



# A COMPREHENSIVE STUDY OF ASTHI MARMA W.S.R TO SHANKHA MARMA

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## ABSTRACT

*Marma* is described as the vital spots in our body. It is a meeting point of *mamsa*, *sira*, *snayu*, *asthi* and *sandhi*. And specially the seat of prana. injury to these leads in various dangerous crises. The Acharyas mentioned the total number of *Marma* are 107. On the predominance of structural involvement, Acharyas classified *Marma* as *Mamsa Marma*, *Sira Marma*, *Snayu Marma*, *Asthi Marma*, *Sandhi Marma*, and *Dhamani Marma*. *Asthi Marma* s are eight in number i.e., *Katikataruna* (2), *Nitamba* (2), *Amsaphalaka* (2), *Shankha* (2) and they are *Kalantara*, *Kalantara*, *Vaikalyakara*, and *Sadyopranahara* types of *Marma*'s respectively. Although the gross regional and the *Viddha lakshana*'s are available in *Samhitas*, but detail description of particular structures present in *Asthi Marma* region are lacking in ancient texts. Objective of this study were to make the comprehensive and the conceptual study on *Asthi Marma* as mentioned in texts, in the view of surface and regional anatomy described in the contemporary science, and to study *Asthi Marma* with modern surface anatomy and regional anatomy of living being and by cadaver dissection. Literary and conceptual study will be on the data completions from various Classical books and cadaveric dissection is done to see the structure related to *Asthi Marma Pradesha* (*SHANKA MARMA*) and discussed. *Shanka Marma* is one among the 107 *Marma* s. It is the type of *asthi Marma*, *sadyopranahara Marma* and *sira Marma*, situated in *shankha pradesha* of frontal bone. (Small depression on either side of frontal bone). Our main aim of the study is to fix the anatomical structures of the *shankha Marma* with the help of cadaveric dissection.

**Key words:** *Asthi Marma*, Regional anatomy, Surface anatomy

## INTRODUCTION

*Marma* in Ayurvedic classics is illustrated as that vital point in human body, the injury of which leads to deformities as well as termination of life. Descriptions of 107 *Marmas* being classified into five varieties on basis of structure involved, five varieties on effect of the injury, five varieties on basis of location on the body, are evident on reviewing of literature. Also details about the ill effect produced by particular *Marmabhighata* are explained.

*Asthi Marma* is one such vital structure in human anatomy which falls under above classification. Totally there are eight number of *Asthi Marma* explained in classics accepted by various authors unanimously irrespective of any discrimination as evident in other types of *Marmas* which quotes its uniqueness. The ill effect produced due to *Asthi Marmabhighata* portrays as multi-dimensional effect that is *Sadyo Pranahara*, *Kalantara Pranahara* as well as *Vaikalyakara* which illuminates the importance in maintaining *Asthi Marma* in a harmonized state. Hence a thorough understanding of *Asthi Marma* is very much relevant.

There by for the better understanding of this Asthi Marma with the advance anatomical and regional description and also to fulfill the lacuna in understanding patho physiology in Asthi Marmabhighata the current study has been taken up. Here the precise location of these Asthi Marma is marked over the cadavers and the underlying anatomical structures are studied in detail in comparison to description of Shankha Marma. A sincere attempt has been made for deriving a hypothetical view at all possible point of the study.

The present study is aimed at fixing the anatomical structure which are just beneath the shankha marma, as well as concluding asthi marma.

## OBJECTIVES

The present work is been taken up with an idea of updating early concept of Asthi Marma Shareera in view of modern surface and regional anatomy. The main objective of this study is aimed at

1. To make the comprehensive and the conceptual study on Asthi marma as mentioned in texts, in the view of surface anatomy and regional anatomy described in the contemporary science.
2. To study Asthi marma with modern surface anatomy and regional anatomy of living being and by cadaver dissection.

## HISTORICAL REVIEW

The Marmas are the vital points in the body, injury to those Marma leads to different consequences according to the category, they belongs to Asthi Marmas are one of such category explained by Acharyas.

### Charaka Samhita

Acharya Charaka gave much importance to the *Trimarmas* these are *Shira*, *Hridaya* and *Basti* by keeping physician in mind. He also mentioned that according to the surgeon point of view, total numbers of Marmas are 107 in *Chikitsa sthana* 26<sup>th</sup> chapter.

### Sushruta Samhita

Acharya Sushruta gave much importance to Marma, he told detailed description on Marma, their types, numbers, locations, symptoms if they injured in *Shareera sthana* 6<sup>th</sup> chapter. According to him marma is an anatomical area where the five anatomical structures i.e, *mamsa*, *sira*, *snayu*, *asthi*, and *sandhi* are collectively present. Marma point is concentrated point of prana.

### Astanga Sangraha and Astanga Hrudaya

Reference of Marma and *Asthi* Marma is available in both the grantha's, but only *Vruddha Vaagbhata* mentions about the *mama* in 7<sup>th</sup> chapter and *laghu vagbhata* in 4<sup>th</sup> chapter. He says the structure which pulsate and where the pressure pain exists, can be labeled as *marmasthala*. He also opines that in the marma area *mamsa*, *asthi*, *sira*, *snayu*, *dhamani* and *sandhi* are meeting together and where the prana is present it is a marma site.

## Modern period

In the field of modern anatomy and medicine, the structures related to surface and regional anatomy can be traced in various text books.

Marma Vignana may be taken as synonym of Traumatology. Preference of surgery is a skill which requires perfect knowledge of pre operative, operative and post operative measures. The history of trauma can be anticipated from the date survival is the fittest exist.

Trauma has posed a major civil problem of today. Widespread use of auto mobiles and frank use of fire arms have led to trauma epidemic.

**Vyutpatti of word Marma**

“Mru maneen jeevasthaane, Sandhisthaane taatparye cha”

Word meaning of Marma is *jeevasthaana*.

**Nirukti of Marma**

That which causes death on injury is called Marma or pain full condition so that patient feels seems like death.

**Definition of Marma**

“Marmaani naama maamsa *siraa* snaayu asthi sandhi sannipatah; teshu svabhaavata eva praanatishtanti”

Marmasthalas are the seat of soma, maruta and tejas. They represent the three dosa and the three gunas i.e. rajas, tamas and satva. Other than this the supreme power within the marmasthala is bhutatma. This is a force which controls body and mind.

That which leads to death or which gives misery to individual similar to death when injured is called Marma.

Marma are that part of the body which exhibits a peculiar sensation or unusual throbbing and causing pain on pressure.

Marma are so called because they cause death when they are injured and they are meeting place of Mamsa, Asthi, Snayu, *Dhamani*, *Sira*, Sandhi and life entirely resides in them.

The place where Mamsa, *Sira*, Snayu, Asthi, and Sandhi present as Marma in which specifically Prana is situated

Marma are jeeva darana places in the body.

Marma is called a jeevaagaara, that is jeeva takes shelter in Marma.

The point of the body which leads to death when injured called Marma.

**Prana**

In persons generally Soma(Kapha), Maruta(Vaayu), and Tejas (Pitta), and Rajas, Satva, and Tamas along with Atma stays in Marmas, that is why they do not survive if injury takes place on Marma. These are said to be Prana according to Sushruta.

There are said to be 10 seats of Prana that is Dasha Pranayatanas by Acharya

Charaka. Those are two Shankha, Three Marma (*Shira*, *Hrudaya* and *Basti*), *Kantha*, *Rakta*, *Shukra*, *Ojas*, and *Guda*.

Acharya Charaka again mentioned Pranayatanas in *Shareera sthana* as *Murdha*, *Kantha*, *Hrudaya*, *Nabhi*, *Guda*, *Basti*, *Oja*, *Shukra*, *Shonita*, and *Mamsa*.

Acharya Vagbhta in both *Hrudaya* and *Sangraha* mentioned same as Acharya Charaka.

Acharya Kashyapa told Dasha Pranayatana's as *Murdha*, *Hrudaya*, *Basti*, *Kantha*, *Shukra*, *Shonita*, two *Shankha*, *Guda*, among these he called first three are *MahaMarma*.

**General structure of Marma**

Marma consists of aggregate of Mamsa, *Sira*, Snayu, Asthi, Sandhi in which particularly Prana by nature stays.

By injury *Shareerika* and *Manasika* dosha are aggravated which destroy body and mind and finally Atma leaves the body.

## Discussion on Shankha Marma

Structurally it is an Asthi Marma and prognostic status is Sadhyo pranahara Marma. In number it is two and its angula pramana is Ardhangula. It is situated between the ear and fore head above the lateral end of the eyebrows. Near the ear at the end of the fore head there are two Shankha Marma which are fatal instantly. It is a part of temporal bone and there is a superficial temporal artery and inferior to this there is a middle meningeal artery. Shankha is a bony structure which protects the soft and delicate substance lying under shelter of it. Acharya Sushruta describes about its surface anatomy that it is situated between the Karna and Lalata cover the Bhru – Puccha (lateral end of eye brow).

According to the Dr Ghanekar, Shankha Marma is a part of Temporal bone and the region of temple. Temple is the area between the temporal line and zygomatic arch. The skull is thin here and covered by temporalis muscle, temporal fascia and a thin extension and a thin epicranial aponeurosis from which the extrinsic auricular muscle arises. There is a superficial temporal artery and in the superior part of this artery there is a middle meningeal artery. Relating to Marma, due to the injury on the temporal region the death occurs from the Sthabdhata (Shock).

Bailey and love (author of short practice of surgery) observed that the middle meningeal artery has the great surgical importance because, it can be torn in head injury resulting in to extradural hemorrhage. In case of hemorrhage from injuries anterior and posterior branches of the middle meningeal artery may involve. Hemorrhage from the anterior or posterior branch of middle meningeal artery is an urgent matter, patient may stop breathing within one hour of the onset of first sign and hemorrhage compresses on motor area, giving rise to hemiplegia of the opposite side.

The extradural hemorrhage is usually caused by dipolic veins or dural sinus but mainly of the middle meningeal artery under the discussion it has been stressed that the extradural hemorrhage and subdural hemorrhage are highest in head injury cases. Therefore, the possibility of middle meningeal artery laceration is common. The chances of the laceration of this artery are more at the point where it leaves the bony canal at “Pterion”.

In critical study there is no doubt left about the vulnerability of Pterion, which is situated in the temporal region. Though the cause of emergency is bleeding from middle meningeal artery but classics have upheld the Asthi to be responsible for this condition. The study reveals that the anterior and posterior branches of middle meningeal artery are sheltered by temporal bone, due to irregular ‘H’ shaped suture at the point of Pterion, and the thinness of the bone convert this region into a weak area, therefore a comparatively trauma of less intensity also causes fracture of bone which is main cause of the laceration of the artery.

This vital point is very fragile due to bony condition and the vessels being placed in such a manner that the vulnerability is enhanced.

## **CONCLUSION**

### **Definition of Marma**

Marma are the physio – anatomical governing vital areas on the body surface in which Mamsa, Sira, Snayu, Asthi, Sandhi, Dhamani are structurally unite and consist of Praana, after injury to these vital areas, the death will may occur otherwise leads to Marana sadrusha vedana.

### **Praana**

There are Dasha Pranayatana’s are told in classics, Acharya Sushruta particularly mentioned in Marma Tridosha, Triguna, Panmahabhuta, and Atma stays and they collectively called Prana and form the reason for Marma sthana. These are the fundamental things leads to vitality if they are injured.

### **Importance of bone tissue in Asthi Marma**

Dosha Dhatu sambandha of Asthi is with Vata. Vata in present context is Nervous System and Asthi is Bone tissue. Bones are present in all over the body, but Asthi Marma concept is related to the cranial and vertebral bones. This is because our Acharyas knows importance of cranial bones and vertebral bones in protection internal organs.

Acharya Sushruta by observing all these Anatomical, Physiological, and Pathological importance of Asthi in case of protection and manifestations of vata vyadhi, he put forth the Asthi Marma concept in Marma vignana in the areas of vertebral and cranial bones.

### Asthi Marma.

Asthi Marma are the physio-anatomical vital areas on the body surface with predominance of Asthi dhatu. Injury to these vital areas leads to vata vyadhi, sometimes Sadyo praana hara, Kalantara pranahara and Vaikalyakara effect on the body. Asthi Marma are eight in number.

### Shankha Marma

Mamsa	–	Temporalis.
Sira	–	Middle meningeal artery.
Snayu	–	Temporalis fascia.
Asthi	–	Temporal bone.
Sandhi	–	Pterion.
Sankhya anusara	–	2
Sthana anusara	–	Shirogata Marma
Rachana anusara	–	Asthi Marma.
Praman anusara	–	½ angula.
Parinama anusara	–	Sadyo pranahara Marma.

The cadaveric study helps us to identify a particular area & study the corresponding structures involved in that particular region in comparison to that of the Marma Shareera illustrated as per Ayurvedic literature. The specific ill effects produced due to the injury caused over a precise location of the body, explained as Viddha Lakshans in classics is tried to be justified hypothetically on basis of modern Anatomy, Physiology & pathology in the present study.

In cadaveric study we can locate a particular area of Marma on the body surface and also we can identify a particular structures involved in the Marma sthana, but Viddha lakshanas what I highlighted in this work is only hypothetical on the basis of modern Anatomy, Physiology and Pathology. Injury to the Marma sthana leads to a particular signs and symptoms and also signs and symptoms on the effect injury as classified by Acharyas.

. These particular signs and symptoms after the injury can be better studied by the help of living anatomy in the form of surgical anatomy and Traumatology. For example, in a patient injury to the Shankha Marma leads to Sadyo Marana or general symptoms of Sadyo pranahara Marma. After injury to the Shankha Marma many times suddenly death will not occur but what we are seeing practically in ill patient

1. Semi-conscious
2. Unconscious
3. Deep coma
4. May leads to death.

These symptoms can better study along with the injured person. So the further study is needed for this topic is Marma on living anatomy in the form of Traumatology or surgical anatomy.

By this observation we can say if we want to understand Marma in thre aspect (Anatomy, physiology and Pathology) it needs a patient with Shankha Marmabhighata.

**REFERENCES**

1. Atharvaveda, Translated by – Rishi kumar P.R.S. Sharma & Ram Chandra, Sanatana Dharma Yantralaya, Muuradabad, Samvat 1988 Vol 1 – 8, (7:2/123/1)
2. Rigveda, commentary by – Shri Marsyachandra, published by N. S. Sontakke, Vedic Samshodhana Mandal, Tilak Smarak mandir, Puna, Vol 1 to 10 (1:11/61/6)
3. Yajurveda Translated by – Rishi kumar P.R.S. Sharma & Ram Chandra, Sanatana Dharma Yantralaya, Muuradabad, Samvat 1988 Vol 1 – 8, (8/3/17)
4. Garbhopenishad; 108 Upanishada; Pt. Shri Ram Chandra Sharma Acharya, Published Sanskrit Sansthan Baraili U. P. Printed Jagadeesh Prasad Bhutiya Bambai Bhusthan Press, Mathura; Bruhadaranyaka 5/3, Mahabharat. By Vedavyas; edited by Pt. Ram Chandra Shastri Kinjawarkar, Chaitra Shala Press. 1026, Pune, sec 3 ch. 36/7, Pp: 2949; Page No: 1933.
5. Mahabharat, by Vedavyas, edited by Pt. Shri Ram Chandra Sharma Acharya Kinjawarkar, Chaitra Shala Press. 1026, Pune, Anushasanaparva: Pp: 5812; Page No: 1932.
6. Valmiki Ramayana, I part. Motilal Jalan, Geeta Press, Gorakhpur, Ayodhyakanda 63:45-53, 1960
7. Agnivesha, Charaka Samhitha with Ayurveda Dipika commentary of Chakrapanidatta; Edited by Vaidya Jadavji Trikamji Acharya; Chaukambha Orientalia; Varanasi; Reprint 2007; Pp: 738; Page No.: 497
8. Sushrutha, Sushrutha Samhitha with Nibandha Sangraha commentary of Dalhanacharya and Nyaya Chandrika Panjika commentary of Gayadasacharya; Edited by Vaidya Jadavji Trikamji Acharya and Narayana Ram Acharya; 9<sup>th</sup> edition; Chaukambha Orientalia; Varanasi; 2007; Pp: 824; Page No.: 370
9. Vagbhata, Astanga Hridayam with Sarvanga Sundara commentary of Arunadatta and Ayurveda Rasayana commentary of Hemadri; Edited by Bhisagacharya Harisastri Paradakara Vaidya; 9<sup>th</sup> edition; Chaukambha Orientalia; Varanasi; Reprint 2005; Pp: 956; Page No.: 411
10. Kashyapa, kashyapa Samhita, with Vidyotini teeka English commentary by P. V. Thiwari; 1<sup>th</sup> edition; Chaukambha Orientalia; Varanasi 1996; Pp 792; Page No. 127
11. Bhavamishra, Bhavaprakasha Part I with Hindi commentary by Pandit Sri. Brahma Shankar Misra; Edited by Pandit Sri. Brahma Shankar Misra; 8<sup>th</sup> edition; Chaukambha Sanskrit Sansthan; Varanasi; 2003; Pp: 960; Page No.: 66
12. Sharangadhara, sharangadhara samhita with Jeevanaprada Vyakhya hindi commentry by Dr. Shailaja Shrivastav; 4<sup>th</sup> edition; Chaukamba Orientalia; Varanasi; reprint 2005; Pp 578; Page No.: 43
13. Pandit Narahari, Raja Nighantu with Dravyaguna Prakashika Hindi commentary by Dr. Indradeva Tripathi; Edited by dr. Indradeva Tripathi; 4<sup>th</sup> edition; Chaukambha Krishnadas Academy; Varanasi; 2006; Pp: 703; Page No: 583
14. Marma and its management by Prof. J. N. Mishra, 1<sup>st</sup> edition; Chaukambha Orientalia; Varanasi;
15. [www.medical-dictionary.thefreedictionary.com](http://www.medical-dictionary.thefreedictionary.com)
16. Gray Henry, Gray's Anatomy; Edited by Peter L. Williams, Roger Warwick, Mary Dyson and Lawrence Bannister; 39<sup>th</sup> edition; Churchill Livingstone; London; 1989; Pp: 1627; Page No.: 442