

A comprehensive study of *Urvi Marma* - The vital point mentioned by Acharya Sushruta

Research Article

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Abstract

Marma science (traumatology) is a unique specialty of Ayurveda that plays a significant role in surgical procedures and treatments. *Acharya Sushruta* has described *Urvi Marma* as part of the *Sira marma* (a vital point which is vascular in nature), and he has mentioned the traumatic disorders associated with it. In order to apply *Acharya Sushruta's* invaluable knowledge of *Urvi Marma* in the current era, it is necessary to precisely correlate his concept of *Urvi Marma* with present Anatomical perspectives. This research aims to bridge the gap between old wisdom and current science. Material and Methods: A comprehensive review of the literature on the concept of *Marma Sharir* (traumatology) and *Urvi Marma* was conducted, taking into account the position of *Urvi Marma* as told by our ancient experts. The anatomy of the thigh, as well as its application, has been researched through numerous books and dissection.

Key Words: *Vaikalyakar Marma, Sira Marma, Adhoshakhagat Marma, Traumatology, Sakthishosha, Uru.*

Introduction

The basic concepts of Ayurveda are unique. These concepts work as the pillars of Ayurveda science. Thus, Ayurvedic clinicians have to think in a holistic way considering its own special anatomy, physiology, and pathology. Unless and until the fundamental Ayurvedic concepts are correlated in a modern context, one cannot immediately rely on modern technical findings while establishing an Ayurvedic treatment line. Pathological principles in Ayurveda can only be grasped if *Rachana Sharir* (anatomy) and *Kriya Sharir* (physiology) are well understood. One can never be a good clinician without knowledge of these two. *Marma science* is related to trauma over vital points. The knowledge of *Marma* (vital points) has been used all over the world for the prevention and cure of the disease for centuries. It has its prime importance in *Shalyatantra* (surgery). *Marma's* injury can be fatal. (1) (2)(3)

About the anatomical structures involving the *Urvi Marma*, Acharya Sushruta has mentioned

concisely as “*Uru madhye Urvi tatra Kshonit kshayat saktishosha*” (meaning *Urvi Marma* is located at the middle of the thigh and trauma over it causes lower limb dystrophy due to blood loss.) (4) Acharya Sushruta classified *Urvi Marma* as *Sira Marma* (a vital point which is vascular in nature), but there are various vessel-like structures in the thigh region, so one can not pinpoint exactly where Acharya Sushruta named *Urvi Marma*. To co-relate the exact anatomical site of *Urvi Marma*, it is required to research the entire thigh region using dissection and literature.

With the use of this research, an attempt is being made to guide therapeutic procedures such as *Siravedha* (venepuncture), and *Agnikarma* (cauterization) over the thigh region, as well as comprehending current disorders such as compartment syndrome of the thigh from an Ayurvedic perspective.

Aim

To determine the exact Anatomical location of *Urvi Marma*.

Objectives

- To study the concept of *Marma*.
- To perform the literature study of *Urvi Marma*.
- To study the anatomical structures in the thigh region in detail with the help of dissection on the cadaver.
- To find out the exact location and structures involved in *Urvi Marma*.

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Material and Methods

A comprehensive review of the literature on the concepts of *Marma Sharir* (traumatology) and *Urvi Marma* was conducted. The study of the anatomy of the thigh with its applied aspect was done from numerous literature and by real dissection, taking into account the position of *Urvi Marma* told by our ancient experts in the *Uru*, i.e. thigh region.

The study was carried out at the Department of Rachana Sharir of R. A. Podar Ayurveda Medical College, Worli, Mumbai. The step-by-step dissection was performed on a cadaver at *Adhoshakha* (lower limb) to examine the anatomy of *Urvi Marma* and related anatomical structures in the thigh region, according to conventional guidelines mentioned in Cunningham's practical manual. Photographs of dissection were taken. In order to determine the exact location of *Urvi Marma* as described by Acharya Sushruta in terms of modern anatomical components, the literature on both Ayurveda and modern aspects was correlated and studied with the use of dissection findings.

Literature findings from Ayurveda literature about *Urvi Marma*:(4)

On basis of the constitution	<i>Sira Marma</i> (Vital point which is Vascular in nature)
Type According to <i>Aghat Lakshana</i> (traumatologically)	<i>Vaikalyakar Marma</i> . (Vital point resulting in disability after trauma.)
<i>Shadanganusar</i> (on basis of location)	<i>Adhoshakhagat Marma</i> (located in the lower extremity)
Position mentioned	“ <i>Uru madhye</i> ” (at the middle of the thigh)
<i>Pramana</i> (dimension)	1/2 <i>Angula</i> (measurement in terms of once own finger)
<i>Sankhya</i> (total numbers)	4
<i>Viddha Lakshan</i> (effect of trauma)	Atrophy of the lower limb, owing to the incidental hemorrhage.

About the word *Uru* (Thigh)

Uru (thigh) means the area of the lower limb above the *Janu* (knee). According to Acharya Sushruta, the Length of *Uru* (thigh) is 18 *Angula* (measurement in terms of once own finger) and the Circumference is 32 *Angula*(5) (6). So the *Uru* (thigh) region mentioned in ancient texts is confirmed as thigh region.

Literature findings from modern literature

- Injury to the femoral nerve may result in numbness, weakness, and paralysis of the legs. The femoral artery is situated superficially in the femoral, its laceration is common due to trauma (7).
- Femoral mononeuropathy is uncommon and can occur due to trauma, compression, stretch injury, or ischemia (8).

- The most striking symptoms are the weakness of the quadriceps muscles and a decreased patellar reflex (9).
- Acute compartment syndrome (ACS) of the lower leg is a time-sensitive orthopedic emergency that relies heavily on precise clinical findings. Late findings of ACS can lead to limb amputation, contractures, paralysis, multiorgan failure, and death. (10)

Observations From dissection of thigh

At the apex of the femoral triangle femoral artery, femoral vein, profunda femoris artery, and vein, nerve to vastus medialis, and the saphenous nerve all these structures are placed compactly and superficially just prior to entering the adductor canal.

Photographs

Image 1: A dissected femoral triangle



In this image the forceps is pointing the apex of the triangle.(1)

At the apex of femoral triangle the femoral artery, vein and nerve are seen converging in a small region.(2)

Discussion

Discussion about the concept of *Marma*

According to Acharya Sushruta, the *Marma* (vital point) location in the body is a site where *Mamsa* (flesh), *Sira* (vessels), *Snayu* (ligaments), *Asthi* (bones), and *Sandhi* (union point or joint) combine together and is a vital point where the *Prana* (life) is located. Whereas Acharya Vagbhata stated that *Marma* is a point in the body that when given pressure from outside causes pain, tenderness, and shows abnormal pulsation.

Considering the composition and *Pramana* (dimensions) of *Marma* in general, as well as the concept of *Marma*, it can be concluded that all five structures are not required in every *Marma*. However, injury at the *Marma* site affects the general structure and functions of these five structures in a specific type of the *Marma*. The main structure present at the site of *Marma* is used to classify further *Marmas*. *Marmas* are related to the vital parts of the body and have energies of the body. This connects the body, mind, and *Prana* (life).

Discussion on Location of *Urvi Marma*

The *Urvi Marma* lies in the middle of the *Uru* (Thigh) region. According to *Shabdakalpdruma* and *Amarakosha*, the word *Uru* means part of the lower limb above the *Janu* (knee) (5)(6). The thigh region is the part above the knee, so the location of *Urvi Marma* is in the middle of the thigh. *Urvi Marma* is *Sira Marma* (Vital point which is Vascular in nature), so among all structures mentioned at the site of *Marma* vessels are the main structures present at the location of *Urvi Marma*. According to the literature study and observations and results, the femoral artery, femoral vein, profunda femoris artery and vein, nerve to vastus medialis, and saphenous nerve are all positioned compactly and superficially just prior to entering the adductor canal.

Discussion on the basis of the composition of *Urvi Marma*

The concept of *Marma*, as previously stated, is not an individual construction. *Marma* is really a group of anatomical structures existing at a given site, as well as their functional impacts, which may be impacted by damage to the *Marma* site. The *Marma* differs depending on the prominence of certain structures. *Urvi Marma* is a *Sira* type of *Marma*, therefore it is primarily a vascular *Marma*. However, other structures [*Mamsa*(flesh), *Sira* (vessels), *Snayu*(ligaments), *Asthi*(bones), and *Sandhi* (union point or joint)] are also engaged in the *Marma*.

At the apex of the femoral triangle, *Sira* (artery, vein, or nerve) structures are present. If there is any trauma ('*aghat*') or injury at the apex of the femoral triangle region that will lead to the pathology of nerves or vessels means severe blood loss ('*shonit kshaya*') and neurological damage resulting in the muscular weakness of the lower limb will occur ('*Sakthishosha*').

Structures present in the concept of *Urvi Marma* can be summarized as-

- **Mamsa** - muscle at the floor of the triangle.
- **Sira**- femoral vein, artery, and nerve. These are actual components that get damaged due to trauma hence the *Marma* type is the *Sira Marma*, the due concept of *pradhanya*. (concept of maximization)
- **Sandhi**- the word *Sandhi* literally means the place where two or more structures meet together.
- **Asthi** –femur bone, is placed below the *Marma* structure, because of the hardness of the femur when trauma occurs there; the structures are

strongly squeezed between the femur and object causing trauma. So results in more significant injury.

Also, a trauma in this region gives similar symptoms as the *viddha lakshana* (traumatic symptom) of *Urvi Marma*.

Discussion based on *pramana* (Dimensions)

All *Marma* (vital point) has been explained in terms of definite *pramana* (Dimensions) in *Samhitas*(ayurvedic standard texts) which helps in the determination of the location of the *Marma*. *Pramana* (Dimension) of *Urvi Marma* according to Acharya Sushruta is *Eka Angula* (one finger width). As shown in the dissection, femoral vessels and nerves are close to each other in the femoral triangle from its base and run towards the adductor canal, but at just the apex of the femoral triangle before entering the canal, all these structures are closely converged in the area of the *Eka angula pramana*(one finger width). Trauma to the *eka angula* (one finger width) region can damage the femoral artery, vein, and nerve all at the same time.

Discussion based on clinical anatomy & *viddha lakshana* (traumatic symptom)

Viddha lakshana (traumatic symptom) of *Urvi Marma* is '*sakthishosha*' (atrophy of limb) occurs due to '*shonit kshaya*' (the blood loss). Conditions like Laceration of femoral vessels, Femoral neuropathy, and Compartment syndrome of the thigh occur as a result of thigh trauma and show signs and symptoms similar to the *Urvi Marma's viddha lakshana* (traumatic symptom).

Further scope for the study

- Patients with *Sakthishosha* complaints can be asked for a history of trauma in the '*Uru Madhya*' (middle of thigh) region at the clinical level.
- Taking the advice of a *Marma* practitioner can be helpful to understand the practical value of a particular *Marma* in terms of treatment.
- The research can be used as a clinical trial. Trauma centers and military hospitals can provide injured cases relating to *Marma* point.

Conclusion

The area above the apex of the femoral triangle is the location of *Urvi Marma* referenced by Acharya Sushruta.

Further evidence-based clinical and surgical studies can be done to verify the concept.

References

1. Trikamji Y., Sushrut Samhita, Vol 1, Chaukhamba Surbharti Prakashan, Varanasi, 2014, page no.369
2. Shastri A., Sushrut Samhita, Vol 1, Chaukhamba Sanskrit Sansthan, Varanasi, 2003, page no. 50
3. Shastri A., Sushrut Samhita, Vol 1, Chaukhamba Sanskrit Sansthan, Varanasi, 2003, page no. 50
4. Ghanekar BG., Sushruta Samhita, Meharchand Lachhmandas Publications; Reprint 2014, page 192.

Leena G Jungade et.al., A comprehensive study of Urvi Marma - The vital point mentioned by Acharya Sushruta

5. Shashtri H., Amarkosh, Chaukhamba Surbharti Prakashan, Varanasi reprint 2012, page 293
6. KantaDeva R., Shabda Kalpadroom, Part one, Chaukhamba Surbharti Prakashan, Varanasi, page 279.
7. Moore, Keith L., Arthur F., Clinically Oriented Anatomy, 6th Edition, 2006, page 560.
8. Padua L, D'Aloia E, LoMonaco M. & et al., Mononeuropathy of a distal branch of the femoral nerve in a bodybuilding champion, J Neurol Neurosurg Psychiatry, 1997 Nov; 63(5):669-71. DOI: 10.1136/jnnp.63.5.669. PMID: 9408112; PMCID: PMC2169798.
9. Hakim M, Katirji B., Femoral mononeuropathy induced by the lithotomy position: a report of 5 cases with a review of literature, Muscle Nerve. 1993 Sep;16 (9):891-5. doi:10.1002/mus.880160902. PMID: 8355719.
10. Pechar J, Lyons MM., Acute Compartment Syndrome of the Lower Leg: A Review, J Nurse Pract. 2016 Apr;12(4):265-270. DOI: 10.1016/j.nurpra.2015.10.013. PMID: 27499719; PMCID: PMC4970751.
