



STUDY OF MARMAS IN LOWER EXTREMITY WITH SPECIAL REFERENCE TO “URVI MARMA”

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ABSTRACT

Marma (vital point) science is one element of *Ayurveda* gifted by *Acharyas*. It is not much developed in modern science. *Marma* are vital point on body surface having importance regarding traumatic effect. *Marma* is vital point where injury occur can lead to disability, dysfunctioning or even termination of life. Every aspect of *Marma* like definition, signs symptoms of *Marma* injury was thoroughly explained by *Acharya Sushrut*. Not only the *Marma* but also the *Marma Viddha Lakshana* (after effect injury) was documented by *Acharya Sushrut*. These *Lakshanas* (symptoms) shows similarity with the sign & symptoms occur due to the trauma at that site. It is an need of an hour to find out the exact structure present at *Marma* site so as to prevent disability or deformity effect after injury. Here we are studying *Urvi Marma*, which lies in the middle of the thigh as given in *Samhita Granthas*. As per modern anatomy in the middle region of thigh, there is structure of adductor canal. Adductor canal contains femoral artery, femoral vein, which are major blood vessels of lower limb. *Urvi Marma* which has been described as *Sira Marma* (vascular vital point) & *Vaikalyakara Marma* (deformity) by *Acharyas*. The present study is done to trace the exact location of *Urvi Marma* according to modern anatomy, so that actual structure present at that site can be known which helps to elaborate *Vidha lakshana* (injury effect) of *Urvi Marma*.

KEYWORDS: *Marma*, *Urvi Marma*, adductor canal, *Marma Viddha Lakshanas*.

INTRODUCTION

The *Marma* appeared in *Vedic* period. Although it is very much old by time frame, its principles are applicable even today like its earlier era. This *Marma* concept was firstly mentioned by *Acharya Charak* but *Acharya Sushrut* & *Acharya Vagbhata* have described in detail about *Marma* in their respective *Sharir Sthan*. In dictionaries, the word *Marma* means “*Marman*” i.e., mortal point, sensitive point, weak vulnerable point. In Earlier era, this science of *Marma* was more developed in wars where warriors used to achieve their target point for destroying mortal points, i.e., *Marmas* of enemies. To explore the knowledge of *Marmas* in clinical fields, it is necessary to know the actual structures present at those sites. The direct understanding of these *Marma* in ancient science was evident, but there were no sufficient techniques to make out their original structural aspect involved

Acharya Dalhan have defined the *Marma* as “*Maryanti iti Marmani*” i.e., it is spot on the body surface where if any injury or trauma occur, causes sudden death. [1] So they should be protected from any type of injury *Arundatta* says that these are the vital points on which injury lead to *Marana* or *Maranasagrishya Dukh* (death). [2] *Marma* is the seat of *Prana* (life) which is constituted by confluence of *Mansa* (muscle), *Sira* (vein), *Snayu* (ligament), *Asthi* (bone) & *Sandhi* (joint). [3] *Vagbhata* says that, these are the points which are painful on application of pressure & shows abnormal pulsation. [4] Total number of *Marmas* described in *Samhitas* are 107. [5] Description of 107 *Marmas* given in *Samhita* is being classified into 5

types on the basis of structural involvement in it, as 1) *Mansa Marma* (muscular vital point), 2) *Sira Marma* (vascular vital point), (3) *Snayu Marma* (ligament vital point), 4) *Asthi Marma* (vital point of bone), 5) *Sandhi Marma* (vital energy points of joint) [6]. Another classification of *Marma* is on the basis of after- effect of injury to *Marma* these are as follows, 1) *Sadhya Pranhar Marma* (causing sudden death), 2) *Kalantar Pranhar Marma* (death after some time), 3) *Vishlyaghna Marma* (type of *Parinam*), 4) *Vaikalyakara Marma* (causing deformity), 5) *Rujakar Marma* (causing pain) [7] *Vaikalyakara Marmas* are those where injury or trauma causes structural & functional deformity. These are 44 in number. In each both lower limb there is pair of 11 *Marmas* these are *Kshipra*, *Tala-Hridya*, *Kurcha*, *Kurcha - Shir*, *Gulpha*, *Indra basti*, *Janu*, *Ani*, *Urvi*, *Lohitaksha* & *Vitap*. Out of these in each lower limb 6 *Vaikalyakara Marmas* are present, they are *Kurch*, *Janu*, *Ani*, *Urvi*, *Lohitaksha*, & *Vitap* [8]. As per classical description *Urvi Marma* is such vital region in the middle of thigh which falls under *Sira Marma* according to structural consideration & *Vaikalyakara Maram* on the basis of *Viddha Lakshana* (injury effect) by both *Acharya Sushrut* & *Vagbhata*.

AIMS AND OBJECTIVES OF THE STUDY

To determine the location of *Urvi Marma*

To determine the structural composition & traumatic effect of *Urvi Marma*.

MATERIALS AND METHODS

Material: for literary study

Available literature regarding *Marmas* from *Ayurvedic* texts, Modern text book.

For cadaveric dissection study,

1) Cadaver: 2 Cadavers, 1 male & 1 female

2) Dissection kit

Methodology: Literary study

All the information regarding *Urvi Marma* of lower limb is collected from *Ayurvedic* texts also the structural anatomical composition under *Urvi Marma* is studied from modern texts previous work done, research paper on related topic, previous dissertation, authentic internet sources.

All the literary material mentioned was thoroughly reviewed.

Cadaveric dissection study

Cadaveric dissection was done in the dissection hall of department of *Sharir Rachana* of GAC Osmanabad. While studying the dissected cadaver photo, images were taken with the help of digital camera. Cadavers were selected based on inclusion & exclusion criteria.

Inclusion criteria

- Cadaver with fully developed body part.
- Cadaver of either sex.
- Having natural death.
- Preserved by proper methods of preservation.

Exclusion criteria

- Cadavers of lacerated wound.
- Accidental condition.
- Cadavers of burn injuries.
- Chronic disease condition.

Dissection of lower limbs was done on cadaver by using dissection kit; Cunningham’s manual of practical anatomy^[9] and B. D Chaurasia’s Human Anatomy^[10] for understanding the *Urvi Marma*.

1. On the basis of *Ayurvedic* literature related to the *Urvi Marma*, identification of that point was done on cadaver.
2. On the basis of *Pramana* (Dimension) of this *Marma* given in texts, circular area of given *Pramana* was drawn taking *Marma* point as centre.
3. Neat & detailed dissection was done of the marked site with the help of dissection kit & dissection guides.
4. With the help of superficial & deep dissection, the structures present at that site were identified.
5. With the help of literary & observational study the location & anatomical structure of *Urvi Marma* (vital point at the middle of thigh) was exacted.

Urvi Marma

Uru means “thigh”. *Urvi* name itself suggest that it lies in the middle of thigh region. Any injury to this *Marma* results in loss of blood leading to wasting of *Sakthi* (*Skthishosh*) (Atrophy).^[11]

Name	<i>Urvi Marma</i>
Number	2
Site	In the middle of thigh
Type according to <i>Rachana</i>)	<i>Sira Marma</i>

Type according to <i>Aghataj pariman</i>	<i>Vaikalyakara</i>
Type according to <i>parinaam</i>	1 <i>Angula</i>

Anatomical structure seen at the site of *Urvi Marma Mansa: (Muscle)*

The anterior compartment of thigh region is dissected & following muscles were studied & identified,

- Satorius muscle.
- Adductor longus muscle.
- Adductor magnus muscle.

Sira: (vessels)

- Femoral artery
- Descending genicular artery (branch of femoral artery).
- Superficial saphenous branch & deep muscular branch of descending genicular artery.
- Femoral vein.
- Saphenous nerve
- Nerve to vastus medialis
- Anterior & posterior division of obturator nerve.

Observation

In lower limb, the dissection was carried out in the anterior & medial side of thigh. On lifting the middle one third of Sartorius a part of deep fascia stretching between vastus medialis & adductor muscles is exposed. On longitudinal division of this strong fascia the adductor canal is visualized. The contents of adductor canal – femoral vessels, saphenous nerve, nerve to vastus medialis & distal parts of both divisions of obturator nerve were traced.



DISCUSSION

The *Sira* (artery, vein) which nourish the entire body, are seated in *Marma* so when they are injured there will be *Kshaya* of *Dhatus* (depletion of tissues) by that *Vata*

getting increased producing sever pain. "Uru" means thigh, *Urvi Marma* can be understood in the middle of thigh region. On the basis of classical description the location of *Marma* can be exacted at the site of adductor canal. On the basis of dissection it is observed that vastus medialis forms the anterior wall of canal. Posterior wall or floor is formed by the adductor longus above & adductor magnus below. The medial wall or roof is formed by a strong fibrous membrane joining the anterior & posterior walls. The roof is overlapped by Sartorius. Femoral artery enters the canal at the apex of femoral triangle. Within canal it gives muscular branches & descending genicular branch. Descending genicular branch divides into a superficial saphenous branch & deep muscular branch.

The femoral vein lies posterior to the femoral artery in the upper part & lateral to the artery in lower part of the canal. The sephenous nerve crosses the femoral artery anteriorly from lateral to medial side. The nerve to vastus medialis lies lateral to the femoral artery. Two divisions of obturator nerve are also seen.

This *Marma* (vital point) belongs to *Sira* group. On the basis of literature study & practical observation it is revealed that *Urvi Marma* (vital point in the middle of thigh) is mainly composed of femoral artery & its branches, femoral vein, saphenous nerve & its branches as discussed above. Precisely speaking the area in the adductor canal where entrance of femoral artery, femoral vein is ascertained as seat of *Urvi Marma* in lower limb. These points have a crucial role in the formation of anastomosis in the adductor canal, if any injury / pathology occurs at these points it implicates the blood supply of area around it. The injury effect of *Urvi Marma* is *Sakthishosh* (atrophy of muscles) due to implication of blood supply. Muscles undergo atrophy due to *Raktakshaya* (blood loss). This *Viddha lakashana* of *Urvi Mrama* is compared with the *Sakthi shosh lakashan* (atrophy of muscles) mentioned by *Acharyas*. So we can trace the exact site of *Urvi Marma*.

CONCLUSION

From the above discussion I concluded that the *Urvi Marma* can be situated in the middle of thigh (vital point at the site of adductor canal) where the important vessels of lower limb are present. The anatomical structure to be considered under *Urvi Marma* (vital point at adductor canal) in the lower limb are part of femoral artery where origin of descending genicular artery & its branches are seen along with accompanying femoral vein, saphenous nerve, nerve to vastus medialis & two divisions of obturator nerve. *Urvi Marma* is considered as *Sira Marma* (according to anatomical structure) & *Vaiakalyakara Marma* (according to after- effect injury). So

from the above discussion we can conclude that the structure present under *Urvi Marma* responsible for atrophy of surrounding muscles (after trauma / injury to adductor canal) which can be compared with the *Viddha lakashna* (injury effect) "*Sakthishosh*" (atrophy) documented in *Samhitas*. Femoral artery present in adductor canal can be easily approached for surgery also it can be ligated in canal for collateral circulation through anastomosis between descending branch of lateral circumflex femoral & Descending Genicular artery. Local sensory anesthesia is provided for surgical procedures involving distal thigh & femur, knee & lower leg on medial side.

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