

Review Article

Sushruta's concept of Marma : A review

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ABSTRACT:

Acharya Sushrut is called "Father of Surgery" as his contribution towards the *Sharir* and Surgery is commendable. *Marma sharir* is one of the best unique concepts given by *Ayurveda* to the world of medicine. *Marma* are defined as the seats of *Prana* or Life; and are meeting points of *Mamsa, Sira, Snayu, Asthi and Sandhi*. All the *Acharyas* are enumerated the 107 *Marma* points in their *Samhitas* but detail description and classification is given by *Acharya Sushrut* in the section *Sharir Sthana*. *Sushruta* mentioned *Marma* knowledge is half knowledge of *shalya*. It indicates the importance of *Marma* knowledge to good surgeon. It also clears need of detail and comprehensive knowledge about every *Marma* for every physician and surgeon.

As the *Marma* concept is very important for our day to day life or day to day activities, it is necessary to study it in detail for the beneficiary of our life.

Detail *Ayurvedic* review of literature regarding the *Marma* concept is studied. Classification of *Marma* with detail study of *Marma* from the *Samhita Granthas* especially *Sushrut Samhita* are carried out & arranged in systemic manner.

Discussion is done on *Sushruta's* concept of *Marma*. Conclusions are drawn with the help of entire study.

KEY WORDS: Marma, Ayurved, Marma sharir

INTRODUCTION:

The word '*Ayurveda*' is made up of two terms, such as, '*Ayu*' and '*Veda*'. The term '*Ayu*' means 'life' where as '*Veda*' means 'Science or Knowledge'. Thus the meaning of *Ayurveda* is "Science of Life". *Ayurveda* is the oldest healing science, originated more than 5000 years ago, and is often called the "Mother of all Healings"; and is regarded as the upaveda of *Atharva Veda*.

Among the many unique concepts of *Ayurveda*, *Marma* is one of the best concept explained in detail by *Acharya Sushrut*, is the earliest or first reference which explains the surgical or applied anatomy. *Acharya Charak* and *Vagbhat*, also enumerated *Marma sharir*, but detail explanation is found in *Sushrut Samhita* with 107 *Marma sthana*, and there classification according to structure and effect of trauma. Injuries on these vital points can cause one or more deformity, severe pain, loss of function, gradual death or even almost

immediate death. Knowledge of these vital points helps the surgeon while conducting surgery, without harming these points or area of the body.

Marmas are the seats of *Prana* or *Chetana* or Life; and are the meeting points of five elements like *Mamsa, Sira, Snayu, Asthi and Sandhi*. Out of 107 *Marmas*, Trauma is one of the main sources of mortality and morbidity in India. *Marma Vidnyan* may be taken as synonym for Traumatology. The *Marma abhigat*, in ancient time were commonly caused by stabs with sword, arrow, spear etc. and these are low velocity weapons. But in this modern era, they are replaced by gunshot pellets, club, iron bar, stone, ball, fist, knife, chopper, axe, sports injuries, accidents etc.

Marma Chikitsa is an important aspect of *Ayurvedic* treatment with the help of *Panchkarma* and application of proper pressure on these vital points.

Common disease like headache, body ache, cervical spondylitis, lumber spondylitis, pain in the joints, frozen shoulder, paralysis etc. can be treated successfully with the help of *Marma chikitsa*. *Marma*-point massage is used in southern India by masters of *Kalari*, an ancient martial art, for the treatment. Now a day, Ayurvedic practioners also used these points to stimulate healing in areas that corresponded to injuries.

The knowledge of *Marma* constitute half of the knowledge of *Shalya*, as stated by *Acharya Sushrut*, makes it clear that, detail and comprehensive knowledge about every *Marma* is must for a physician and surgeon to excel in the field of medicine and surgery.

Looking into the importance of the *Marma*, in day to day life for every person and physician, which is almost an untouched area of study, With the help of this work, knowledge regarding *Marma* will be obtained, which is need of today's lifestyle. This work will definitely helpful for the scholars and physicians of the *Ayurveda*.

Aims and Objectives

- To study the concept of *Marma* explained by *Ayurveda* especially by *Acharya Sushrut* with its full perspective.
- To understand the importance of *Marma* concept in clinical practice.

MATERIAL AND METHODS

The data for this work is collected from the *Samhitas* especially from the *Sushrut Samhita*, the text books of some respected authors, scientific research journals and internet. The obtained data is arranged in a systemic manner.

Review of Literature

(Vyutpatti) –

The term *Marma* is etymologically derived from Sanskrit root word ' *Mri*' which represents the sense of vital part of the body.

मारयन्तीति मर्माणि । (सु.शा.६ - डल्हणटीका)⁰¹

Injuries to *Marmas* are likely to result fatal.

Definitions of the *Marma*

मर्माणि नाम मांससिरास्त्रायुःस्थिसन्धिसन्निपाताः

तेषु स्वभावतः एव विशेषेण प्राणाः तिष्ठन्ति ॥ (सु.शा. ६/१५)⁰²

The *Marma* are juncture (meeting) place of *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi*. The *Pranas* are specifically situated in these *Marmas* by the virtue of their nature; hence a trauma to any of these *Marmas* invariably causes physical disturbances in accordance with their particular types.

सोममारुततेजांसि रजःसत्वतमांसि च ।

मर्मसु प्रायशः पुंसां भूतात्मा चावतिष्ठते ॥

मर्मस्वभिहतास्तस्मान्न जीवन्ति शरीरिणः । (सु.शा.६/३७)⁰³

Marmas are the seats of three *tatvas* i.e. *Soma* (*Jal tatva*), *Maruta* (*Vayu tatva*), and *Tejas* (*Agni tatva*) - (representing the three *doshas* of the body i.e. *Shleshma*, *Vata* and *Pitta* accordingly)and three *Gunas* i.e. *Raja*, *Satva* and *Tama*, and the *Bhutatma* (supreme power or force controlling the body and mind or life principle). Therefore any trauma on these *Marmas* can cause death.

TOTAL NUMBER OF *MARMA*–

सप्तोत्तरं मर्मशतम् । (सु.शा.६/१२ ;)⁰⁴

As per all *Acharyas*, the total number of *Marma* is 107. Some of these *Marmas* are situated in *Skandha* i.e. central part of the body and some are situated in *Shakha* i.e. on four limbs 9 (two upper limbs and two lower limbs).

CLASSIFICATION OF *MARMA* –

Marmas are classified on different basis –

- Classification of *Marma* according to *Rachana* or Structure or Body organs involved and their number.
- Classification of *Marma* according to *Shadanga* or Sites & Location and their number.
- Classification of *Marma* according to *Parinama* or Consequences of trauma over the *Marma* area and their number.
- Classification of *Marma* on the basis of Measurement or Size or Area or *Pramana* or *parivistara* and their number.

These are explained in detail as follows –

I. Classification of Marma according to Rachana or Structure or Body organs involved and their number –

सप्तोत्तरं मर्मशतम् । तानि मर्माणि पञ्चात्मकानि भवन्ति, तद्यथा- मांसमर्माणि सिरामर्माणि स्नायुमर्माणि अस्थिमर्माणि सन्धिमर्माणि चेति; न खलु मांससिरास्नायवस्थिसन्धि व्यतिरेकेणान्यानि मर्माणि भवन्ति, यस्मान्नोपलभ्यन्ते ।

(सु.शा. ६/१२)⁰⁵

Marma (fatal spots) are one hundred seven in number, these are of five kinds such as *Mamsa Marma*, *Sira Marma*, *Snayu Marma*, *Asthi Marma* and *Sandhi Marma*. There are no other kinds of *Marma* apart from these of *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi*, since no such different kind of *Marma* is found.

The term *Marma* is defined as that spot which when injured, kill the person. This is a broad general definition. All such *Marma* do not cause death, some cause deformities and severe pain. These are classified on the basis of the structure predominant in that area such as *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi*. The statement 'that apart from these no other kinds of *Marma* is found' is intended to discard the view of some other who include *Srota Marma* also, which is untenable because *Srotas* are present within the *Dhatu* only.

तत्रैकादश मांसमर्माणि, एकचत्वारिंशत् सिरामर्माणि, सप्तविंशतिः स्नायुमर्माणि, अष्टावस्थिमर्माणि, विंशतिः सन्धिमर्माणि चेति, तदेतत् सप्तोत्तरं मर्मशतम् ॥ (सु.शा. ६/४)⁰⁶

Mamsa Marma are Eleven in number, *Sira Marma* are Fortyone, *Snayu Marma* are Twenty seven, *Asthi Marma* are Eight and *Sandhi Marma* are Twenty; thus one hundred & seven all together.

More details of all these *Marma* are available as follows –

1. Mamsa Marma –

तत्र तलहृदयेन्द्रबस्तिगुदस्तनरोहितानि मांसमर्माणि । (सु.शा. ६/७)⁰⁷

According to *Sushrut*, *Mamsa Marma* are 11 in number these are – *Talhridaya*, (4) *Indrabasti*, (4) *Guda* (1) and *Stanarohit* (2).

2. Sira Marma –

नीलधमनीमातृकाशृंगाटकापाङ्गस्थपनीफणस्तनमूलापलापापस्त

म्भहृदयनाभिपार्श्व-सन्धिबृहतीलोहिताक्षोर्व्यः सिरामर्माणि । (सु.शा. ६/७)⁰⁸

Sira Marma are– *Nila-dhamani*(4), *Matruka*(8), *Shringataka*(4), *Apanga*(2), *Sthapani*(1), *Phana*(2), *Stana-mula*(2), *Apalapa*(2), *Apasthambha*(2), *Hridaya*(1), *Nabhi*(1), *ParshwaSandhi*(2), *Brihati*(2), *Lohitaksha*(4) and *Urvi*(4) are 41 *Sira Marma*.

3. Snayu Marma –

आणीविटपक्षधरकूर्चकूर्चशिरोबस्तिक्षिप्रांसविधुरोत्क्षेपाः

स्नायुमर्माणि । (सु.शा. ६/११)⁰⁹

Acharya Sushrut explained 27 *Snayu Marma*. – *Aani*(4), *Vitap*(2), *Kakshadhara*(2), *Kurcha*(4), *Kurchashira*(4), *Basti*(1), *Kshipra*(4), *Amsa*(2), *Vidhura*(2) and *Utkshepa*(2).

4. Asthi Marma –

कटीकरुणनितम्बांसफलकशङ्खास्तु अस्थिमर्माणि । (सु.शा. ६/१२)¹⁰

According to *Acharya Sushrut* – *KatikataruNa*(2), *Nitamba*(2), *Amsaphalaka*(2) and *Shankha*(2) are *Asthi Marma*.

5. Sandhi Marma –

जानुकूर्परसीमन्ताधिपतिगुल्फमणिबन्धकुन्दरावर्तकृकाटिकाश्चेति सन्धिमर्माणि । (सु.शा. ६/१३)¹¹

Acharya Sushrut explained – *Janu*(2), *Kurpar*(2), *Simanta*(5), *Adhipati*(1), *Gulpha*(2), *Manibandha*(2), *Kukundara*(2), *Avarta*(2) and *Krukataka*(2) total 20 as *Sandhi Marma*.

II. Classification of Marma according to Shadanga or Sites & Location and their number –

तेषामेकादशैकस्मिन् सक्थिन् भवन्ति, एतेनेतरसक्थि बाहू च व्याख्यातौ, उदरोरसौर्वादिश, चतुर्दश पृष्ठे, ग्रीवां प्रत्यूर्ध्वं सप्तत्रिंशत् ॥ (सु.शा. ६/४)¹²

Out of these 107 *Marma*, Eleven(11) are present in one Leg, the same number in other leg and the two Arms thus there are 44 *Shakhagat Marma* ; there are Twelve(12) in *Udara* (3) and *Ura*(9) i.e. Abdomen and Chest; Fourteen(14) in the *Prushthapradesha* i.e. Back and Thirty Seven(37) in *Urdhwa-jatrugata pradesha* i.e. Neck and above it.

More details of these *Marmas* are as follows –

1. Shakhagata Marma –

तत्र सक्थि मर्माणि, क्षिप्रतलहृदयकूर्चकूर्चशिरोगुल्फेन्द्र
बस्तिजान्वान्यूर्वीलोहिताक्षाणि विटपं चेति, एतेनेतरसक्थि
व्याख्यातम् । (सु.शा.६/५)¹³

There are 22 *Marma* in Adho-shakha. These are – *Kshipra*(2), *Talahridaya*(2), *Kurcha*(2), *Kurchashira*(2), *Gulpha*(2), *Indrabasti*(2), *Janu*(2), *Aani*(2), *Urvi*(2), *Lohitaksha*(2) and *Vitapa*(2). Similar number should be taken in other Shakha i.e. *Urdhwa shakha* these are-

2. Urdhwa Shakhagata Marma –

बाहुमर्माणि तु क्षिप्रतलहृदयकूर्चकूर्चशिरोमणिबन्धेन्द्र
बस्तिकूर्पराण्यूर्वीलोहिताक्षाणि कक्षधरं चेति, एतेनेतर
बाहुव्याख्यातः । (सु.शा.६/७)¹⁴

The *Marma* in *Urdhwa-Shakha* are – *Kshipra*(2), *Talahridaya*(2), *Kurcha*(2), *Kurchashira*(2), *Manibandha*(2), *Indrabasti*(2), *Kurpara*(2), *Aani*(2), *Urvi*(2), *Lohitaksha*(2) and *Kakshadhara*(2). In this way there are 22 *Marma* in *Urdhwa-Shakha*.

3. Udara-Uras Marma –

उदरोरसोस्तु गुदबस्तिनाभिहृदयस्तनमूलस्तनरोहितापलापा-
न्यपस्तम्भौ चेति । (सु.शा.६/६)¹⁵

There are total 12 *Marma* present in the Abdomen and Chest these are – *Guda*(1), *Basti*(1), *Nabhi*(1), *Hridaya*(1), *Stanamula*(2), *Stanarohit*(2), *Apalapa*(2) and *Apasthambha*(2).

4. Prushthagata Marma –

पृष्ठमर्माणि तु कटीकतरुणकुकुन्दरनितम्बपार्श्वसन्धि-
बृहत्सफलकान्यंसौ चेति । (सु.शा.६/६)¹⁶

Marma present in the *Prushtha-pradesha* i.e. Back are – *Katikataruna*(2), *Kukundara*(2), *Nitamba*(2), *ParshwaSandhi*(2), *Bhrihati*(2), *Amsaphalaka*(2) and *Amsa*(2). Total are 14 in number.

5. Urdhwa-jatrugata Marma –

जत्रुण ऊर्ध्वं चतस्रो धमन्योऽष्टौ मातृका वदे कृकाटिके वदे विधुरे वदे
फणे व्दावपाङ्गौ व्दावावर्तौ व्दावुत्क्षेपौ व्दौ शङ्खावेका स्थपनी
पञ्च सीमन्ताश्चत्वारि शृङ्गाटकान्येकोऽधिपतिरिति ।
(सु.शा.६/८)¹⁷

There are 37 *Marma* present in *Urdhwa-jatrugata pradesha* i.e. above Shoulder. These are – *four Dhamani*, *eight Matruka*, *two Krukataka*, *two Vidhura*, *two Phana*, *two Apanga*, *two Avarta*, *two Utkshepa*, *two Shanskha*, *one Sthapani*, *five Simanta*, *four Shringataka* and *one Adhipati*.

This is the classification of *Marma* according to *Shadanga* i.e. Site of Location.

Classification of Marma according to Parinama or Consequences of trauma over the Marma area and their number –

तान्येतानि पञ्चविकल्पानि भवन्ति, तद्यथा - सद्यःप्राणहराणि,
कालान्तरप्राणहराणि, विशल्यघ्नानि, वैकल्यकराणि, रुजाकराणि
चेति।

तत्र सद्यःप्राणहराण्येकोनविंशतिः, कालान्तरप्राणहराणि
त्रयस्त्रिंशत्, त्रीणि विशल्यघ्नानि, चतुश्चत्वारिंशत् वैकल्यकराणि,
अष्टौ रुजाकराणीति । (सु.शा.६/१४)¹⁸

These *Marmas* are of Five types, such as – *Sadya Pranahara* (causing death quickly), *Kalantara Pranahara* (causing death after some time), *ViShalyaghna* (causing death after removal of foreign body), *Vaikalyakara* (causing deformity), and *Rujakara* (causing severe pain).

Sadya Pranahara Marmas are Nineteen in number, *Kalantara Pranahara* are Thirty Three, *ViShalyaghna* are Three, *Vaikalyakara* are Fourty Four and *Rujakara* are Eight in number.

After identifying various types of *Marma* based on their prognosis, *Acharya Sushrut* has made further observations that, what are the exact anatomical sites where if trauma occurs, what will be the final result.

Thus result based list of these *Marma* is given below –

1. Sadya Pranahara Marma –

शृङ्गाटकान्यधिपतिः शङ्खौ कण्ठसिरा गुदम् ।
हृदयं बस्तिनाभ्यौ च घ्नन्ति सद्योहतानि तु ॥ (सु.शा.६/१५)¹⁹

Sadya Pranahara Marma are 19 in number. These are *Shringataka*(4), *Adhipati*(1), *Shankha*(2), *KanthaSira* (*Matruka*) (8), *Guda*(1), *Hridaya*(1), *Basti*(1) and *Nabhi*(1) kill the person quickly when injured (i.e. *Sadyapranahara*).

2. Kalantara Pranahara Marma –

वक्षोमर्माणि सीमन्ततलक्षिप्रेन्द्रबस्तयः ।

कटीकतरुणे सन्धी पार्श्वजौ बृहती च या ॥

नितम्बाविति चैतानि कालान्तरहराणि तु । (सु.शा.६/१६)²⁰

Vaksha Marma i.e. Stanamula(2), Stanarohita(2), Apalapa(2) and Apastambha(2) ; Simanta(5), Talahridaya(4), Indrabasti(4), Kshipra(4), Katikataruna(2), ParshwaSandhi(2), Brihati(2), Nitamba(2) all together Thirty Three are Kalantara Pranahara Marma (Kill the person after some time).

3. ViShalyaghna Marma -

उत्क्षेपौ स्थपनी चैव विशल्यघ्नानि निर्दिशेत् । (सु.शा.६/१७)²¹

Utkshepa(2) and Sthapani(1), total three are ViShalyaghna Marma (Kills the person when foreign body is removed).

4. Vaikalyakara Marma -

लोहिताक्षाणि जानूर्वीकूर्चविटपकूर्पराः । कुकुन्दरे कक्षधरे विधुरे सकृकाटिके ॥

अंसांसफलकापाङ्गानीलेमन्येफणेतथा । वैकल्यकराण्याहुरावर्तौ द्वौ तथैव च ॥ (सु.शा.६/१८,१९)²

Lohitaksha(4), Aani(4), Janu(2), Urvi(4), Kurcha(4), Vitapa(2), Kurpara(2), Kukundara(2), Kakshadhara(2), Vidhura(2), Krukatika(2), Amsa(2), Amsaphalaka(2), Apanga(2), Nila(2), Manya(2), Phana(2) and Avarta(2) - all together Fourty Four are Vaikalyakara Marma (causes deformities).

5. Rujakara Marma -

गुल्फौ द्वौ मणिबन्धौ द्वे द्वे कूर्चशिरोसि च ।

रुजाकराणि जानीयादष्टावेतानि बुद्धिमान् ॥ (सु.शा.६/२०)²³

Two Gulpha, two Manibandha and four Kurchashira - these eight are Rujakara Marma (causes severe pain).

Nature of Marma (Marma Swabhava) -

तत्र सद्यःप्राणहराण्याग्रेयानि, अग्निगुणेष्वशु क्षीणेषु क्षपयन्ति, कालान्तरप्राणहराणि सौम्याग्रेयानि, अग्निगुणेष्वशु क्षीणेषु क्रमेण च सोमगुणेषु कालान्तरेण क्षपयन्ति, विशल्यप्राणहराणि वायव्यानि, शल्यमुखावरुद्धो यावदन्तरवायुस्तिष्ठति तावज्जीवति, उद्धृतमात्रे तु शल्ये मर्मस्थानाश्रितो वायुर्निष्क्रामति, तस्मात् सशल्यो जीवत्युद्धृतशल्यो म्रियते, पाकात्पतितशल्यो वा जीवति,

वैकल्यकराणि सौम्यानि, सोमो हि स्थिरत्वाच्छैत्याच्च प्राणावलम्बनं करोति, रुजाकराण्यग्निवायुगुणभूयिष्ठानि, विशेषतश्च तौ रुजाकरौ, पाञ्चभौतिकीं च रुजामाहुरेके ॥ (सु.शा.६/२३)²⁴

Sadyapranahara Marma are Agneya (have quality of Fire), hence by this Agneya nature these kill debilitated persons quickly.

Kalanatara Pranahara Marma are Saumya Agneya (have qualities of Water and Fire mixed together , hence with their Agneya quality these may kill debilitated person quickly but by their Saumya quality they prolong the time of death.

ViShalyaghna Marma are Vayavya (have qualities of Air), as long as air remains inside obstructed from coming out by the mass of the Shalya (i.e. foreign body) the person survives, as soon as the foreign body is pulled out, the air residing in the Marma sthana gets out; so the person survives when the foreign body is present inside and dies when it is pulled out. He survives if the foreign body comes out as a result of suppuration at the Marma sthana.

Vaikalyakara Marma are Saumya (possess qualities of the moon or water), because of his stability and cold in nature the Saumya Guna helps sustenance of life.

Rujakara Marma have properties of Agni and Vayu (i.e. Fire and Air) predominantly, both these are producers of Pain. Some say that, pain is Panchabhautik in nature i.e. produced by the combination of all five Bhutas.

Parinama Kala (Time of Effect) -

तत्र सद्यःप्राणहराणि ससरात्राभ्यन्तरान्मारयन्ति, कालान्तरप्राणहराणि पक्षान्मासाब्दा, तेष्वपि क्षिप्राणि कदाचिदाशु मारयन्ति, विशल्यप्राणहराणि वैकल्यकराणि च कदाचिदत्यभिहतानि मारयन्ति ॥ (सु.शा.६/३०)²⁵

Sadyapranahara Marma when injured, kill the person within seven days; Kalantara Pranahara Marma kill within a fortnight or a month, even among there injury to Kshipra Marma sometime kills the person quickly; ViShalyaghna and Vaikalyakara Marma sometime causes even death when these are greatly injured.

Marma and their Bhautik Constitution and Consequences -

Table No. 1: Showing *Marma* and their *Bhautik Constitution* and *Consequences* -

Sr. No.	Categories of <i>Marma</i>	Bhautic Constitution	Consequences	Period of Fatality
1	<i>Sadya Pranahara</i>	<i>Agni</i>	Loss of <i>Agni</i> Tatva leads to death	Within one week
2	<i>Kalanatara Pranahara</i>	<i>Agni & Soma</i>	Gradual loss of <i>Soma</i> Tatva & immediate loss of <i>Agni</i> Tatva precipitates death.	15 days to 1 month
3	<i>ViShalyaghna</i>	<i>Vayu</i>	Death due to escape of <i>Vayu</i> resulting out of extraction of <i>Shalya</i> .	May kill due to escape of <i>Vayu</i> due to extraction of <i>Shalya</i> .
4	<i>Vaikalyakara</i>	<i>Soma</i>	Extreme restlessness of involvement of <i>Soma</i> Tatva.	Disability or may kill due to severe trauma
5	<i>Rujakara</i>	<i>Agni, & Vayu</i> or all mahabhutas	Severe agonizing pain due to involvement of <i>Agni & Vayu</i> .	No fatality occurs. Causes acute pain.

Different Opinion on *Marma* -

केचिदाहुर्मासादीनां पञ्चानामपि समस्तानां विवृद्धानां समवायात् सद्यः प्राणहराणि, एकहीनानामल्पानां वा कालान्तरप्राणहराणि, विहीनानां विशल्यप्राणहराणि, त्रिहीनानां वैकल्यकराणि, एकस्मिन्नेव रुजाकराणीति । नैव, यतोऽस्थिमर्मस्वप्यभिहतेषु शोणितागमनं भवति । (सु.शा.६/२४)²⁶

Some scholars says - presence of all the five components such as *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi*, greatly increased and intimately mixed together is found in *Sadyapranahara Marma*; presence of any one less (i.e. with four components only) or of less quantity is found in *Kalantar pranahara Marma*; presence of any two less (i.e. with three components only) is found in *Vishalyaghna Marma*; presence of less by three (i.e. with two components only) is found in *Vaikalyakara Marma*; and presence of any one component only is found in *Rujakara Marma*.

is not so, because even when *Asthi Marma* are injured there will be flow of blood.

Acharya Sushrut refuses the opinion of others, who give different number of components in different kinds of *Marma* and substantiate his opinion that all five components i.e. *Mamsa*, *Sira*, *Snayu*, *Asthi*, *Sandhi* are present in all varieties of *Marma*.

Consequences of Trauma nearby *Marma* -

तत्र सद्यः प्राणहरमन्ते विद्धं कालान्तरेण मारयति, कालान्तरप्राणहरमन्ते विद्धं वैकल्यमापादयति, विशल्यग्रं वैकल्यकरं च भवति, वैकल्यकरं कालान्तरेण क्लेशयति रुजां च करोति, रुजाकरमतीव वेदनं भवति । (सु.शा.६/२९)²⁷

Sadyapranahara Marma if injured at their nearby area causes death after sometime like *Kalantar Pranahara Marma*; *Kalanatara Pranahara Marma* if injured at their nearby area produces deformities like *Vaikalyakara Marma*; *ViShalyaghna Marma* when injured in their nearby area also gives rise to deformities; *Vaikalyakara Marma* when injured at their nearby area, harms the body after some time and also produces pain; *Rujakara Marma* when injured at their nearby area rise to severe pain.

Classification of *Marma* on the basis of Measurement or Size or Area or *Pramana* or *Parivistara* and their number -**1. Ek Angula Pramana Marma -**

उर्वः शिरांसि विटपे च सकक्षपार्श्वे एकैकमङ्गुलमितं । (सु.शा.६/३८)²⁸

Urvi(4), *Kurchashira(4)*, *Vitapa(2)* and *Kakshadhara (2)* - each are one *Angula* in extent.

Total 12 *Marma* are of *Ekamgula praman*.

2. Dway Angula Pramana Marma -

.....स्तनपूर्वमूलम् । विद्धङ्गुलव्ययमितं मणिबन्धगुल्फम् ॥ (सु.शा.६/३८)²⁹

Stanamula(2), *Manibandha(2)* and *Gulpha(2)* these six *Marma* are two *Angula* in extent.

3. Tray Angula Pramana Marma -

त्रीण्येव जानु सपरं सह कूर्पराभ्याम् । (सु.शा.४/३८)³⁰

Total four *Marma* in which *Janu(2)* and *Kurpara (2)* are each three *Angula* in *Pramana*.

4. Swapanitala Pramana Marma (ChaturAngula Pramana) -

हृदयस्ति कूर्चगुदनाभि वदन्ति मूर्ध्नि चत्वारि पञ्च च गले दश यानि च वदे ।

तानि स्वपाणितलकुञ्चितसंमितानि..... ॥ (सु.शा.६/३९)³¹

स्वपाणितलकुञ्चितसंमितानि - चतुरङ्गुलप्रमाणानीत्यर्थः ।
(डल्हणटीका)

Hridaya(1), Basti(1), Kurcha(4), Guda(1), Nabhi(1), Nila(2), Manya(2), Matruka(8), Simanta(5) and Shringataka (4)- all these 29 Marma are of the size of one's own folded palm.

Acharya Dalhan explained - Swapanitala means ChaturAngula Pramana.

5. Ardh Angula Pramana Marma -

शेषाण्यवेहि परिविस्तरतोऽङ्गुलार्धम् । (सु.शा.६/३९)³²

All the remaining 56 Marma are ArdhAngula Pramana. In which Kshipra(4),Talahridaya(04), Tndabasti(4) Aani(4), Lohitaksha(4), Stanarohit(2), Apalapa(02),Apastambha(02), Katikatarun (02),Kukundara(02), Nitamba(02), ParshwaSandhi (02), Bruhati(02), Apalapa(02), Apastambha(02), Katikatarun(02), Kukundara(02), Nitamba(02), ParshwaSandhi(02), Bruhati(02), Amsaphalaka(02), Amsa(02), Krukataka(02), Vidhura(02),Phana (02),Apanga(02), Avarta(02),Utkshepa(02), Shankha (02),Sthapani(01) and Adhipati(01) are included.

This is the classification of Marma.

Acharya Sushrut explained Dwadashaprana in Sharir sthana -

अग्निः सोमो वायुः सत्वं रजस्तमः पञ्चेन्द्रियाणि भूतात्मेति प्राणाः ॥ (सु.शा.४)³³

Agni, Soma, Vayu; Satva, Rajas, Tamas; Panchendriya i.e. Sparshanendriya, Rasanendriya, Ghranendriya, Shrotrendriya & Chakshurendriya and Bhutatma are the 12 Pranas.

Above explained structures are the seats of the Prana and out of these many structures are explained as Marmas.

Importance of Knowledge of Marmas -

मर्माणि शल्यविषयार्धमुदाहरन्ति यस्माच्च मर्मसु हता न भवन्ति सद्यः ।

जीवन्ति तत्र यदि वैद्यगुणेन केचित् ते प्राप्नुवन्ति विकलत्वमसंशयं हि ॥ (सु.शा.६/३४)³⁴

Marmas are considered as the half of the Surgery subject as any injury to Marmas can prove to be fatal so if patient is promptly treated by a skilled doctor even though the patient will suffer from excessive pain.

सभिन्नजर्जरितकोष्ठशिरःकपाला जीवन्ति शस्त्रवि(नि)हतैश्च शरीरदेशैः ।

छिन्नैश्च सक्थिभुजपादकरैरशेषैः येषां न मर्मपतिता विविधाः प्रहाराः ॥ (सु.शा.६/४३)³⁵

Acharya also state that, person encountering injury leading to damage to its Head, Viscera, or leading to losing his limb or even trauma to whole body may survive if the Marmas of the body escapes the injury.

मर्माभिघातस्तु न कश्चिदस्ति योज्ज्यात्ययो वाऽपि निरत्ययो वा ।

प्रायेण मर्मस्वभिताडितस्तु वैकल्यमृच्छन्त्यथवा म्रियन्ते ॥

मर्माण्यधिष्ठाय हि ये विकारा मूर्च्छन्ति काये विविधा नराणाम् ।

प्रायेण ते कृच्छ्रतमा भवन्ति नरस्य यत्रैरपि साध्यमानाः ॥ (सु.शा. ६/५३, ५४)³⁶

Any trauma to Marma will surely produce pain or can cause death and if any disease occurs involving the Marma and will always difficult to treat.

General Signs and Symptoms of Marma Abhighata -

भ्रमः प्रलापः पतनं प्रमोहो विचेष्टनं संलयनोष्णते च ।

स्रस्ताङ्गता मूर्च्छनमूर्ध्ववातस्तीव्रा रुजो वातकृताश्च तास्ताः ॥

मांसोदकाभं रुधिरं च गच्छेत् सर्वेन्द्रियार्थोपरमस्तथैव ।

दशार्धसंख्येष्वपि हि क्षतेषु सामान्यतो मर्मसु लिङ्गमुक्तम् ॥ (सु.सू. २५/३४, ३५)³⁷

These are -

1. Ruja (pain and abnormal throbbing pulsation, tremor, movement)
2. Dehaprasupti (loss of sensation)
3. Dehaguruta (heaviness of body)
4. Sammoha (delision)
5. Sheeta kamita (desire to cold)

6. Sveda (perspiration)
7. Mueccha (syncope)
8. Vami (vomiting)
9. Shwasa (dyspnoea)
10. Person rolls in bed with severe pain
11. Feeling of emptiness
12. Giddiness
13. Restlessness
14. Body organ drops because of debility
15. Burning sensation in heart
16. Injured person cannot stay in any posture for long time.

Comparison of *Marma with shalya tantra* :

Acharya Sushruta has explained that detailed knowledge of *Marma vidnyan* is equal to half knowledge of *Shalyatantra* i.e. Surgery, since person injured at *Marma Sthan* die quickly. If anyone survived by the efficiency of *Vaidya* he or she is sure to suffer deformities.

Explaining the importance of Marma Sthan Acharya also stated that those whose internal organs are punctured or injured, skull bones broken to pieces, other parts of the body cut by sharp weapons, legs shoulders feet and hands are cut off completely; do not die if the Marma Sthan are not injured by many kinds of assault.

The day to day life is very fast and furious, which causes so many injuries due to RTA, sports and may be during daily activities, which leads to severe pain, injuries, deformity or even death. To avoid these situations, we must know the Marma Sthan of our bodies, so that we can take proper care to protect them from external injuries. Marma points are also helpful for surgeons during any surgical procedures, by avoiding injuries to Marma Sthan and as well as to the adjacent area of Marma .

Marma is not only structural parts of the body but also a part of applied anatomy; we can say that it is physio anatomical concept described by Ayurveda. Marma is explained as anatomical points where five principle structures Mansa, Sira, Snayu, Asthi and Sandhi are collectively present. It is the seat of Prana or Chetana, which gives its vitality.

Marma is also a part of surface anatomy where we get information regarding the internal structures and pathological conditions of our body due to trauma. With the help of site of particular Marma and its region we can understand the internal structure and severity

of trauma on that point. This knowledge is very much important to any surgeon, for avoiding the Marma area during surgery, because injury to Marma causes deformity or death.

Thus the knowledge of Marma can be considered as the first and comprehensive explanation of the applied aspects of surgery, applied anatomy and surface anatomy.

CONCLUSION

1. After a close observation, we can say that, the knowledge regarding *Marma Vidnyan* was very well known since Vedic Era (5000BC). Later on the progression of knowledge, *Marma vidnyan* is explained in detail in *Samhita Granthas* especially *Sushrut Samhita*, *Ashtang Sangraha* and *Ashtand Hridaya in sharir sthana*.
2. *Marma Chikitsa* is an important aspect of *Ayurvedic* treatment with the help of *Panchkarma* and application of proper pressure on these vital points. Common disease like headache, body ache, cervical spondylitis, lumber spondylitis, pain in the joints, frozen shoulder, paralysis etc. can be treated successfully with the help of *Marma chikitsa*. *Marma-point* massage is used in southern India by masters of *Kalari*, an ancient martial art, for the treatment. Now a day, *Ayurvedic* practioners also used these points to stimulate healing in areas that corresponded to injuries.
3. Various *Ayurvedic Samhitas* have defined *Marma* as, juncture place of *Mamsa, Sira, Snayu, Asthi* and *Sandhi*; is the seat of *Prana* or *Chetana* as well as seat of *Tridosha* and *Trigunas*. Therefore any trauma on these *Marmas* can cause death.
4. Trauma is one of the main sources of mortality and morbidity in India. *Marma Vidnyan* may be taken as synonym for *Traumatology*. The *Marma abhigat*, in ancient time were commonly caused by stabs with sword, arrow, spear etc. and these are low velocity weapons. But in this modern era, they are replaced by gunshot pellets, club, iron bar, stone, ball, knife, chopper, axe, sports injuries, accidents etc.
5. Symptoms produced after aaghat on *Marma* are traumatic complications, such as, shock, tetanus, cellulitis, functional deformity, coma if not treated properly may leads to death.

6. So the study of *Marma sharir* is very much important to surgeons, who are dealing with surgical procedures and removal of foreign bodies or *shalya* from the body. They have to manage their surgical procedure with taking proper precautions of *Marma* otherwise it should go in complications like deformity (*vaikalya*) or even death.
7. The knowledge of *Marma* constitute half of the knowledge of *Shalya*, as stated by *Acharya Sushrut*, makes it clear that, detail and comprehensive knowledge about every *Marma* is must for surgeon to excel in the field of surgery.

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