

## A Detailed Analysis Of Marma Science With Emphasis On Urvi Marma In The Lower Extremity

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### ABSTRACT

*Marma* is important vital points in *Ayurveda*, there are one hundred and seven *Marmas*, which may be divided into five *Marma*, like as *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi Marma*. Injury to *Marma* point occur deformity, death or paralysis in the body. *Marma* points should be described in *Sharira Sthan* by *Acharya Sushruta* and *Acharya Vaghabhatta*. When it comes to surgical procedures, it is crucial to initially assess the precise location and dimension of the *Marma* point. Only then should the incision be carefully made to ensure that the specific *Marma* is not adversely impacted. The domain of *Shalya Tantra* encompasses about half of the knowledge related to *Marma*. The *Marmas* are the seats of *Vayu*, *Soma* and *Tejas* as compare to three fundamental qualities of *Sattva*, *Rajas* and *Tamas*. Among these one hundred and seven *Marmas*, *Urvi Marma* locates in each limb. In the lower limb, it is present in mid region of the thigh. Aim of our study is to understand anatomical structures and vitality present in the site of *Urvi Marma*. The *Marma* measures 1 *Anguli* in *Pramana* and is categorized as a *Vaikalyakara Marma* based on *Parinam*. Located at the center of the thigh, the *Urvi Marma* is identified. Other classification of *Urvi Marma* under the *Sira Marma* and *Adhoshakhagat Marma*. Injury to *Urvi Marma* leads to severe blood loss (*Shonitakshaya*) which is due course of time causes wasting of lower limb (*Sakthishosh*). *Urvi Marma* controls plasma and water metabolism, *Kapha Dosha* and water element in the body. Vitality of *Urvi Marma* is *Vata*, *Rakta* and *Mamsa Dosha* and *Jala Mahabhuta*. The components found at the location of the *Urvi Marma* include the femoral artery, femoral vein, saphenous nerve, adductor canal, nerve to vastus medialis, sartorius muscle and rectus femoris muscle.

**KEYWORDS** - *Marma*, *Urvi*, *Vaikalyakara Marma*, *Sira Marma*.

### INTRODUCTION

*Marma* is important vital points in *Ayurveda*, there are one hundred and seven *Marmas*, which may be divided into five *Marma*, like as *Mamsa*, *Sira*, *Snayu*, *Asthi*, and *Sandhi Marma*.<sup>1</sup> Injury to *Marma* point occur deformity, death or paralysis in the body. *Marma* points should be described in *Sharira Sthan* by *Acharya Sushruta* and *Acharya Vaghabhatta*. When it comes to surgical procedures, it is crucial to initially assess the precise location and dimension of the *Marma* point. Only then should the incision be carefully made to ensure that the specific *Marma* is not adversely impacted. The domain of *Shalya Tantra* encompasses about half of the knowledge related to *Marma*. The first reference of *Marma* is given in *Rugveda*. The *Marmas* are the seats of *Vayu*, *Soma* and *Tejas* as compare to three fundamental qualities of *Sattva*, *Rajas* and *Tamas*.<sup>2</sup> Among these one hundred and seven *Marmas*, *Urvi Marma* locate in each limb. In the lower limb, it is present in mid region of the thigh. *Marmas* are of five in number as per injury effect; *Sadyopranahara*, *Kalantara Pranahar*, *Vishalyaghna*, *Vaikalyakara* and *Rujakara Marma*.<sup>3</sup> Regional *Marma* are divided into three; *Shakhagata*, *Koshtagata* and *Urdhvajatrugata*. *Shakhagata Marmas* are 44 in numbers and *Urvi Marma* is one of them. An injury to *Marma* as *Sadyopranahara* is characterized by symptoms like as; *Indriyartheshva* (deformity of the sense organ), *Asamprapti* (syncope), *Mana- Buddhi Viparyay* (discomfort of *Mana* and *Buddhi*) and *Ruja* (pain). An injury to *Marma* as *Kalantarapranahara* is characterized by symptoms like as; *Dhatu- Kshay* (loss of *Rasa*, *Rakta Dhatu* etc), *Nasha* (death). An injury to *Marma* as *Rujakara* is characterized by symptoms like as; various types of pain, which may be bring about deformity.<sup>4</sup>

Out of five *Marmas*, considering the consequences of an injury to the *Urvi Marma*, the *Vaikalyakara Marmas* are the points where injury causes severe blood loss and wasting of the lower limb. *Sakthi Marma* is 44 in number. Based on prognosis of injury *Urvi Marma* is said as *Vaikalyakara Marma*. Based on constitution of *Marma*, it said as *Sira Marma*. *Urvi Marma* are total four in number, present one in each limb.

Causes of trauma in the form of serious accident, wars, injury natural disasters, domestic violence etc. are increased. The science of vital points is very important for treatment. The science of *Marma* is very vast. Among these all *Marma*, *Urvi Marma* is explained in this article. Injury to *Urvi Marma* causes severe blood loss (*Shonitakshaya*) which in due course of the time causes wasting of lower limb (*Sakthishosha*). Utilizing both contemporary and historical scientific knowledge to gain insight into the adjacent anatomical structure of the *Urvi Marma* and significance of its vitality.

## MATERIAL AND METHODOLOGY

- Reviewing existing literature on *Marmas* in *Ayurvedic* texts like, *Sushruta Samhita*, *Ashtang Hridayam*, as well as modern anatomy texts such as cunningham's manual of practical anatomy, B.D.chaurasia, gray's anatomy, atlas of human anatomy, tortora's principles of anatomy and others.
- Gathering information specially about the *Urvi Marma* from ancient texts like *Sushruta Samhita*, and *Ashtang Hridayam* etc.
- Examining journals, research papers, articles from various periodicals and newspapers and relevant information accessible on the internet. The conceptual aspect will involve through observation, compilation and data analysis from these sources.

## REVIEW

### Concept of *Urvi Marma*-

The word meaning of *Urvi* is the "wide" or the mid region of the thigh.<sup>5</sup>

### Location-

ऊरुमध्ये ऊर्वी नाम तत्र शोणितक्षयात्सक्थिशोषः॥ (सु.शा.6/25)

The *Urvi Marma* is situated right in the middle of thigh.<sup>6</sup>

ऊरुर्मध्ये तद्वेधात्सक्थिशोषोऽसङ्क्षयात् ॥ (अ. ह.शा.4/7)

Located at the center of the thigh, the *Urvi Marma* is identified.<sup>7</sup>

ऊरुमध्ये ऊर्वी, तत्ररक्तक्षयात् सक्थिशोषः॥ (अ.सं.शा. 7/4)

The *Urvi Marma* is found in the midsection of the thigh.<sup>8</sup>

सिरामर्मदमेकाङ्गुल वैकल्यकरं च ॥<sup>9</sup> (डल्हण, सु.शा. 6/24)

The *Marma* measures 1 *Anguli* in *Pramana* and is categorized as a *Vaikalyakara Marma* based on *Parinam*.

### Classification-

TABLE NO- 1 (Classification of *Urvi Marma*)

Sr. No.	Types of classification	According Acharya <i>Sushruta</i>
1	According to <i>Shadanga</i>	<i>Adhoshakhagata Marma</i> <sup>10</sup>
2	According to <i>Rachana</i>	<i>Sira Marma</i> <sup>11</sup>
3	According to <i>Parinam</i>	<i>Vaikalyakara Marma</i> <sup>12</sup>
4	According to <i>Pramana</i>	1 <i>Anguli</i>
5	Number of <i>Marma</i>	Two

### Effect of injury-

तत्र शोणितक्षयात्सक्थिशोषः ॥<sup>13</sup> (सु.शा.6/25)

Injury to *Urvi Marma* causes severe blood loss (*Shonitakshaya*) which in due course of time causes wasting of lower limb (*Sakthishosha*).

### Vitality-<sup>14,15</sup>

*Dosha- Vata, Rakta, Mamsa.*

*Mahabhuta- Jala.*

### Controls-<sup>16</sup>

Control plasma and water metabolism (*Rasavaha* and *Udakavahasrotamsi*), *Kapha Dosha* and water element in the body.

### Anatomical structure of *Marma*-<sup>17</sup>

- Skin
- Sartorius
- Rectus femoris muscle

- Adductor canal
- Medial branch of the femoral nerve (Nerve to vastus medialis)
- Saphenous nerve branch
- Arteria Femoralis
- Greater femoral vein

### **Important structures of *Urvi Marma*-<sup>18</sup>**

- Femoral artery- It is the main artery of lower limb. It originates from external iliac artery. It originates behind the inguinal ligament at the midinguinal point. It passes downwards and medially, enters in the femoral triangle then it continues into the adductor canal. At joins with the popliteal artery at the lower end of the adductor canal.
- Femoral vein- It arises as popliteal vein at lower end of the adductor canal and it connects to the external iliac vein behind the inguinal ligament, lies medially to the femoral artery and femoral nerve.
- Saphenous nerve- A branch of the posterior division of the femoral nerve. It runs along the medial side of the knee, travels in front of the great saphenous vein, and pierces the skin on the medial side of the leg and foot.
- Adductor canal- An intermuscular space situated on the medial side of middle one-third of the thigh. It extends from the apex of the femoral triangle above to the opening in the adductor magnus below. It comprises anterior, posterior and medial walls. The anterior wall is formed by the vastus medialis. The posterior wall (floor) is formed by the adductor longus. The medial wall (roof) consists of a sturdy fibrous membrane that connects the anterior and posterior walls.

### **Vitality of important structures-**

Femoral artery- Excessive bleeding, Peripheral vascular diseases, Necrosis, Gangrene, Hypotension, Aortic aneurysms, Arteriovenous malformation.

Femoral vein- Wound infection, Venous thrombosis, Bleeding, ARDS, Arterial thrombosis.

Femoral nerve- Femoral neuropathy, Diabetic foot, Loss of sensation, Movement disability, Complex regional pain syndrome.

Adductor canal- Local anesthetic systemic toxicity (LAST), Infection, Allergic reaction, Nerve injury, Hematoma, Edema, Thrombosis, Paresthesia.

## **DISCUSSION**

Points of *Urvi Marma* are;

- 1) *Urvi Marma* is located below *Lohitaksha Marma*, above *Ani Marma*.
- 2) Exactly position of *Urvi Marma* is middle region of the thigh (*Uru*).
- 3) Total number of *Urvi Marma* are four (1 in each limb).
- 4) It is a *Sira Marma* (based on *Rachana Bhed*).
- 5) It is *Vaikalyakara Marma* (based on *Parinam Bhed*).
- 6) *Pramana* of *Urvi Marma* is 1 *Anguli*.
- 7) The synonyms of *Urvi Marma* is the wide or the mid region of thigh.

The anatomical structural study of *Urvi Marma* with the help of modern text shows that are femoral artery, femoral vein, adductor canal, two nerves; saphenous branch, nerve to vastus medialis, two muscles; Sartorius muscle and rectus femoris muscle. Injury to femoral artery causes massive bleeding, peripheral vascular diseases, necrosis, gangrene, hypotension, unconsciousness, aortic aneurysms, arteriovenous malformation. Injury to Femoral vein leads to wound infection, venous thrombosis, bleeding, ARDS, arterial thrombosis. Injury to saphenous branch and nerve to vastus medialis causes femoral nerve entrapment/injury, muscle weakness, atrophy, diabetic foot, loss of sensation, movement disability, complex regional pain syndrome, numbness or tingling sensation of leg and paralysis of leg. Injury to sartorius and rectus femoris muscle causes muscular dystrophy, myositis, pain and tenderness in the groin and inside of thigh, difficulty in walking or limping, sudden onset of pain accompanied by sensation of inner thigh, failure to continue activity after initial onset of groin pain. Once they enter the into adductor canal, the femoral artery and femoral vein transform into the popliteal artery and popliteal vein respectively. Therefore, it is possible to regard the femoral vein as the *Urvi Marma*.

## **CONCLUSION**

*Urvi Marma* is situated in the central area of the anterior thigh. Anatomical components found at the *Urvi Marma* site include that femoral artery, femoral vein, saphenous nerve, nerve to vastus medialis, adductor canal, Sartorius muscle and rectus femoris muscle. *Urvi Marma* can be termed as *Adhoshakhagata Marma*, *Sira Marma*, *Vaikalyakara Marma*. *Pramana* of *Urvi Marma* is 1 *Anguli*. Injury to *Urvi Marma* causes severe blood loss (*Shonitakshaya*) which is due course

of time leads wasting of lower limb (*Sakthishosh*). *Urvi Marma* maintains the plasma and water metabolism, *Kapha Dosha* and water element in the body. Vitality of *Urvi Marma* is *Vata*, *Rakta* and *Mamsa Dosha* and *Jala Mahabhuta*.

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