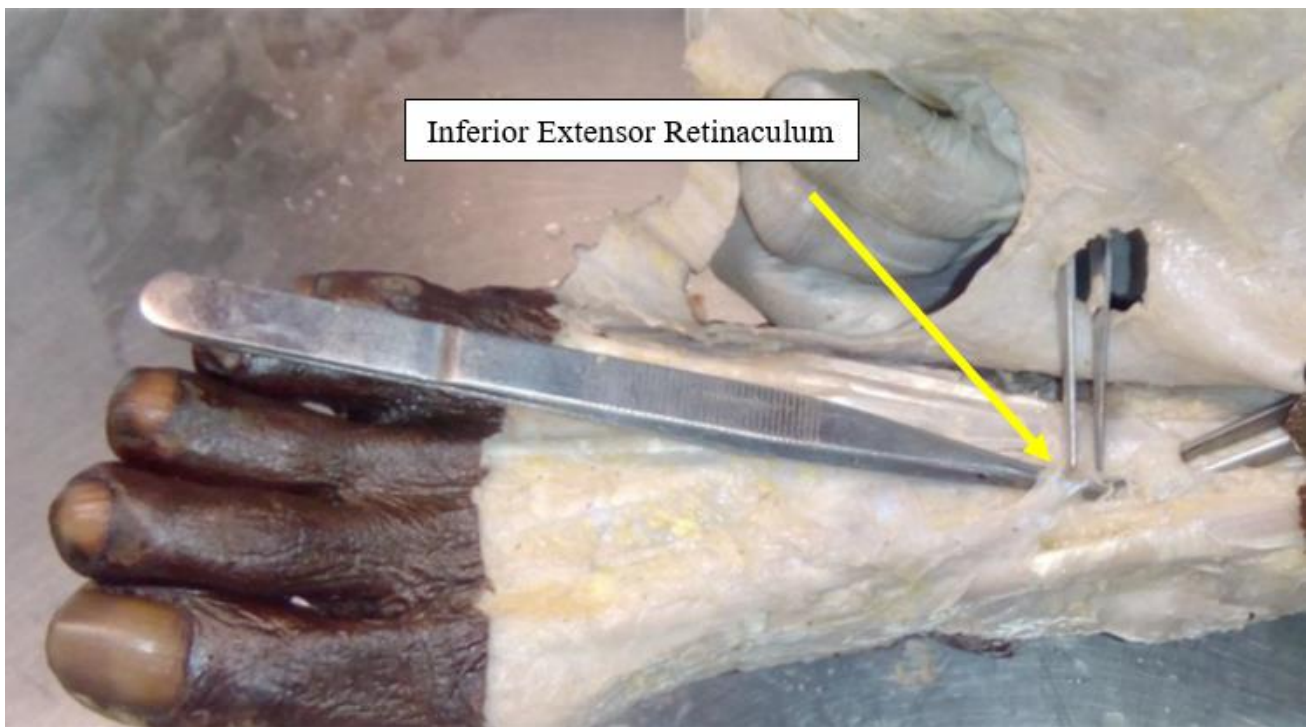


Fig 4: Structures found in PadagataKoorchashira Marma Pradesh in dorsal aspect of foot

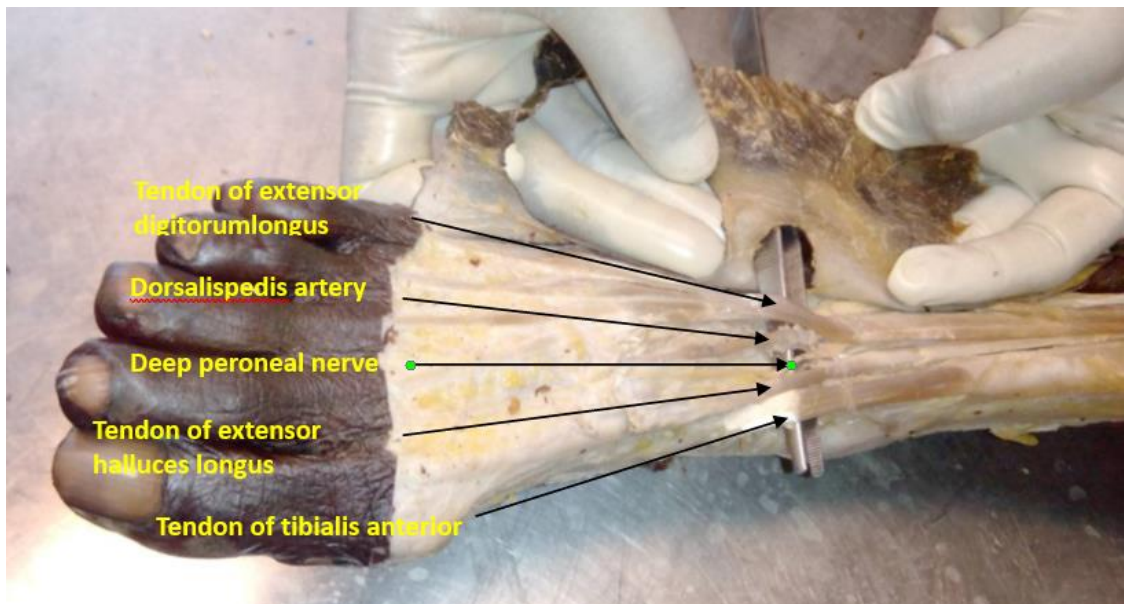


Fig 5: Structures found in PadagataKoorchashira Marma Pradesh in Plantar aspect of foot

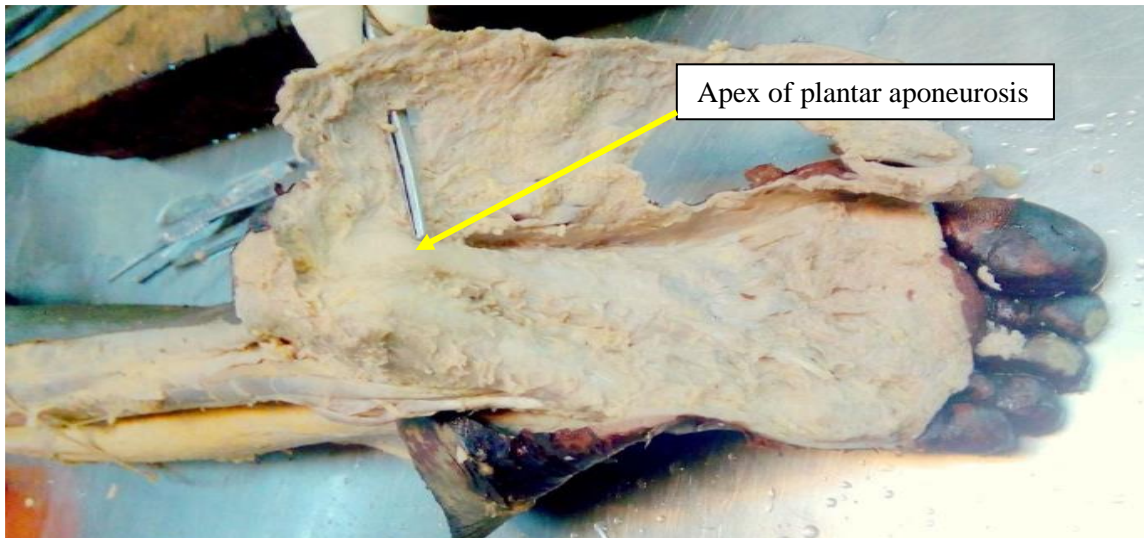


Fig 6: Bones of foot



## **DISCUSSION:**

### **Discussion on location:**

- The region of Marma is below and on both sides of GulphaSandhi.
- Here the region just below the ankle joint on the dorsal and plantar aspects can be taken.
- Dorsally, the region can be considered as in front of ankle joint where the Y shaped band of deep fascia is seen that is over the posterior part of the dorsum of the foot.
- In the plantar aspect, the region where the apex of plantar aponeurosis and attachment of flexor digitorumbrevis to the calcaneum bone can be considered.

### **Discussion on Marma Vasthu:**

- SnayuMarma Vasthu : Inferior extensor retinaculum, Tendons of tibialis anterior, Extensor hallucislongus, Extensor digitorumlongus, Peroniustertius, deep peroneal nerve, Apex of plantar aponeurosis since it is the modified deep fascia. As snayu is the binding material, plantar aponeurosis can be considered here.
- MamsaMarma Vasthu : Flexor digitorumbrevis, flexor digitorumaccessorius.
- SiraMarma Vasthu :Dorsalispedis artery, medial and lateral plantar areteries.
- AsthiMarma Vasthu : Talus, plantar surface of calcane
- Sandhimarmavasthu :Talocalcaneonavicular joint.

### **Discussion on Marma VidhaLakshanas:**

Injury to this Marma leads to Ruja and Sopha.The occurrence of pain and swelling in the Marma Pradesha may be due to the following reasons:

- When the tip of plantar aponeurosis gets infected it will cause severe pain and tenderness in front of calcaneal region.
- When hard fall into the heel, calcaneal fracture occurs because it disrupts the subtalar joint, where the talus articulates with the calcaneus and thus produces swelling and pain.
- Plantar fasciitis is associated with severe pain in the heel region and whole foot.
- The compression of tibial nerve will produces pain and numbness in heel.
- Calcaneal bursitis (retroachilles bursitis) results from inflammation of the deep bursa of the calcaneal tendon located between the calcaneal tendon and the superior part of the posterior surface of the calcaneus. It causes pain posterior to the heel and occurs quite commonly during long-distance running, basketball, and tennis. It is caused by excessive friction on the bursa as the tendon continuously slides over it.
- Fractures of the talar neck may occur during severe dorsiflexion of the ankle. In some cases, the body of the talus dislocates posteriorly. In these cases it can injure the tendons of tibialis anterior, flexor hallucislongus and can produce pain and swelling in that region.

Due to the above said reasons there will be occurrence of Ruja and Sopha in Marma Pradesha. Since pain is one of the main features of injury, it is classified under the category of RujakaraMarma.

### CONCLUSION:

Present work was been taken up with an idea of updating early concept of PadagataKoorchsiraMarma in view of modern applied and regional anatomy. Applied anatomy provides knowledge of practical application of anatomical knowledge for diagnosis and treatment. Though the description and ViddhaLakshanas of these Marmas are available in Samhitas, the structures like muscles, ligaments, tendons, arteries, veins, nerve etc present in these regions, their anatomical description and their applied aspects needs more clarification.

So a humble effort is made for the better understanding of PadagataKoorchsiraMarmaand their Viddhalakshana in this study. Regional anatomy is studied with the help of cadaver dissection and their applied anatomy is listed based on clinical anatomy.

### BIBLIOGRAPHY

- 01 Sushruta. YadavjiTrikamji Acharya, editor. SushrutaSamhita with NibandhaSangraha of Dalhanacharya. 8thed. Varanasi: ChaukhambhaOrientalia; 2008. Pp.824, p.371.
02. Sushruta. YadavjiTrikamji Acharya, editor. SushrutaSamhita with NibandhaSangraha of Dalhanacharya. 8 thed. Varanasi: ChaukhambhaOrientalia; 2008. Pp.824, p.369
03. Sushruta. YadavjiTrikamji Acharya, editor. SushrutaSamhita with NibandhaSangraha of Dalhanacharya. 8thed. Varanasi: ChaukhambhaOrientalia; 2008. Pp.824, p.369.
04. Williams M. A, Sanskrit- English Dictionary, Reprint, 2005, New Delhi: BharatiyaGranthNiketan; pp: 1333. p.769
05. RadhakanthadevaBahadura, ShabdaKalpaDruma, reprint 1988, Part-2, Delhi, Nag Publishers; pp: 926, p.170
06. Sushruta. YadavjiTrikamji Acharya, editor. SushrutaSamhita with NibandhaSangraha of Dalhanacharya. 8thed. Varanasi: ChaukhambhaOrientalia; 2008. Pp.824, p.370.
07. Vagbhata. HarisadasivasastriParadakaraBhisagacarya, editor. AshtangaHrudayam with Sarvangasundara of Arunadatta&Ayurvedarasayana of Hemadri. Varanasi: ChaukhambhaOrientalia; 2005. Pp.956, p.415.
08. Sushruta. YadavjiTrikamji Acharya, editor. SushrutaSamhita with NibandhaSangraha of Dalhanacharya. 8thed. Varanasi: ChaukhambhaOrientalia; 2008. Pp.824, p.374.



09. Sushruta, SushrutaSamhita with the NibandhaSangraha commentary of Sri Dalhana Acharya, edited by Vaidya JaadvjiTrikamji Acharya, Chaukhambha Sanskrit Sansthana: Varanasi, 2010, Pp-824, p.372.