

**ANATOMICAL INTERPRETATION OF *URDHVA SHAKHAGATA*  
*SNAYU MARMA* AND ITS CLINICAL IMPORTANCE****Dr. Sona Rani<sup>1\*</sup>, Dr. Sunil Kumar Yadav<sup>2</sup> and Dr. Nishi Jain<sup>3</sup>**<sup>1</sup>P.G. Scholar, Dept. of Sharir Rachana, NIA, Jaipur.<sup>2</sup>Assistant Professor, Dept. of Sharir Rachana, NIA, Jaipur.<sup>3</sup>Ph.D. Scholar, Dept. of Sharir Rachana, NIA, Jaipur.Article Received on  
29 June 2017,Revised on 19 July 2017,  
Accepted on 09 August 2017

DOI: 10.20959/wjpr20179-9290

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Gate, Amer Road, Jaipur.**ABSTRACT**

In *Ayurveda* classics *Marma* is illustrated as the vital point in human body and its knowledge plays an important role in *Sharir Rachana*. *Marma* was first documented by *Acharya Charaka* but the detailed description of *Marma Sharir* is available in *Sushruta Samhita*. *Acharya Sushruta* stated every aspect of *Marma* like definition, types, signs and symptoms related to injury of *Marma*. *Marma* is very important structure present in the body which causes pain, or even death when getting injured. As according to *Acharya Sushruta* in description of *Ekadash Indriya Hasta* and *Paad* are included under the five *Karmendriya* and their function are mentioned as *Aadan* and *Vihar* respectively and also *Hasta* (hand) is considered as the most

important/superior *Yantra* among all the *Yantras* by *Acharya Sutruta*. Although each and every part of human body is important still extremities possess most important as all body activities depend on limbs as without limbs existence of human body is hard to imagine. So Anatomical interpretation of *Urdhva Shakhagata Snayu Marma* along with its clinical importance is very much needed in present era. An attempt has been made to explore structures present in *Urdhva Shakhagata Snayu Marma* through cadaveric dissection.

**KEYWORDS:** *Ekadash Indriya, Snayu Marma, Yantra.***INTRODUCTION**

The site where there is conglomeration of *Mamsa, Sira, Snayu, Asthi, Sandhi*, it is considered as *Marma*. These are specially the site of *Prana*.<sup>[1]</sup> Total numbers of *Marma* has described in

*Samhitas* are 107, each of them fall under five different headings based on region, structure, number, measurement and prognosis.

In Sanskrit the word *Snayu* means to Bind. According to *Ayurvedic* classics *Snayu* has been explained as that which resembles a fibrous structure. It is said to be a structure which bind the joints and enables the body to bear weight.<sup>[2]</sup> Sinew is the term used for tendon in older texts. It means a fibrous tissue which supports and gives strength. This term has similar meaning to that of *Snayu*. Sinew term is also used for nerve and the term nerve means to give strength or vigor. It literally means a band, bandage, ribbon or bundle. There are many structures like tendons, ligaments, nerves, muscle tissue etc. which can be related to *Snayu*.

In this context *Acharya Sushruta* has mentioned that on injury of *Snayu*, bones, muscles, blood vessels and joints do not inflict the person so as ligament. And one who knows ligament is capable of extracting hidden foreign body from the person's body.<sup>[3]</sup>

As according to *Acharya Sushruta* in description of *Ekadash Indriya Hasta* and *Paad* are included under the five *Karmendriya* and their function are mentioned as *Aadan* and *Vihar*<sup>[4]</sup> respectively and also *Hasta* (hand) is considered as the most important/superior *Yantra* among all the *Yantras* by *Acharya Sutruta*<sup>[5]</sup>. Although each and every part of human body is important still extremities possess most important as all body activities depend on limbs as without limbs existence of human body is hard to imagine.

As Present life is very fast and furious and causes so many injuries during accidents, sport and may be during daily activities which lead in to sever pain, deformity or even death. As *Marma* are vital points of the body they should be protected from injuries

### Need of study

As the perspective of *Marma* which is mention in our classics is not yet cleared in the modern science. In our classics *Marma* has been classified as *Mamsa*, *Sira* etc. but in this there is no clear analysis regarding its structure. In present scenario there should be scientific description on the basis of evidences, so it is mandatory to prove the existence of *Marma* on scientific basis.

For a good interpretation and better understanding of *Marma* on the basis of its *Rachana* and *Parinam*, there is a need of exploration of structures regarding to particular area.

## AIMS AND OBJECTIVES

- 1) A conceptual study on *Urdhva Shakhagata Snayu Marma*.
- 2) To explore the structures present in *Urdhva Shakhagata Snayu Marma* through cadaveric dissection.

## MATERIAL AND METHODS

- 1) Review of *Ayurvedic* literature from *Ayurvedic* classics including relevant commentaries.
  - 2) Relevant modern literature has been consulted for comparative study and drawing inference and justification.
  - 3) Other print media, online information, journals, books, magazines etc.
- Cadaveric study: Dissection of *Urdhva Shakha* of cadaver had been carried out in the Dept. of *Sharir Rachana*, National institute of *Ayurveda* Jaipur and the structures related to *Marma* were identified. All structures were analyzed and compared on the basis of *Ayurvedic* literature of *Urdhva Shakhagata Snayu Marma* with special reference to contemporary science.

## AYURVEDIC REVIEW

Among the classification of *Marma*, *Snayu Marma* classified as 27 in number by *Acharya Sushruta*. Among 27 *Snayu Marma* five are located in *Urdhva Shakha*, these are - *Kshipra*, *Kurcha*, *Kurchashira*, *Ani* and *Kakshadhara*.<sup>[6]</sup>

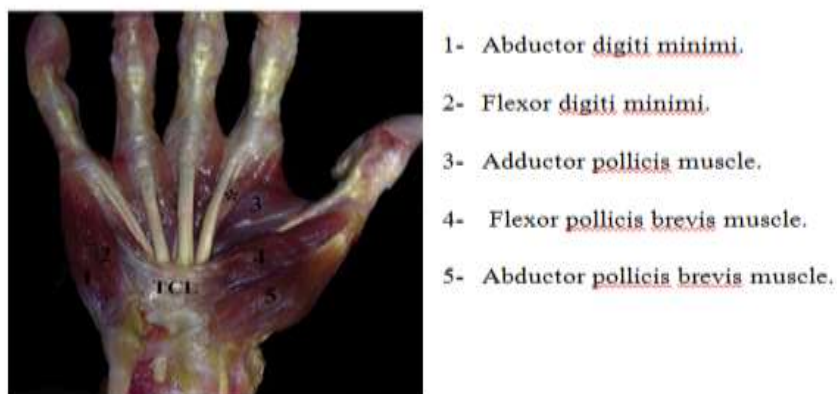
### *Kshipra Marma*

According to *Shabdkosh*, meaning of *Kshipra*.

- The part of hand between the thumb and the fore finger.
- Quickly, speedily, immediately ,With a short



Figure no 1: palmar aspect of hand.



**Fig.no. 2: dissection picture of *Kshipra Marma* and *Kurcha Marma*.**

***Kshipra Marma*<sup>[7]</sup> has following features**

Number-2.

Site-This *Marma* is situated between the thumb and index finger of hand.

*Pramana- Ardhanguli Pramana.*

*Marma type*-It is predominant of *Snayu*.

Prognostically-It is a type of *Kalantar Pranhara Marma*.

**Anatomical exploration (structure involved in region of *Kshipra Marma*)**

- Adductor pollicis muscle of thumb (thenar muscle).
- First lumbrical muscle.
- First palmar and dorsal interosseous muscle.
- Princeps pollicis artery.
- Radialis indicis artery
- Palmar branch of median nerve
- Dorsal venous network of hand
- Dorsal digital artery and Dorsal metacarpal artery of radial artery
- Dorsal digital nerve of radial nerve.
- Superficial and deep palmar arch.

***Kurcha Marma*: According to *Shabdkosh*, meaning of *Kurcha***

- A bundle, A bunch, A brush like, A peacock's feather.

**It can be anything**

It can be a bundle of nerves, vessels, tendon, ligament etc. But it should have a common base, where these structures are close together and held together. Then they should be spreading as they move distally.

There are six *kurcha* 's in our body<sup>[8]</sup>

Hastha-2, Pada-2, Greeva-1, Medhra-1.

***Kurcha Marma*<sup>[9]</sup> has following features**

- Number-2.
- Site- above the *Kshipra Marma* on both sides.
- *Pramana- Chaturangul Pramana.*
- *Marma type-Snayu Marma.*
- Prognostically- *Vaikalayakar Marma.*

**Anatomical exploration (structure involved in region of *Kurcha Marma*)**

- Tendon of Extensor digitorum.
- Tendon of flexor carpi radialis.
- Tendon of flexor pollicis longus.
- Tendon of flexor digitorum superficialis (sublimus) and profundus.
- Tendon of extensor indicis with its synovial sheath.
- Tendon of extensor pollicis longus, brevis and extensor carpi radialis longus, brevis with its synovial sheaths.
- Tendon of abductor pollicis longus.
- Radial artery and its dorsal carpal branches.
- Carpo metacarpal ligament.
- Inter carpal ligament.
- Synovial sheath of flexor tendon.
- Median and Radial nerve.
- Thenar muscles.

**Kurchshira Marma****Fig.no. 3: Dissection picture of *Kurchashira Marma*.**

*Kurchshira* means the head of *Kurcha* so the position of *Marma* should be near the head of *Kurcha*. The head of *Kurcha* should be the proximal end of *Kurcha* where all structures are held together.

***Kurchshira Marma*<sup>[10]</sup> has following features**

Number-2.

Site-Below *Manibandha Sandhi*.

*Pramana*- *AnguliPramana*.

*Marma* type (*Rachana*)-*Snayu Marma*.

Prognostically – *Rujakar Marma*.

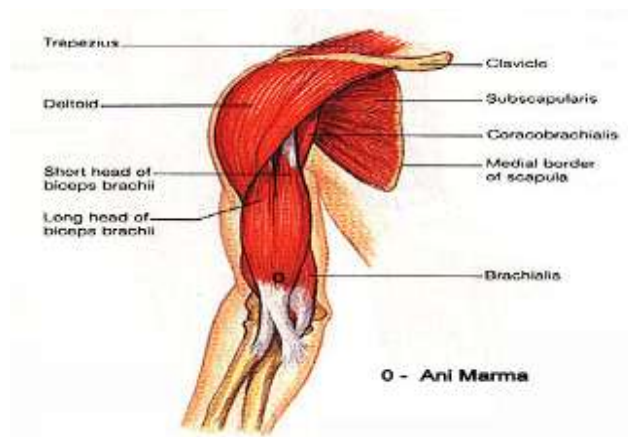
**Anatomical exploration (structures involved in region of *Kurchshira Marma*).**

- Tendon of Extensor digitorum.
- Tendon of flexor carpi radialis.
- Tendon of flexor pollicis longus.
- Tendon of flexor digitorum superficialis (sublimus) and profundus.
- Tendon of extensor indicis with its synovial sheath.
- Tendon of extensor pollicis longus, brevis and extensor carpi radialis longus, brevis with its synovial sheaths.
- Tendon of abductor pollicis longus.
- Extensor retinaculum.
- Flexor retinaculum (Transverse carpal ligament or anterior annular ligament).
- Radial artery.
- Radial and median nerve.
- Radial collateral ligament.

**Ani Marma**

According to *Shabdkosh*, the meaning of *Ani*.

- A boundary limit
- The part of the leg just above the knee corresponding part in upper limb is just above elbow.



**Figure of Ani Marma.**

**AniMarma<sup>[11]</sup> has following features**

Number-2.

Site-3 *Angul* above the elbow.

*Pramana- Ardhanguli Pramana.*

*Marma type-Snayu Marma.*

Prognostically- *VaikalayaKara Marma.*

**Anatomical exploration (structures involved in region of Ani Marma)**

- Tendon of biceps brachii muscle and Triceps brachii muscle
- Brachial artery and its branches.  
Profunda brachii artery.  
Radial collateral artery.  
Inferior ulnar collateral artery.
- Cephalic and basilic veins.
- Median nerve, Radial nerve, Musculocutaneous nerve and ulnar nerve.

**Kakshadhara Marma**

The word *Kakshadhara* means the part of the body where the upper arm is connected with the shoulder joint.





**Fig.no.5: Dissection picture of Kakshadhara Marma.**

**Kakshadhara Marm<sup>[12]</sup> has following features**

Number-2.

Site-between *Kaksha* and *Vaksha* (chest).

*Pramana– ek Angul Pramana.*

*Marma types-Snayu Marma.*

Prognostically- *Vaikalakara Marma.*

#### **Anatomical exploration (structures involved in region of Kakshadhara Marma)**

- Pectoralis major and Pectoralis minor.
- Subclavius.
- Axillary artery and vein.
- Part of brachial plexus.

#### ***VidhaLakshan<sup>[13]</sup>***

The incidence of trauma takes place in road accidents and Sports injury. Pedestrians also get injured. There are so many references from Vedas regarding attack on *Marma Sthana* of enemies and protecting one's *Marma* by wearing protectants. Even in today's fast life, it is very important to protect our *Marma Sthanas* because of heavy road traffic which results in accidents causing injury to *Marmas*. Developing Science invents new Military armaments increasing severity of injury during war.

If *Kshipra Marma* is injured it causes convulsions and death. *Kshipra* is *Kalantra pranahara Marma*. They are constituted predominantly by Soma (*Jala*) and Agni. Agni effects faster, whereas Soma (*Jala*) effects slowly, as a result the effected person may die within a month.



Other associated symptoms are *Dhatu kshaya* and *Kshayaj Vedana* (emaciation and pain due to emaciation.).

If *Kurcha Marma* is injured, it causes reeling and trembling of hand. Below wrist joint on both sides *Kurchashira Marma* is present; its injury causes pain and inflammation. If *Ani Marma* is injured it causes severe swelling and stiffness in hand. If *Kakshadhara marma* is injured it causes paralysis. *Ani, Kurcha and Kakshadhara* are *Vaikalyakara Marma*. *Vaikalyakara Marma* are considered by *Soma Guna*; by the effect of stability and *Sheeta Guna* (cold qualities), the *Soma (Jala) Dhatu* support the *Pranas*. Thus injury causes to deformity but rarely on severe injury may cause to death. Proper treatment by an efficient *Vaidya* may limit the risk to deformity only.

### According to *Astang Hridaya*

When *Snayu Marma* are injured, there will be bending of the body, convulsion, very severe pain, inability for riding, sitting etc, distortions or even death.

### Clinical importance of *Marma*

The knowledge of the *Marmas* constitutes half of the *Shalya*, as it is known that the person injured at the site of *Marma* does not survive Even if the person stays alive by good efforts made by an efficient Surgeon, definitely suffer from any kind of deformity.

Measurments of *Marmas* is quite important to a surgeon, as they should not be injured, further it is also helpful to omit the areas of neighbouring *Marmas* who may also produce severe hazards. *Marmas* contain *Soma (Kapha)*, *Marut (vata)*, *Teja (Pitta)*, *Sattva, rajas, tamas* and *Bhutatma (atma along with Bhuttas)*.<sup>[14]</sup> Hence, a Person, on injury to the *Marma* may not alive.

Any injury to the *Marma* causes death or deformity. Any pathological abnormalities develop at the sites of *Marma* will consequent to grave conditions, careful and precautions treatment of good physician may not help to cure the disorder. *Snayu* is considered as one of the site for the development of wound where healing is very difficult and delayed. Detailed knowledge of *Snayu Marma* is important from surgical point of view, Surgical procedures like *Agnikarma, Ksharkarma* and *Shastrakarma* are used as part of surgery, with proper knowledge of *Marma Sthana* we may perform the procedures without any complication.

## DISCUSSION

The prognosis of injury depends upon the site of injury, depth of injury, force at which the injury is caused. However the site and structures involved are the factor which discriminate the severity of the wounds.

The *kshipra Marma* can be sometimes turns into *Sadyopranahara* is mentioned by *Acharya Sushruta*. *Akshepaka* is one of the common symptoms of *Vaat Vikara* mentioned by *Acharya Sushruta* and *Vagbhata*. In *Akshepaka* the *Vayu* entering *Dhamani* causes severe spasm and convulsions in the individual. In this context *Dalhana* has interpreted *Dhamani* as *Nadi* which possibly indicates the involvement of nervous system in *Vaat Vyadhi*. It has been mentioned that if any injury occurs to the *Kshipra Marma*, then this will lead to severe blood loss which will further results in *Vata prakopa*.

The convulsions and spasm cause by an injury due to blood loss is resemble with the similar sign and symptoms found in tetanus such as *Aayam* (opisthotonos) which is mentioned in *Snayu vidhalakshan* by *Vagbhata* is similar to the symptoms occurred in tetanus. Any trauma or infection i.e tetanus to all structures related to *Kshipra Marma* may lead to loss of certain functions such as adduction and flexion of thumb. These all symptoms may relate with the *Kshipra Marma VidhaLakshan*.

Any Injury to all structures related to *Kurcha Marma* such as median nerve compression i.e Carpal tunnel syndrome produces pain and paresthesia in the sensory distribution of the median nerve any may impair coordination of the metacarpophalangeal and interphalangeal joints. These symptoms may relate to the *Kurch Marma vidhaLakshan*

Any injury to the structures in fracture of Scaphoid, tenosynovitis may lead to following deformities such as the swelling of the digits and their movements becomes painful, impairment of the extension/ flexion and abduction of the wrist and thumb, bleeding from the radial artery and pain due to injury to the radial nerve. These symptoms may relate to the *Kurchshira Marma*.

Any injury such as supracondylar fracture of humerus, intercondylar fracture of humerus, Elbow tendinitis or lateral epicondylitis (inflammation of musculoskeleton) may lead to inflammation and stiffness of the arm with following deformities such as extension/flexion of

the elbow. These all symptoms or deformity have very much close resemblance with the *Ani Marma Viddha Lakshana*.

Any injury to all structures which are related to *Kakshadhara Marma* such as compression of the trunk of the brachial plexus in aneurysm of axillary artery, injury to the upper trunk of the brachial plexus i.e, Erb's paralysis, injury to the lower trunk of the brachial plexus i.e, Klumpke's paralysis, axillary nerve injury due to shoulder dislocation, musculocutaneous nerve injury may lead to following impairments such as inability to flexion of elbow and depression of the shoulder joint, Nerve injury may lead to paralysis and wasting of the muscles of the arm.

## CONCLUSION

*Kshipra Marma* can be compared with the thenar space and its contents. Injury to these structures may lead to bleeding. If it is infected with tetanus then death occur due to convulsion. That's why it is counted under *Kalantrapranhara Marma*.

*Kurcha Marma* can be compared with flexors and extensor tendon of hand and intercarpal ligament. Injury to these structures may lead to reeling and trembling. That's why it is counted under *Vaikalyakara Marma*.

*Kurchashira Marma* can be compared with radial collateral ligament and transverse carpal ligament. Injury to these ligaments may lead to intense pain and swelling. That's why it is counted under *Rujakara Marma*.

*Ani Marma* can be compared with tendon of biceps brachii and triceps brachii. Injury of these structures may lead to mainly swelling and stiffness. That's why it is considered under *Vaikalyakar Marma*.

*Kakshahara Marma* can be compared with Brachial plexus. Injury to this may lead to paralysis of upper extremity. That's why it is considered under *Vaikalyakar Marma*. As all these Marmas having abundance of *Snayu* (tendons) that's why it is considered under *Snayu Marma* by the Acharyas.

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