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## UNDERSTANDING ADHOSHAKHAGATA KURCHASIRA MARMA- A CONCEPTUAL EXPLORATION FROM MODERN AND SUSHRUTA'S PERSPECTIVES

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### ABSTRACT:

**Background:** *Marma Vigyan* is a crucial concept in *Ayurveda*, which identifies vital points (*Marmas*) in the human body where *Prana* (life force) resides. Injury to these points can cause immediate death, deformity, or intense pain. The concept of *Marma* is extensively documented in classical *Ayurvedic* texts, particularly in the *Sushruta Samhita*, which outlines 107 such points critical for surgery.

**Materials and Methods:** This review integrates literature from classical *Ayurvedic* texts, modern commentaries, and medical journals to ascertain the anatomical and clinical relevance of *Adhoshakhagata Kurchashira Marma*, a lower extremity *Marma* related to ligaments.

**Results:** *Adhoshakhagata Kurchashira Marma* corresponds to structures below the ankle joint, including various tendons and neurovascular components. Injury to this *Marma* causes pain and swelling due to the involvement of sensory nerves and vascular responses.

**Conclusion:** The study of *Adhoshakhagata Kurchashira Marma* reveals a rich intersection between *Ayurvedic* wisdom and modern anatomical science, providing valuable insights for both *Ayurvedic* and modern clinical practices.

**Keywords:** *Ayurveda*, *Marma Vigyan*, *Adhoshakhagata Kurchashira Marma*, *Snayu Marma*, *Prana*.

### INTRODUCTION:

*Marma Vigyan* is a vital concept in *Ayurveda*. *Marma points* are the vital points present in different parts of the human body where *Prana* resides. These points in the body are mainly made up of five elements: *Mamsa*, *Sira*, *Snayu*, *Asthi*, and *Sandhi*<sup>[1]</sup>. The vital points mentioned are so critical that any injury to them could result in immediate death, deformity, or intense pain. *Marma* are described in almost all *Ayurvedic* texts, especially in the *Shushruta Samhita*, in the *Prateyak Marma Nirdesh Sharir*, the *Trimarmiya Chikitsa* chapter of the *Charak Samhita*, the *Marma Vibhaga* chapter in the *Ashtang Sangrah*, and the *Sharir vichaya Sharir* chapter in the *Kashyapa samhita*.<sup>[2]</sup>

The concept of *Marma* is a great contribution of *Sushruta* in *Ayurved* and is treated as mirror of surgery as it has been mentioned about 107 vital points in various parts of the body, which should be carefully dealt during surgery & should always be protected from injury, as the component of life or vital energy 3 (*Prana*) preside in them.<sup>[3]</sup>

### CLASSIFICATION OF MARMA <sup>[4]</sup>

All the 107 *Marmas* are classified into five different groups

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

### 1. STRUCTURAL CLASSIFICATION<sup>[5]</sup>

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 *Mamsa Marma*, *Sira Marma*, *Snayu Marma*, *Asthi Marma* and *Sandhi Marma*. He also said that apart from these 5 types no other types are found.

### 2. REGIONAL CLASSIFICATION<sup>[6]</sup>

Among 107 *Marmas*, 44 *Marmas* are present in the *Sakthi* (11 in each extremities), 3 in *Koshta*, 9 in *Uras* (thorax), 14 in *Prushta* (back) and 37 *Jatroordhwapart* (head and neck).

### 3. PROGNOSTIC CLASSIFICATION<sup>[7]</sup>

Based on the prognosis of *Marmabhighata*, it is divided into five types by *Sushruta* and *Vagbhata*. They are *SadyoPranahara*, *KalantaraPranahara*, *Vishalyaghna*, *Vaikalyakara* and *Rujakara*.

### 4. DIMENSIONAL CLASSIFICATION<sup>[8]</sup>:

According to the dimension of *Marma*, it is divided into 5 types they are *Swa – panitala*, *Ardhangula*, *Ekangula*, *Dwayangula*, *Trayangula*. As per classical description *KurchaSira* is mentioned under *Shakhagat Marma* which are 4 in number which also comes under *Snayu Marma* according to structural consideration *Rujakara Marma* on the basis of effect of injury.

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## AIMS AND OBJECTIVES:

1. Assemble and document classical Ayurvedic texts pertaining to *Adhoshakhagata KoorchaSira Marma*, preserving its traditional insights and teachings.
2. Perform a detailed evaluation of the anatomical features linked to *Adhoshakhagata KoorchaSira Marma*, interpreting them through the lens of modern medical science.

## MATERIALS & METHODS:

### Conceptual Study:

Asserting the most appropriate position of *Adhoshakhagata Koorchshira Marma* based on data collected from various classical texts, *Ayurvedic* literature, modern period commentaries (1800 A.D. onwards), and medical journals.

### MARMA REVIEW:

#### *Adhoshakhagata Kurchashira Marma*

In Monier William's dictionary, "*Koorcha Marma*" is defined as a bunch of anything, such as a bundle of grass. *Kurchashira Marma* is also referred to as the "*Shira of Kurcha*" in *Shabdhalakpadruma*. Additionally, it is described as the upper part of the palm of the hand and foot in Monier William's dictionary. Although it is initially mentioned as being below the "*Gulpha Sandhi*," it is later clarified that the "*Manibandha Marma*" in the upper limb is homologous to the "*Gulpha Marma*" in the lower limb.<sup>[9]</sup>

"It is situated just below the *Manibandha Sandhi* according to *Vaghbhatta*."<sup>[10]</sup>

**Location:** *Adhoshakhagata Kurchashira Marma* is located below the *Gulpha Sandhi* on both sides<sup>[11]</sup>.

### Classification:

- *Stananusara: Adho Shakha*
- *Rachananusara: Snayu Marma*
- *Pramananusara: one Angula*
- *Parinamanusara: Rujakara*
- *Panchabautikatwa: Agneya and Vayavya*

An injury to the *Marma* will lead to *Sopha* and *Ruja* (pain and swelling).<sup>[12]</sup>

ANATOMICAL EXPLORATION OF ADHOSHAKHAGATA KURCHASIRAH MARMA

**In Foot:** The skin and superficial fascia of the foot were removed, revealing the following structures:

**Superior Extensor Retinaculum:** It was attached to the lower part of the anterior border of the tibia medially and to the lower part of the anterior border of the fibula laterally.

**Inferior Extensor Retinaculum:** It is a Y-shaped band of deep fascia. The stem is attached to the non-articular part of the superior surface of the calcaneum, the upper band is attached to the anterior border of the medial malleolus, and the lower band passes downwards and medially to the plantar aponeurosis.

**Structures that pass beneath the Extensor retinacula from Medial to Lateral:**

1. Tibialis anterior tendon.
2. Extensor hallucis longus tendon
3. Extensor digitorum longus tendons
4. Peroneus tertius.
5. Anterior tibial artery
6. Deep peroneal nerve

**Flexor Retinaculum:** It is dense deep fascia attached anteriorly to the posterior border and tip of medial malleolus and posteriorly and laterally to medial tubercle of calcaneum.

**Structures that pass beneath the flexor retinaculum from medial to lateral:**

1. Tibialis posterior tendon.
2. Flexor digitorum longus
3. Flexor hallucis longus.
4. Posterior tibial artery
5. Tibial Nerve

**Structures that pass beneath the superior peroneal retinaculum:**

1. Tendon of peroneus longus
2. Tendon of peroneus brevis
3. Plantar aponeurosis
4. Flexor digitorum brevis,
5. Abductor hallucis,
6. Flexor hallucis brevis,
7. Adductor hallucis were identified on the medial side of sole foot.
8. Four lumbricals muscles are originating from the tendons of flexor digitorum longus.
9. The three palmar interossei muscles were spotted positioned between the shaft of the metacarpal bones and four dorsal interossei muscles were also seen.<sup>[13]</sup>

**The vital points to remember are as follows:<sup>[14]</sup>**

- **Mamsa Marma Vasthu:** Flexor digitorum brevis, flexor digitorum accessorius.
- **Sira Marma Vasthu:** Dorsalis pedis artery, medial and lateral plantar arteries.
- **Snayu Marma Vasthu:** Inferior extensor retinaculum, tendons of tibialis anterior, extensor hallucis longus, extensor digitorum longus, peroneus tertius, deep peroneal nerve, and the apex of the plantar aponeurosis, as it is considered the modified deep fascia. Since Snayu is the binding material, the plantar aponeurosis can be considered here.
- **Asthi Marma Vasthu:** Talus, plantar surface of calcaneum.
- **Sandhi Marma Vasthu:** Talocalcaneonavicular joint.

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## DISCUSSION

The exploration of *Adhoshakhagata Kurchashira Marma* within both *Ayurvedic* and modern frameworks provides a profound understanding of this critical anatomical site. In *Ayurveda*, *Marmas* are revered as vital points where *Prana*, or life force, resides. Injury to these points can lead to significant consequences, ranging from pain to fatality. Specifically, *Adhoshakhagata Kurchashira Marma* is classified under *Adhoshakhagata Marma* (those located in the lower extremities) and is acknowledged for its susceptibility to causing pain and swelling upon injury.

**Anatomical and Functional Significance**

*Adhoshakhagata Kurchashira Marma* is an important anatomical structure in the lower limb, located just below the ankle joint. It includes vital elements such as the superior and inferior extensor retinacula, various tendons (e.g., tibialis anterior, extensor hallucis longus), and neurovascular structures like the deep peroneal nerve and anterior tibial artery. These components are essential for the functional integrity and movement of the foot, highlighting the importance of the *Marma*.

The extensor and flexor retinacula are stabilizing structures that hold tendons close to the bones during muscle contraction. This is crucial for maintaining the alignment and function of the foot during movement. The presence of neurovascular bundles emphasizes the sensitivity and potential consequences of trauma to this area, as these structures are essential for sensory and motor functions.

**Correlation with *Ayurvedic* Classifications**

In *Ayurvedic* terms, *Adhoshakhagata Kurchashira Marma* is primarily considered a *Snayu Marma*, associated with ligaments and tendons, reflecting its structural composition dominated by binding and supportive tissues. This classification correlates well with the modern anatomical understanding, where tendons and retinacula are key components. Additionally, its designation as *Rujakara* (pain-inducing) upon injury aligns with the observed clinical outcomes of trauma to this region, such as pain and inflammation due to the involvement of sensory nerves and vascular responses.

The *Adhoshakhagata Kurchashira Marma* is classified as one *Angula* (approximately the width of a thumb), highlighting its specific and limited anatomical space. Compromise of this area can result in significant dysfunction and pain. The inclusion of structures such as the plantar aponeurosis, a thickened deep fascia supporting the foot arch, demonstrates the comprehensive nature of *Marma* analysis, encompassing both superficial and deep structures.

**Comparative Analysis and Clinical Implications;** Understanding the *Adhoshakhagata Kurchashira Marma* from both *Ayurvedic* and modern anatomical perspectives provides valuable insights for clinical practice. For *Ayurvedic* practitioners, this underscores the importance of carefully considering *Marma* points during therapeutic interventions such as massage or *Marma* therapy. For modern clinicians, recognizing the correlation between *Marma* points and critical anatomical structures can improve diagnostic accuracy and treatment efficacy for lower limb injuries.

In surgical contexts, the careful avoidance of these regions, as emphasized by *Sushruta*, highlights the timeless principle of preserving vital anatomical integrity to prevent adverse outcomes. This principle is still relevant today, especially in orthopedic and vascular surgeries, where unintended damage to these structures could lead to prolonged recovery and complications.

## CONCLUSION

The study of *Adhoshakhagata Kurchashira Marma* demonstrates the intricate connection between traditional *Ayurvedic* knowledge and modern anatomical science. By combining these perspectives, we can develop a comprehensive understanding of the importance of this *Marma*, its anatomical associations, and the significant impact of injury. This integrative approach not only strengthens the theoretical basis of *Marma* therapy, but also improves clinical practices focused on maintaining and restoring the proper function of the lower extremities.

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