

ANATOMICAL STRUCTURES RELATED TO *STHAPANI MARMA* W.S.R. TO *SIRA MARMA*: A REVIEW

Pradeep Kumar Pal¹, Neera Saini², Mohd. Ashraf Khan Khar³ & H. H. Awasthi⁴

^{1,3}Research Scholar, Department of Rachana Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University,
Varanasi, Uttar Pradesh, India

²Assistant Professor, Department of Roga Nidana and Vikriti Vigyana, Dr. Vijay Ayurvedic College & Hospital, Varanasi, Uttar Pradesh,
India

⁴Professor and Former Head, Department of Rachana Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu
University, Varanasi, Uttar Pradesh, India

Received: 27 Feb 2019

Accepted: 05 Mar 2019

Published: 13 Mar 2019

ABSTRACT

Marma (Jivasthal) science is one element of Ayurveda gifted by Acharyas. It is not much developed in modern science. Marma is a vital point on the body surface, having importance regarding traumatic effect. Marma is a vital point where the injury occurs can lead to disability or even termination of life. Every aspect of Marma like definition, signs symptoms of Marma injury was thoroughly explained by Acharya Sushrut and also by various scholars. Not only the Marma but also the Marma Viddha Lakashana (effect of injury at Marma point) was documented by different Acharyas. Marma has the resemblance with the meridian system of Acupuncture and Acupressure system of treatment. On the basis of meridian point and flow of Prana Energy, a combination of vast structures related to Marma point i.e. Nerves, arteries, veins, bones, and their joints. Vishalagnya Marmas are totally 3 in number i.e. 2 Utkshepa and 1 Sthapani. Injury to these causes death due to forceful removal of Shalya from the injured site. Purpose of this review is the attempt to clarify the concept of Vishalagnya Marma (a type of Parinama) i.e. what is criteria behind to name Marma as Vishalyaghna (loss of Pranavayu). The aim of this study to clear the anatomical structures lies in the region of Sthapani Marma (the vital point between eyebrows). Try to find the relation and cause of death, after removal of foreign body and passage of Prana.

KEYWORDS: Marma, Prana, Artery, Vein, Sthapani, Brows, and Sinuses

INTRODUCTION

Marma knowledge and Marma remedy is an undamaged section of Indian Surgery. By the way of the searching of Marma science, the entire state of Indian Surgery may modify in multidimensional looms. As formerly Yoga was the means of realizing divine gains, and these days Yoga is also accepted as tool for the health support among the masses and the best mode to struggle most of the diseases from which man suffers, in the same way, the implementation of Marma therapy may help in different medical and surgical lesions in many ways¹. According to Ayurvedic text, Prana (Jivaniya Shakti/Vital energy)

situated naturally at these points. Acharya Sushruta (Ayurvedic surgeon of the ancient period) has described very nicely in a separate chapter known as Marma Sharira in Sharira Sthana.

Marma science is one of the most important among the hidden sciences of India. Anyone can attain a lot of mortal and immortal gains from Marma science. According to Ayurvedic texts, the Marmas are the points, when injured, may be life-threatening. Marmas are deep-seated significant physio-anatomical structures. The knowledge of Marma is the oldest hidden treasure of Vedic surgical skill. Many ancient saints got and spread the awareness of Marma and practiced this knowledge for the betterment of suffering humanity. In primeval times it was a secret science and only the emperor and warriors knew it. According to therapeutic definition, Marma points are the specific parts of the body, which are susceptible to trauma. Any injury to these places may escort to death and many other impediments regarding physio-anatomical functions. These places are known as vital parts and are also the source of energy. So injury should be avoided at these vital points. The awareness of Marma science is not acknowledged to the practitioners of Ayurveda till the present days. So this science cannot flourish like other specialties of Ayurveda². These Marmas are mentioned and discussed in Susruta-Samhita as anatomical consideration of different parts of the body. According to Dr. Ghanekar during the practice, it is also noticeable that any severe disturbance to these vital parts may become fatal. It is also a fact in reference to brain and heart³. Marma science is discussed in Susruta-Samhita chapter 6, in reference to anatomical consideration of the body parts. These vital points (Marmas) are the reserve center of energy so they should be protected very well during any surgical involvement or procedure. In different Ayurvedic texts, a lot of neurovascular and neuromuscular problems are discussed. The majority of these neurological tribulations come under the heading of Vataroga. These Vata disorders (80 types) can be treated by Marma therapy successfully⁴. The experts of Marma specialist (Ancient Rishis), developed the Marma science and therapy for the service to humanity and are seekers of achieving the higher state of awareness. The Practice of Yoga, Pranayama and other physical exercises will not be possible due to blockage or obstacle in Marma channels (Nadis and Srotas). Without cleaning of these Marma channels, enables to attain physical well-being, mental calmness, spiritual gains, and self realization⁵.

The anatomical regions belonging to the juncture of Mansa, Sira, Snayu, Asthi, and Sandhi is known as Marma. It is also known as jivasthana and Pranayatana. The medical procedure of acupuncture and acupressure anesthesia is based on the concept of Marma martial arts. According to Susruta Samhita, due to the injury of Mansa Marma, there may be a loss of touch sensation. Under the guidance of this information, local anesthesia can be produced by exasperating the Mansa Marma. According to Maharsi Susruta, there are 107 Marmas in the human body⁶. These are very important vital places. Any injury to these parts may lead to severe pain, disability, loss of function, loss of sensation (anesthesia) and death. On the structural basis, Marma can be divided into five basic anatomical constitutions. Mansa Marma (Pesi), Sira Marma (nerve, artery, and vein), Snayu Marma (tendons and ligaments), Sandhi-Marma (joints and junctions), and Asthi Marma (bony structures) respectively. They can be categorized into Saumya, Vayavya, Agneya and Saumyagneya Marmas. According to the site, Marmas are situated at Udara (thorax and abdomen), Prishta (back), Shakha (extremities) and Urdhvajatru (neck and head) region⁷. Each extremity among the four has eleven Marma points. So in both upper and lower extremities have a total of 44 (11x4) Marma points. Twelve Marma points are lies in the thorax and abdomen. Fourteen Marma points are present in the back. Thirty-seven Marma points are located above the clavicular region (neck and head)⁸.

Sira i.e. the chief conducting system of the body carrying body essences like Vata, Pitta, Kapha, and pure blood are aligned to the Marma bases. Twelve Prana that is described by Acharya Susruta is three Sharirika Doshas (Vata, Pitta, and Kapha), three Manasika Doshas (Satva, Raja and Tama), Panchaendriya (five sensory organs) and Bhutatma (Chetana)⁹. All are distributed in the whole body and compose the structural and functional entities of the body. The loss of all or any one of them may cause death. So it is said that when a Marma is injured, such vessels and nerves are cut, causing excessive bleeding and stagnation of all such elements in the body. Vata then vitiates and excites Pitta, bringing on various reactions which become fatal. Disturbance in the anatomical and physiological aspects of various organ system depends on the proportion of injury over Marma points. If the impact on the Marma is not heavy, the vessels may not be badly injured. In this topic author concern mainly Sthapani Marm¹⁰.

Vishalya means not a fatal one up to the elimination of the Shalya (foreign body) i.e. the person will survive till the taking away of the foreign body. In this framework, Acharya Sushruta tries to highlight on the thought that without removing forcefully the foreign body the person can survive. The chance of survival becomes strong when it stays and drops itself after Paka (suppuration). The Vishalyaghna Marmas are the predominance of Vayu Mahabhuta. Totally three Vishalyaghna are present in the body¹⁰. There are

Two Utkshepa Marma and one Sthapani Marma

Position- According to Acharya Susruta it is lies between both the eyebrows or at the center of superior ciliary arches in the forehead of the face.

Region – it is lies at frontal region of the head just above to base of the nose.

Number- One in number

Type of Marma- Sira Marma (Susruta)

Size- Ardha angula Pramana

Prognostic value- Vishalagnya Marma, external removal of Shalya becomes the cause of death.

Traumatic results- injury at the site of this Marma becomes the cause of death. Patient survives until the foreign body is inside and in course of time it gets fall down itself after maturation. If foreign body pulled out initially then it will lead to the death of the patients. It is predominantly Sira Marma (vascular vital point) in nature, so an injury to surrounding blood vessels is common. The deep injury causes severe damage to brain¹¹.

DISCUSSIONS

Dr. G.B. Ghanekar considered the place of Sthapani Marma, at the site of glabella. At this area, the belonging structures are a frontal vein, nasal arches, frontal sinuses, and cavernous sinuses.

Prof. H. P. Sharma resembles these structures with frontal emissary vein as the chief belonging structures of this Marma.

In the view of Dr. Patil, anterior facial vein should be the main structure lying at the area of Sthapani Marma.

The anatomical structures related to the Sthapani Marma are-

- Frontal bone
- Cavernous sinus
- Anterior facial vein
- Superior Saggital sinuses
- Supraorbital nerve
- Supraorbital artery and vein
- Supratrochlear artery and vein
- Third ventricle

On the basis of various commentators and concern from various modern literature, the region of Sthapani Marma lies at the glabellar region. Muscles present at this point are frontalis & procerus. supratrochlear artery, supratrochlear vein & supratrochlear nerve lie in front of it. Supratrochlear artery lies slightly deep within this area & then it runs upwards by giving the subcutaneous branches to the skin of the forehead. It also supplies to frontal bone. Frontal vein (supratrochlear vein) gets begin from the venous plexus that communicates with the front branches of the superficial temporal vein¹². The veins united together to form a single trunk which runs downward near the middle line of the forehead parallel with the vein of the contrary side. The two veins are joined at the root of the nose, by the transverse branch called the nasal arch. It also receives some small veins from the dorsum of the nose. At the root of the nose veins, diverge each side at the medial angle of the orbit, joins with the supraorbital vein to form the angular vein. Infrequently single trunk formed by the ventral veins and get bifurcate at the root of the nose into two angular veins¹³.

Sthapani Marma is the Vishalgnya Marma which is directly related to Prana Vayu (a type of air element responsible for life). Direct relation of cavernous sinus with Sthapani Marma and chance of spread of infections through the infected wound are common. This involves the brain, spinal cord, and other important living organs of the body¹⁴.

The frontal air sinus for obvious regions vulnerable to injury may bleed due to a torn mucous membrane; even through the skin of the forehead is intact. The infected clot may produce sinusitis or more serious complications as the extradural abscess. The fracture of the posterior wall also leads to fatal complications as the involvement of dural tear infected air may involve also the meninges and meningeal spaces. This is the evidence that frontal air sinus injury (behind the glabella) has frequent chance to become dangerous and may involve duramator, with its dural sinuses, may also cause bleeding and leaking of cerebrospinal fluid through nose¹⁵. Sthapani Marma (the vital point between eyebrows) is explained on the dominance of Vayu (dominancy of air element). At this site vitiation of the air element occurs easily. Ultimately Pranavayu (the type of air element responsible for life) gets vitiated as this is the main functional vayu (air element) in living body results in the death of a person. Removal of weapon from Sthapani Marma (vital point between eyebrows) also causes the same phenomenon & vitiates Prana (the type of air element responsible for life) causing the death of a person. Any weapon penetrating deep to glabella may also damage brain tissue & meninges causing death or dementia¹⁶.

Structures come under this superficial and deep fascia, occipitofrontalis muscle, frontal bone, and glabella and can also be considered up to sagittal sinus. Injury to one-third of sagittal sinus can be treated by packing or by ligating the anterior one-third of the superior sagittal sinus. Any deep trauma at this site may require micro-surgical revamp which can be enormously tricky in a given condition, hence any depressed bony wreckage, and other foreign bodies, involving dural sinuses also should not be removed¹⁷⁻¹⁸.

Resemblance of Sthapani Marma Ajna Chakra

The literal meaning of the Chakra is spinning circle or wheel. In the Yogic and tantric literature, a better translation is 'vortex' or 'whirlpool' (energy circulating centers). The Chakras are vortices of Pranic energy at specific areas in the body which control the circulation of Prana (vital forces) permeating the entire human structure. Concentration on these Chakras while performing Yogic practices stimulates the flow of energy through the Chakras and helps to activate them. According to modern scholar, these Chakras are belonging with neuronal plexus and ganglion of the autonomic nervous system and the plexus of visceral organs present around the vicinity region¹⁹.

According to Gauraksha Paddhati, Six Chakras are lies in the form of Padam (lotus). There are seven Chakras are mentioned from base to top of the brain. They are lies in sequence at the region of the base of the vertebral column to the level of the brain. Started with Muladhar Chakra at the base and ended by Agya Chakra between both the eye-lashes. Muladhar at Guda region (anus), Swadhisthan behind Medra region (genital organs), Manipur Chakra at Nabhi region (umbilical), Anahat Chakra at Hridaya region (heart), Vishuddha Chakra at Ghatika and Lambika region (Kantha), and Agya Chakra at Bhru Madhya (center between both the eye brow)¹⁸. Agya Chakra is situated in the midbrain, behind the eyebrow center, at the top of the spine. This center is also known by various names such as the Third eye; Gyan (Wisdom) Chakshu, the eye of wisdom; Triveni (the confluence of three rivers); Guru Chakra and the Eye of Lord Shiva. The word Agya (Order or Motor functions) means 'Command'. Through the Agya Chakra disciple can receives commands and guidance from the Guru and from the divine or higher self during the deeper states of meditation. Agya Chakra corresponds to the pineal gland, which has almost atrophied in the adult human being. On the psychic plane, this point is the bridge between the mental and psychic dimensions. Therefore, Agya Chakra is also responsible for regulation of supramental faculties such as clairvoyance, clairaudience, and telepathy²⁰.

Treatment Aspects over Sthapani Marma

Apply Marma massage to this region using strong circular acupressure motion about 5-10 minutes can calm and focus the mind. Also for activation of Agya Chakra and treating the disorders related with this Chakra and Prana Vayu, massage with Dhanvantar Tail, Ashwagandha Tail, Til Tail, May done. This is a good site to apply Sirodhara (focusing oil drip over Bhru Madhya) to improve arterial and venous drainage and also activates the conduction of nerve impulse. Application of

sandalwood oil and paste promotes meditation capacity, relaxes the sympathetic activity. If apply along with acupressure and massage over this point may rely stress over the entire body and mind. To overcome the traumatic effect of Sthapani Marma, Nasya (nasal drop application) of Brahmi juice and aloe gel, turmeric preparations pain use for haemostatic and immunity purpose also for relieving pain and stress too. This can do a cleaning of nasal passage to maintain the flow of Pranavayu by which this can perform its functions²¹⁻²².

CONCLUSIONS

On the basis of this though study it may be concluded that at the site of Sthapani Marma anatomical dominance of vascular system occurs. The anatomical structure related to Sthapani Marma is - Supratrochlear artery and vein, supraorbital artery and vein, supra and infratrochlear nerve, supraorbital nerves, frontal sinus, superior sagittal sinus, cavernous sinus, and lateral ventricles.

REFERENCES

1. Joshi Sunil Kumar, *Marma science and principles of Marma therapy*, Vani Publications Delhi, First Edition August 2010.
2. Joshi Sunil Kumar, *Marma science and principles of Marma therapy*, Vani Publications Delhi, First Edition August 2010.
3. Behera Sunita¹ and Chanana Amrisha, *An anatomical concept of marma*, www.wjpr.net Vol 7, Issue 18, 2018. 715
4. Pathaka Ashutosh Kumar, *Anatomy of Marma* Chaukhambha Orientalia Publishers, Varanasi, 2014.
5. Joshi Sunil Kumar, *Marma science and principles of Marma therapy*, Vani Publications Delhi, First Edition August 2010.
6. Pradeep Kumar Pal, Neera Saini & H. H. Awasthi, *Critical appraisal of sira marma with special reference to Vidhura Marma*, *Impact: International Journal of Research in Humanities, Arts and Literature* Vol. 6, Issue 6, Jun 2018, 347-352.
7. <https://www.ayurveda.com/pdf/Marma-points-pbk-excerpt.pdf>.
8. *Marma Therapy: Discover 107 Secret Healing Points* (<https://www.artofliving.org/in-en/ayurveda/therapies/Marma>).
9. Dr. Bhaskar Govind Ghanekar, *sushrut sharir sthan, ayurved sandipika hindi vyakhya*, 3rd edition 1997, meherchandre lakshmandas(sanskrit) 6/44:page no.-202.
10. Dr. Bhaskar Govind Ghanekar, *sushrut sharir sthan, ayurved sandipika hindi vyakhya*, 3rd edition 1997, meherchandre lakshmandas(sanskrit) 6/44:page no.-204.
11. *Sharir Sthana, Susruta Samhita Purvardha, Ayurveda Tatvasandipika, Hindi Vyakhya* by Ambika Dutt, Chaukhambha Publication Varanasi, 2008.

12. Athawale, Vaidya P.G., Drastartha Shariram, Nath Pustak Bhandar, railway road, Rohtak, third edition, 1992 P-471-490
13. Mehra Rakhee, Significance of Ayurvediya Marma- Vital Body Points, readworthy publication, A-18 Mohan garden, New Delhi, first edition 2008.
14. Bhosgikar Anup, A Conceptual Review of Vishalyaghna Marma:Review article, International Journal of Ayurvedic Medicine, 2014, 5(2), 160-163.
15. Dravid Frawley, Subhash ranaday, Ayurveda and Marma Therapy, lotus press, AMT twin lakes, WI 53181USA May 2002.
16. Prof. Mishra J. N., Marma and its management, Chaukhambha Orientalia Publishers, Varanasi, 2005.
17. Dr. Smita Rajanna Gotipamul and Dr. Atul Mankar, a review on clinical importance of marma according to Ayurveda, world journal of pharmaceutical And medical research, 2018,4(2), 89-91.
18. Manish Prakashrao Zate 1, Milind Ahilaji Sadgir 2, Pallavi Bharat Khandare, A review on anatomical structures present at sthapani marma With special reference to ayurvedic & modern view point, Manish Prakashrao Zate et al / Int. J. Res. Ayurveda Pharm. 8 (6), 2017.
19. Pal Pradeep Kumar Pal, MD Thesis- A neuro anatomical study of Agya Chakra and its clinical significance, Faculty of Ayurveda, IMS, BHU Varanasi, 2016.
20. Pal Pradeep Kumar, anatomical concept of Chakra and energy system, Chaukhambha orientalia publication, edition 1st 2017.
21. Dravid Frawley, Subhash ranaday, Ayurveda and Marma Therapy, lotus press, AMT twin lakes, WI 53181USA May 2002.
22. Dravid Frawley, Subhash ranaday, Ayurveda and Marma Therapy, lotus press, AMT twin lakes, WI 53181USA May 2002.

