

Conceptual Analysis of *Marma* Related to *Shalaky Tantra* - A Review and its Anatomical Significance

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ABSTRACT

Background: Ayurveda the ancient a science of life deals with all aspects of human life in a complex way. The knowledge of the *Marmas* or vital parts is explained in the *Sharira Sthana* chapter in the three major texts (*Samhita*) such as *Charaka*, *Sushruta*, and *Vagbhata*. All *Acharyas* emphasized on the *Marmas* but *Acharya Sushruta* has described them in detail. *Marma vigyana* is one of Ayurveda's unique theories wherein there is direct stimulation of *Prana* at *Marma Stana*. The body's *Urdhvajatrugata Bhaga* with respect to *Shalaky Tantra* has numerous *Marma*, which is crucial anatomical places located above the clavicle since damage to this area could be fatal to the body and its sensory organs. **Methods:** The data for this study were gathered from classical Ayurvedic texts, publications of research work, and review articles from indexed journals. **Results:** Systematic review revealed thorough understanding of anatomical basis of *Marmas* related to *Shalaky Tantra* and its potential applications in clinical, diagnostic, and therapeutic fields. **Conclusion:** Based on this literature review, it can be concluded that knowledge of regional anatomy allows better understanding of lesions with *Marma* since *Shalaky Marmas* can prove to be fatal if not dealt with utmost care.

Keywords: Anatomy, Marma, Prana, Shalaky Tantra, Urdhvajatrugata Bhaga, Vital points
Asian Pac. J. Health Sci., (2023); DOI: 10.21276/apjhs.2023.10.2.19

INTRODUCTION

Marma science is an important component of Ayurveda and may include vulnerable areas such as *Asthi* (bones), *Mamsa* (muscle), *Sira* (vessels), *Snayu* (ligaments, tendon, and other fibrous structure), and *Sandhi* (joints) which are the five main structures that come together to produce these areas.^[1] For surgeons, understanding *Marma* is crucial since any error made during an operation at a *Marma* site can result in the patient's death. *Marma* is also important in trauma perspective, as any trauma at these locations has the potential to result in death or in anguish comparable to that of death.

Ayurveda's *Shalaky Tantra* is a significant subdiscipline that focuses on the ailments of the *Netra* (eye), *Karna* (ear), *Nasa* (nose), *Mukha* (oral cavity), and *Shira* (head) and their treatment. The primary *Marma-Shira* and sense organs including the eyes, nose, ears, and tongue indicate its significance. The body's sensory organs perceive our senses and assist us in being aware of and responsible for our surroundings.^[2] We would not be able to respond normally without these sense organs, which will stop one's development.^[3] Therefore, maintaining the aforementioned sense organ's structural and functional integrity is crucial in *Shalaky Tantra* together with daily routine and seasonal routine.

ETYMOLOGY OF MARMA

When *Manin Pratyaya* is added to *Mri Dhatu*, the term *Marma* is created. It denotes a life location called *Jivasthana*. It implies that *Marma* is the location, the area, or the thing that is essential or mortal.^[4] It is the vulnerable spot or exposed or weak or open or sensitive part of the body.

DEFINITION OF MARMA

According to the definition of a *Marma*, "*Maryante Iti Marmani*," there is a chance of death or major health damage following injury to these crucial locations. A second definition of *Marma*

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How to cite this article: Satyavati, Fiaz S, Hanifa N. Conceptual Analysis of *Marma* Related to *Shalaky Tantra* - A Review and its Anatomical Significance. *Asian Pac. J. Health Sci.*, 2023;10(2):91-94.

Source of support: Nil.

Conflicts of interest: None

Received: 11/04/2023 **Revised:** 13/05/2023 **Accepted:** 01/06/2023

is as the anatomical region where arteries, tendons, flesh, veins, bones, and joints come together to produce the site of life.^[5] It has significant valves at these junctions. The anatomical areas where structures pulsate and where pain exists can be named as *Marma*.

ETIOPATHOGENESIS OF MARMAGHATA

Four *Sira* that carry *Vata*, *Pitta*, *Kapha*, and *Rakta* are located in *Marma* and provide nourishment for the entire body. Damage to these *Siras* can produce an excessive loss of *Rakta Dhatu* (blood), which can aggravate *Vayu* and raise *Pitta*, both of which can result in excruciating agony. *Pitta Dosha* imbalance causes symptoms such as thirst, dryness, lack of focus, giddiness, perspiration, and weakness in the body, size, and degree of injury (prognosis). Overall, they have categorized 107 *Marma*, compared to 108 in Tamil tradition and 324 in Kalari tradition.^[6]

Marma According to Site

The body contains 107 *Marma*, including *Shakha* (limbs) and *Skandha* (trunk and neck). There are 11 *Marma* points in each of the upper and lower limbs (*Bahu*), 11 in the chest (*Shakti*), 12 in the

abdomen (*Udara*), 14 in the back (*Prushta*), and 37 in the head and neck (*Urdhvajatrugata*).^[7]

Urdhvajatrugata Marma (Marma of Head and Neck - above Clavicle)

37 Marmas are present above the clavicle termed as *Urdhvajatrugata Marma* which is the domain of *Shalaky Tantra* of *Ashtanga Ayurveda*. *Urdhvajatrugata Marma* is divided on the basis of their location on the neck and head.^[8]

1. *Greeva Marma* (*Marma* of Neck) - 14

2. *Marma* of Head - 23

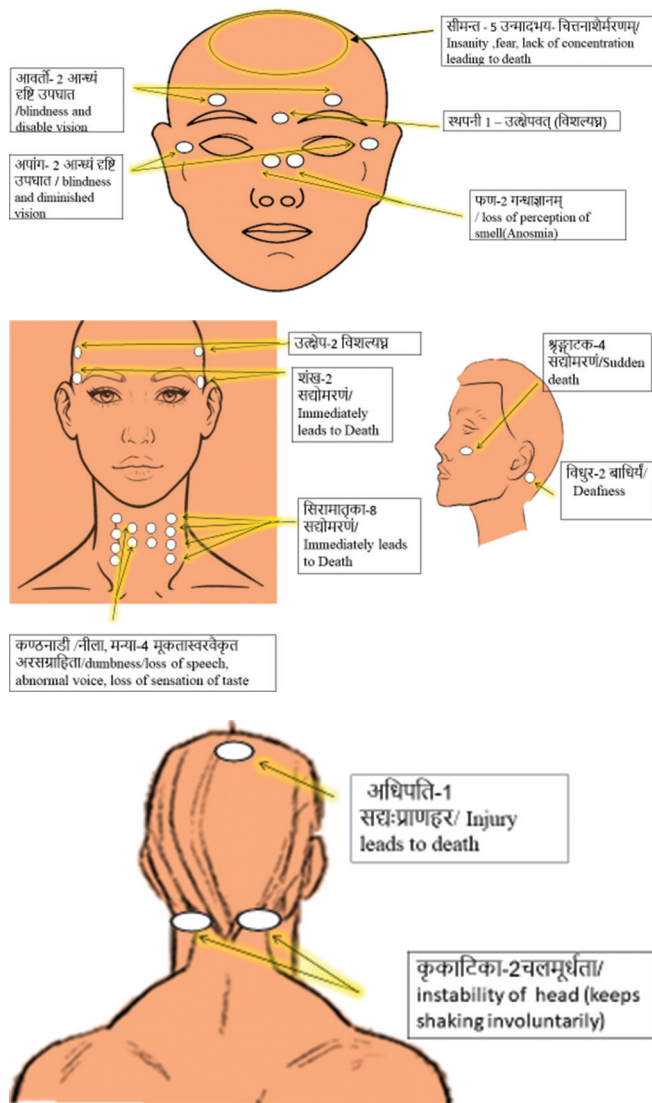
- *Krikatika* - 2
- *Matrakayan/Kanta sira* - 8
- *Dhamniyan* - 4 (*Nila* - 2 and *Manya* - 2)
- *Phana* - 2
- *Apanga* - 2
- *Avarta* - 2
- *Shankha* - 2
- *Vidhura* - 2
- *Utkshepa* - 2
- *Simanta* - 5
- *Sthapani* - 1
- *Adhipati* - 1
- *Shringataka* - 4

MARMAS OF URDHVAJATRUGATA^[9]

<i>Marma</i>	2 <i>Nila</i> and 2 <i>Manya</i>
Region	Neck
Number	2
Anatomical site	4 <i>Dhamanies</i> out of which 2 are <i>Nila</i> and 2 <i>Manya</i> situated in the neck on either side of <i>Kanathanadi/Matrika</i>
Size	4 <i>Angula</i>
Structural anatomy	<i>Sira</i>
Prognosis	<i>Vaikalyakara</i>
Injury signs	<i>Mookta</i> (loss of speech), <i>Swar Vikrit</i> (defective voice), and <i>Arasa Grahita</i> (loss of taste).
<i>Marma</i>	<i>Matrika</i>
Region	Neck
Number	Eight
Anatomical site	It is situated at the root/lower portion of the neck
Size	<i>Swapanitala</i> /4 <i>Angula</i>
Structural anatomy	<i>Sira Marma</i>
Prognosis	<i>Sadhya pranahara Marma</i>
Injury signs	It results to sudden death
<i>Marma</i>	<i>Krikatika Marma</i>
Region	Neck
Number	2
Anatomical site	At the junction of the neck and head.
Size	½ <i>Angula</i> (<i>Ardhangula Pramana</i>)
Structural anatomy	<i>Sandhi</i>
Prognosis	<i>Vaikalyakara</i>
Injury signs	Make the head unfixed or imbalanced.
<i>Marma</i>	<i>Phana</i>
Region	Head/nose
Number	2
Anatomical site	Lies internally and on the lateral side (olfactory region) of both nasal passages up to the <i>Sroto Marg</i> (cribriform plate of ethmoid bone).
Size	½ <i>Angula</i>

Structural anatomy	<i>Sira Marma</i>
Prognosis	<i>Vaikalyakara</i>
Injury signs	Anosmia (loss of sensation of smell)
<i>Marma</i>	<i>Vidhura</i>
Region	Head
Number	Two
Anatomical site	Situated behind and below the ear
Size	½ <i>Angula</i>
Structural anatomy	<i>Snayu</i> (A.H. - <i>Dhamani</i>)
Prognosis	<i>Vaikalyakara</i>
Injury signs	Deafness
<i>Marma</i>	<i>Apanga</i>
Region	Outer corner of the eyes
Number	2
Anatomical site	Lateral side of orbital fossa
Size	½ <i>Angula</i>
Structural anatomy	<i>Sira Marma</i> (Su.) <i>Snayu</i> (A.H)
Prognosis	<i>Vaikalyakara</i>
Injury signs	Blindness
<i>Marma</i>	<i>Shankha</i>
Region	End of eyebrow and between ear and forehead
Number	2
Anatomical site	Situated in between the ear and forehead
Size	½ <i>Angula</i>
Structural anatomy	<i>Ashti</i>
Prognosis	<i>Sadhya pranahara Marma</i>
Injury signs	Sudden death
<i>Marma</i>	<i>Avarta</i>
Region	Head
Number	2
Anatomical site	Situated above and in the middle of the eyebrows or superciliary arches
Size	½ <i>Angula</i>
Structural anatomy	<i>Sandhi</i>
Prognosis	<i>Vaikalyakara</i>
Injury signs	Blindness
<i>Marma</i>	<i>Utkshepa</i> (upward to the <i>Shankha</i>)
Region	Head
Number	2
Anatomical site	Situated above the <i>Shankha Marma</i> (behind the upper border of the helix of ear)
Size	½ <i>Angula</i>
Structural anatomy	<i>Snayu</i>
Prognosis	<i>Vishalyaghna</i>
Injury signs	Will cause severe hemorrhage Patient survive until the foreign body is inside, in course of time, it get fall down itself if it is pulled out initially than it will lead to death of the patient.
<i>Marma</i>	<i>Sthapani</i>
Region	Head
Number	Single
Anatomical site	In between the eyebrows
Size	½ <i>Angula</i>
Structural anatomy	<i>Sira</i>
Prognosis	<i>Vishalyaghna</i>
Injury signs	Same as <i>Utkshepa</i>
<i>Marma</i>	<i>Adhipati</i> (lord of all)
Region	Head
Number	Single
Anatomical site	Top of the cranium lies just under the <i>Romavart</i> (ringlet of the hair).
Size	½ <i>Angula</i>
Structural anatomy	<i>Sandhi</i>
Prognosis	<i>Sadhya pranahara</i>
Injury signs	Immediate death
<i>Marma</i>	<i>Shringataka</i>

Region	Head
Number	4
Anatomical site	Situated at the meeting point of confluences of <i>Siras</i> providing nutrition to tongue, nose, eyes, and ears.
Size	4 <i>Angula</i>
Structural anatomy	<i>Sira</i>
Prognosis	<i>Sadhya pranahara</i>
Injury signs	Immediate death
<i>Marma</i>	<i>Simanta</i>
Region	Head
Number	Five
Anatomical site	Sutural joint in the skull
Size	Four <i>Angula</i>
Structural anatomy	<i>Sandhi</i>
Prognosis	<i>Kalantara Pranahara</i>
Injury signs	Injury to them causes Unmad, Bhaya, and Chittanasa.



The following image represents each Marma diagrammatically.

DISCUSSION

The clinical significance of Marma points is the stimulation of these vital points in various disease conditions. However, it is not possible

to stimulate all the mentioned points. Therefore, physician should meticulously choose the points for Marma therapy according to the pathogenesis site, extent, and severity of disorders. For example, in a case of Migraine, it is not feasible to stimulate all the Marma of head and neck. The *Shringataka* and *Simanta Marma* are difficult to energize and its practically not applicable.

Underlying Important Anatomical Structures and their Applied Anatomy^[10,11]

- i. *Neela Marma* - It is located in the neck on the either side of *Kanathanadi* (windpipe) adjacent to *Manya Marma*. Anatomically structure presents carotid artery, anterior Juglar vein, accessory nerve, primary rami of the 4th, 5th, and 6th cervical nerves.
- ii. *Manya Marma* - It is located in the neck on the either side of *Kanathanadi* (windpipe) adjacent to *Neela Marma*. It contains glossopharyngeal nerve, lingual nerve, and accessory nerve. Tissue involved of external carotid artery, anterior jugular vein.
- iii. *Matrika* - These are *Sira Marma*, totally eight in number located four on each side of the neck. They extend to a length of four-finger width. In *Ashtanga Hridaya Samhita*, the location of this Marma is seated to be in *Jivha* (tongue) and *Nasa*. The structures present are branches of common carotid artery, middle ear, thyroid, tongue, tonsil, internal ear, vagus, and phrenic nerve.
- iv. *Krikatika Marma* - This is *Sandhi Marma* measuring half finger width located at meeting point of head and neck. It contains atlanto-occipital joint. Vertebral artery and vein. Rectus capitis lateralis and rectus capitis anterior muscles.
- v. *Phana* - It is located on either side of the *Ghranamarga* (nose) interiorly and attached to nasal passage. Branches of olfactory nerves and facial nerve, orbicularis oris, and levator labii sup. Muscles. Nasal, frontal, and ethmoid bones. If olfactory area is damaged results in anosmia (loss of smell). Infection from the nose may spread through the meningeal sheaths to the brain and intracranial complications and meningitis, encephalitis may occur.
- vi. *Apanga* - It is located behind and below the tail of eyebrow on either side of head near outer cantus. It may correspond to anastomosis of inferior orbital arteries and 6th cranial nerve. It is the drainage to the superficial parotid lymph glands, optic and ciliary nerves, sphenoid, maxillary, and zygomatic joints.
- vii. *Vidhura* - It is situated behind and below the ear retroauricular on either side of the head. It contains facial nerve, great auricle nerve, and auditory nerve. Basilar and posterior auricular artery, post-auricular vein.
- viii. *Shankha* - It is situated above the end of eyebrow and between ear and forehead, measuring to a length of half finger width. It contains temporal and internal carotid artery, temporal vein, drainage to the superficial parotid glands, facial, and chorda tympani nerve.
- ix. *Utkshepa* - This is situated above the *Sankha* (temple) near the ending of hairs on the scalp (*Keshantah*). It contains temporal, zygomatic temporal, and internal carotid artery. anterior temporal diploic vein. C2 and C3 nerves.
- x. *Sthapani* - It is located in between the eyebrow measuring half finger width. It covers anterior facial vein, superior sagittal sinus, drainage to submandibular lymph glands, supra orbital

- nerve, and frontal bone.
- x. *Simanta* - It includes parietal-frontal, parietal-temporal and parietal-occipital joints, occipital-frontalis muscle and epicranial aponeurosis, ophthalmic, maxillary and C2, C3 nerves, anterior superficial temporal, posterior superficial temporal, and occipital arteries.
 - xii. *Shringataka* - It is located at the Union of *Sira* supplying to the nose, eyes, ears, and tongue and measuring a length of four finger width. It contains frontal diploic vein and superior sagittal sinus, occipitofrontalis muscle, ophthalmic nerve.
 - xiii. *Adhipati* - It is located at the topmost portion of the body as a chieftain. This is corresponding to *Brahmarandhra* through when the soul leaves the body will be considered. Inside the forehead and superiorly is located the conjunction of *Sira Sandhi*, which is represented outwardly by spiral of hairs on the top of the skull where injury leads to death. It contains occipitoparietal joint, occipital artery, posterior diploic vein, and medulla oblongata and C2, C3 nerves.
 - xiv. *Avarta* - The term *Avarta* literally indicates the twisting to the curve of eyebrow so-called *Avarta Marma*. It includes frontal bone, sphenoid and frontal joints, levator superioris and superior rectus muscles, optic and frontal nerve, ophthalmic and supraorbital artery, superior ophthalmic vein.

Prana as the source of the *Tridosha* is the single most important factor in health and therapeutic treatment. Many Ayurvedic therapies work on the *Prana* of the patient in some manner striving to stabilize and harmonize its functions primarily through the three *Doshas*, and *Marma* therapy is the most direct method of harmonizing the *Prana* in the physical body (*Sthula Sharira*) of another person.^[12] *Marma* therapy supplements and supports all Ayurvedic therapies, increasing their effectiveness and ability to awaken the healing power of the body. *Marma* therapy plays a key role in bridging the gap between physical and subtle bodies of yogic science. This therapy is a multidimensional approach to health that includes the physical, energetic, and mental sheaths (*Annamaya, Pranamaya, and Manomaya Koshas*). Before initiating any treatment, it is essential to thoroughly gain the knowledge of all the *Marmas* in the body.^[13] *Acharyas* have very well elaborated the site, size, number, prognosis, and signs of injury of the *Marmas*. *Marmas* stimulation can play a crucial role in the treatment of different disorders. In cases of accidental injury, *Marmas* plays a key role in the prediction of prognosis. In *Shalaky Tantra, Siravedha* and *Agnikarma* at *Apanga Marma* and other *Marmas* of the forehead are mentioned to treat *Timira, Akshipaka, and Adhimantha*. The same can also be practically applied in *Marma* therapy. This therapy is of primary importance in self-care and self-healing.^[14]

CONCLUSION

Marma Science is an important component of in Ayurveda. There are *Marma* points present all over the body. A surgeon must have

a thorough understanding of *Marma* since even the smallest error during surgery might result in serious complications or even patient death. 37 *Marmas* - or 34.5% - of the total 107 *Marmas* are located above the collar bone (*Urdhvajatrugata*). These are primarily of the *Vaikalyakara, Sadyapranahara, and Kalantarapranahara* types and *Sira* and *Sandhi* type. The Ayurvedic meridian point system known as *Marma* corresponds to the body's organs, nerves, and systems. The *Prana* (life energy) can be directed to remove blockages and stimulate energy flow by stimulating *Marma* through the use of *Abhyanga* (massage), *Mardana* (Acupressure), Aromatherapy, Pranic healing, Herbs (*Lepa, Raktamokshan* (bloodletting), and *Agni karma*. This results in a healthy state of body, mind, and spirit. When combined with knowledge of regional anatomy, the practical application of *Marma* can work miracles in handling urgent problems. With this in mind, we demonstrate the validity of *Marma* related to *Shalaky Tantra* even though it was described more than 5000 years back.

REFERENCES

1. Pal PK, Saini N, Awasthi HH. Critical appraisal of Sira Marma with special reference to Vidhura Marma. Impact: Int J Res Humanit Arts Lit 2018;6:347-52.
2. Anup B. A Conceptual review of Vishalyaghna Marma. Int J Ayurvedic Med 2014;5:160-3.
3. Gowans S. Ayurveda for Health and Well-Being. Mumbai: Jaico Publishing House; 2004. p. 120.
4. Jain S, Dange M. Clinical importance of Marma w.s.r. To role in pathological condition: An Ayurveda review. Himalayan J Health Sci 2021;6:40-3.
5. Govindan SV. Massage Therapy for Diseases of Vital Areas: Marma Treatment. New Delhi: Abhinav Publications; 2005.
6. Rajendra KS. A way to understand the urdhvajadrugata marma related with Shalaky Tantra. Int J Ayu Her Med 2016;6:2378-82.
7. Tekam P, Marwaha R, Bhalerao N, Panda SD, Anand S. A conceptual study on Marma and its practical application in Chikitsa. J Ayurveda Integr Med Sci 2023;8:126-32.
8. Tripathi B. Ashtanga Hridayam. Reprint Edition. A.H. Sharira Sthana. Ch. 4. Verse 26-36. Delhi (India): Chaukhambha Sanskrit Pratishtan; 2015. p. 392-4.
9. Shastri KA. Sushruta Samhita. Part -1. Reprint edition. Su.Sharira Sthana. Ch. 6. Verse 28. Varanasi (India): Chaukhambha Sanskrit Sansthan; 2015. p. 75.
10. Lele A, Ranade S, Frawley D. Secrets of Marma the Lost Secrets of Ayurveda-a Comprehensive Text book of Ayurvedic Vital points. Ch. 9. Delhi: Chaukhamba Sanskrit Pratishtan; 2016.p. 77-89.
11. Kumar PA, Awasthi HH. Anatomy of Marma. 1st ed., Ch. 7-8. Varanasi: Chaukhambha Orientalia; 2014. p. 143-54,155-85.
12. Schrott E, Raju JR, Schrott S. Marma Therapy: The Healing Power of Ayurvedic Vital Point Massage. Vol. 2. United Kingdom: Singing Dragon; 2015. p. 88.
13. Nishteswar K. Science of marma (in ayurvedic diagnosis and treatment). Ayu 2015;36:113-4.
14. Frawley D, Ranade S, Lele A. Ayurveda and Marma Therapy: Energy Points in Yogic Healing. Vol. 2. New Delhi: Lotus Press; 2003. p. 32.