



# CONCEPTUAL UNDERSTANDING OF STHAPANI MARMA

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## ABSTRACT

Marma are the vital points present in the human body explained in different Ayurveda Classical texts. Marma is the vital area or vulnerable point of body and it is the site of Prana, the jivatma lies in the region of Marma. It is the site of confluence of Mamsa, Sira, Snayu, Asthi and Sandhi. It is also known as Jivasthana and Pranayatana. These are the certain anatomical locations in the body which are vital in sense, that any injury to these parts shall be painful and cripple the local functions or even lead to sudden death of the individual. Sthapani Marma is one among the 107 Marma explained by Acharyas, located in between eyebrows at the region of Glabella. It measures about half angula and is categorized as a Sira Marma. Injury to this, the patient survives till the foreign body is at the site and will die as soon as the foreign body is removed. A person can survive only if the foreign body has dropped by itself after paaka. This article provides details about the location, structural components and measurements of the Sthapani Marma. Furthermore, it explains the consequences of the injury to this marma, emphasizing its role in sustaining life. Through this article, the structures underlying the Sthapani marma can be explored.

## INTRODUCTION

Marma science, an integral part of Vedic literature, finds its earliest mention in the Rigveda. Over time, this knowledge evolved progressively—from the Saraswati civilization through to the Samhita period. The concept of Marma Sharir (vital points of the body) is uniquely and extensively detailed in the Sushruta Samhita, where it holds critical importance, accounting for nearly half of the domain of Shalya Chikitsa (surgical practice) and its practices in Martial arts in some parts of India and in controlling the animals like elephants, horses.<sup>1</sup>

Marma are the vital points present at the human body where prana resides.<sup>2</sup> These Marma points are considered vital and must be carefully preserved during surgical procedures. Most Ayurvedic Acharyas agree that there are a total of 107 Marma points in the human body. The Acharyas have classified Marma points into various categories based on different criteria, including regional location, structural dominance, and the effects of injury.<sup>3</sup> Among these, regional classification divides Marmas into four main groups: Urdhvajatrugata (located above the clavicle), Uro Udargata (located in the abdominal region), Shakhagata (located in the limbs), Prishthagata (located on the back).<sup>13</sup> Of these, the Urdhvajatrugata Marmas number 37, and one notable example from this group is the Sthapani Marma.

## REVIEW OF LITERATURE

### Etymological description of Word Sthapani

The term Sthapani means the thing by which anything is made stable. Yogins considered Sthapani as a very sensitive part for “Dharana”.

Amarakosha: while explaining Kurcha, meaning of Kurcha “भ्रूमध्यम्” – In between eyebrows, is the location of Sthapani.<sup>7,8</sup>

### Panchavidha Classification of Sthapani Marma

Rachananusara – Sira Marma<sup>9</sup>

Location- Urdhvajatrugata

Parinama – Vishalyaghna Marma<sup>11</sup>

Pramana – ½ Angula<sup>6</sup>

Sankhya – 1 in number<sup>4,5</sup>

### Review of Literature related to Sthapani Marma

#### According to Acharya Sushruta,

The location of the Sthapani Marma is in between the eyebrows.<sup>7,8</sup> Injury to this causes death due to the forceful removal of Shalya from the injured site.<sup>10</sup>

#### According to Astanga Hridaya and Astanga Sangraha

Sthapani Marma is situated in Bhruvor madhye. Injury to this causes death due to forceful removal of Shalya from the injured site. If the Shalya retains in the injured site, the person will be alive and if it gets suppurated and falls on its own then also the person will be alive.<sup>12</sup>

#### As per Recent Authors

Dr Ghanekar has considered it Glabella, here frontal veins are found joining the sinus lying behind it.<sup>15</sup> Dr Phatak and Ghanekar opines, injury of this region causes excessive bleeding from frontal veins and nasal arch leading to death,<sup>16</sup> if the Shalya is taken out immediately from the site of injury. They suggested Frontal emissary veins, which are connected to cavernous sinus.<sup>17</sup>

Dr Ghanekar has considered Glabella as bony landmark and also has referred to Frontal air sinuses.<sup>18</sup>

Pandit Sharma explained frontal emissary veins. Dr Patil suggested anterior facial veins (at its commencement points).



They are situated within half an angula, and deeper structures like frontal sinus, superior sagittal sinus, falx cerebri are probable causes.<sup>19</sup>

## REVIEW AS PER CONTEMPORARY SCIENCE

From outside to inside the structure are:

**Skin:** Skin of the forehead is the thickest facial skin and thickness generally ranges from 1.2 to 1.7 mm.

**Fascia:** superficial fatty layer, and deeper muscular components.<sup>22</sup>

**Procerus Muscle:** a small, pyramidal muscle located in the glabella, the area between the eyebrows on the forehead. It's a muscle of facial expression, involved in movements like frowning and expressing attentiveness. It originates from the nasal bone and lower part of the lateral nasal cartilage, and inserts into the skin of the lower forehead, between the eyebrows.<sup>20</sup>

**Bones:** Frontal bone, is a shell-shaped, unpaired, flat bone of the skull located in the forehead region. The frontal bone consists of six main parts: the squamous part, nasal part, two orbital plates and two zygomatic plates.<sup>21</sup>

## Cranial and Intracranial Veins

### Diploic Veins:<sup>23</sup>

Diploic veins occupy channels in the dipole of some cranial bones and are devoid of valves. They are large, with dilatations at irregular intervals; their thin walls are merely endothelium supported by elastic tissue. Radiologically, they may appear as relatively transparent bands 3-4 mm wide. Absent at birth, they begin to develop with the dipole at about 2 years. Recognizably available channels are:

- A frontal diploic vein
- An anterior temporal (parietal) diploic vein
- A posterior temporal (parietal) diploic vein
- An occipital diploic vein

### Meningeal Vein

Meningeal veins begin from plexiform vessels in the dura mater and drain into efferent vessels in the outer dural layer which connect with lacunae of the Superior Sagittal Sinus and with other cranial sinuses, including those accompanying the middle meningeal arteries and with diploic veins.<sup>22</sup>

## Cerebral and Cerebellar Veins

The veins of the brain have no valves; their thin walls have no muscular tissue. They pierce the arachnoid mater and the inner dural layer to open into the cranial sinuses. They comprise cerebral and cerebellar veins and veins of the brainstem.<sup>23</sup>

The cerebral veins, external and internal, drain the surfaces and the interior of the hemispheres.

## Dural venous sinuses<sup>22, 23</sup>

Dural venous sinuses form a complex network of venous channels that drain blood from the brain and cranial bones. They lie between the endosteal and meningeal layers of dura mater, are lined by endothelium and have no valves; their walls are devoid of muscular tissue. They develop initially as venous

plexuses; most adult sinuses preserve a plexiform arrangement (to a variable degree), rather than being simple vessels with a single lumen. Plexiform arrays of small veins adjoin the superior and inferior sagittal and straight sinuses, and, less frequently, the transverse sinuses; ridges of 'spongy' venous tissue, known as venous lacunae, often project into the lumina of the superior sagittal and transverse sinuses. The structure of cranial venous sinuses, their plexiform nature and their wide connections with cerebral and cerebellar veins vary considerably, particularly in earlier years, e.g. in infancy the falx cerebelli may contain large plexiform channels and venous lacunae that augment the occipital sinus. These variations must be established for the individual by catheter-based angiography, magnetic resonance (MR) venography or computed tomographic (CT) venography, when clinical necessity arises. The existence of arteriovenous shunts has been inferred from the demonstration of a connection between the middle meningeal arteries and the superior sagittal sinus. Dural arteriovenous fistulae are thought to be acquired lesions that form in an area of thrombosis within a sinus. If the sinus remains completely thrombosed, venous drainage from these lesions takes place through cortical veins, or, if the sinus is partially open, venous drainage is usually into the involved sinus. When the sinus remains closed, the elevated pressure within the cortical veins receiving the arterial flow carries the risk of haemorrhage. The named sinuses are the superior and inferior sagittal, straight, transverse, sigmoid, occipital, cavernous, intercavernous, superior and inferior petrosal, sphenoparietal, basilar and marginal.

## Superior Sagittal Sinus<sup>23</sup>

The superior sagittal sinus runs in the attached convex margin of the falx cerebri. It grooves the internal surface of the frontal bone, the adjacent margins of the two parietal bones and the squamous part of the occipital bone. It begins near the crista galli, a few millimetres posterior to the foramen caecum, and receives primary tributaries from cortical veins of the superior part of the frontal, parietal and occipital lobes, and from the anterior part of the orbital surface of the frontal lobe. The sinus is triangular in cross-section, with the apex directed downwards and continuous with the falx cerebri. Its lumen is invaded in its intermediate third by projections from its dural walls, which may divide its lumen into superior and inferior channels. It is narrow anteriorly, and widens gradually to approximately 1 cm in diameter as it runs backwards. At its posterior end, the sinus enters the confluence of the sinuses (also known as the torcular herophili or the torcula, although the term actually describes the bony gutter in which the confluence lies), which is situated to one side (usually the right) of the internal occipital. At the confluence of the sinuses, the superior sagittal sinus usually deviates to become continuous with the right transverse sinus, but it also usually connects with the occipital and contralateral transverse sinuses. The size and degree of communication of the channels meeting at the confluence are highly variable; any sinus involved may be duplicated, narrowed or widened near the confluence. There are usually two or three lateral venous lacunae on each side of the midline, named frontal (small), parietal (large) and occipital (intermediate) lacunae; they tend to become confluent in the elderly, producing a single elongated lacuna on each side. Fine fibrous bands cross the lacunae, and numerous arachnoid granulations project into them. The



lacunae mainly drain diploic and meningeal veins. The cortical veins typically pass beneath the lacunae on their way to the sinus. The largest cortical vein that connects the superficial Sylvian (middle cerebral) vein and the superior sagittal sinus is the superior anastomotic vein (vein of Trolard); it often runs in the precentral, central or postcentral sulci. Near its posterior end, the superior sagittal sinus receives veins from the pericranium that pass through parietal foramina. Acute and complete thrombosis of the superior sagittal sinus is an extremely severe condition causing acute elevation of the intracranial pressure and herniation. Slow and progressive occlusion of the sinus, as is typical for sagittal meningiomas, may be compensated by the development of collateral venous drainage with no clinical consequences.

## DISCUSSION

The term Sthapani means thing by which anything is made stable. It is one in number and located in between eyebrows with the dimension of  $\frac{1}{2}$  angula.

Based on the structural entity described as Sira the vital vessels, that are present in the Glabella region should be considered. As per classics Sthapani Marma is Sira Marma. According to Acharya Charaka, Sira is the structure that carries substances from one place to another place. According to Gangadhara, that which carries the Rasa etc is called as Sira. According to Atharva Veda, Sira is that which carries Ashuddha Rakta (deoxygenated blood). Though, Sira is the term mainly used to denote the vein, Sushruta has used the term in different contexts in Sushruta Sutra, Nidana, Chikitsa sthana and in Uttara tantra. Sira is mostly interpreted with blood vessel instead of using the terms Dhamani and Srotas. In Charaka Vimana Sthana, there is a reference of Dhamani and Srotas as synonyms of Sira.

As per classics Pramana of Sthapani Marma is  $\frac{1}{2}$  Angula. The Sthapani Marma is a vascular entity and arteries and veins present in the glabella region can be taken as the Sira here and it is considered as the vessels present in the vicinity of  $\frac{1}{2}$  Angula Pramana. Injury to this causes death due to forceful removal of *Shalya* from the injured site. This shows that the Superior Sagittal Sinus need to be considered as sagittal sinus is opened during surgery, air can be sucked immediately into this vein; the air may even pass downward to cause air embolism in the heart, so that the heart valves will not function satisfactorily, and death can ensue.<sup>24</sup>

## CONCLUSION

Sthapani Marma, located between the eyebrows and measuring  $\frac{1}{2}$  Angula, is classified as a Sira Marma—associated with vital blood vessels. Classical texts describe Sira as channels carrying essential fluids like Rasa and Rakta, often equated with veins. Anatomically, this region aligns with the glabella, where critical vessels and the superior sagittal sinus lie. Injury to Sthapani Marma can be fatal, as it may lead to air embolism through venous exposure, confirming the classical view of it being a Vishalyaghna Marma. This aligns with the classical ayurvedic view of Sthapani Marma, as a life-threatening point where trauma could disrupt essential bodily functions. Thus, the traditional concepts of this marma points reflects the deep anatomical and physiological understanding showing how

ancient knowledge anticipated key vascular landmarks recognised by contemporary science. This re-enforces the clinical significance of protecting this region during surgical or traumatic events.

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