



**MARMA SCIENCE - AN ANCIENT CONCEPT AS DEPICTED IN ANCIENT
AYURVEDA LITERATURES OF CHARAKA AND SUSHRUTA SAMHITA**

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ABSTRACT

Introduction - *Marma* is an ancient concept first described way back in *Vedic* literatures and was described in many literatures afterward. i.e in *Upanishads*, epics like *Mahabharata*, *Ramayana*, literatures of *Ayurveda*, etc. Most references highlight *marma* as fatal parts of the body that should be protected from injury during warfare or surgery while few references are there which laid emphasis on these *marmas* as a vital region of the body which may be utilized for treatment of organic diseases & are even of psychological and spiritual importance.

Material and method - This review is of the objective to collect and analyze the references of *marma* in *charaka samhita* and *sushruta samhita* literature of *Ayurveda* & an attempt is made to group up them under various headings giving clearer insight to the concept & applied aspects of *marma*.

Conclusion - The science of *marma* contains a vast knowledge that just not deals with the structural aspect of the body but it encompasses all aspect of life sciences. It is a holistic science which includes knowledge of regional anatomy, physiology as well as metaphysical dimension of life. This knowledge was utilized by both *acharyas* in prognosis and diagnosis of diseases or trauma of body as well as in management of diseases especially by *acharyasushruta*.

Keywords: Marma, Ayurveda, Sushruta, charaka, Trimarma

INTRODUCTION

The description of *Marma* can be traced way back in *Vedas* to present modern literatures. It has always been a subject of interest because of its applied aspects. In ancient literatures like *Veda*, *Upnishads* and in literature of *Ayurveda* it has been considered as a science of vital parts of body that must be protected in all conditions if one has pursuit for survival.

In literature of *Ayurveda* the concept of “*marma*” was described by both the school of medicine and surgery.i.e. by both *acharya charaka* and *acharya sushruta* & is quite widespread and detailed. In *charaka samhita* the description of *marma* is limited to three *marma* while in *sushruta samhita* there is elaborate description of all 107 *marma*. To have clearer insight the description in both literatures must be analyzed keenly.

Description of *marma* in Caraka Samhita

Acharya has mentioned *Marma* at various places in *samhita*. These references can be reviewed under following headings-

1. Marmas (vital regions of body)-

a) The *trimarmas* (great three)-

Acharya charaka acknowledged total number of 107 *Marmas* in the body but emphasized on three *marma* called as *trimarma* i.e. *Hridaya* (heart region), *Shir* (Head region), and *Basti* (bladder region) which are important from physician

point of view as he basically belongs to school of medicine. He devoted two chapters on name of *trimarma* his treatise *charaka samhita* one in *cikitsa sthan* [1] chapter 26 named as *trimarmiyacikitsa* and another in *siddhi sthan* [2] chapter 9 with name *trimarmiya siddhi*.

b) In *Charaka samhita siddhisthan* chapter 9 there is anatomical and physiological description as well as enumeration of the diseases of the *trimarma – shir, hridaya and basti* [11] and stated that *Prana / Chetana Dhatu* is related with these *Marmas* [12]. While describing *hridaya acharaya charaka* stated that it is seat of ten *dhamani, prana, apana, manas, buddhi, chetna* and *mahabutas*. He also highlighted the importance of *shir* as seat of *indriya* and *pranavaha srotas*. Similarly, he described *basti* as organ in middle of *sthulguda, and andkosh, sevani, sukravahasrotas* and *mutrava-hasrotas*. He also expounded *marma* as *mula* (root) of *srotas* (channels).

While describing symptoms of diseases of *marma* he stated that when *hridaya* suffers from trauma (internal or external) – *kasa*

(cough), *swasa* (dyspnea), *balkshaya* (loss of strength), *kanthsosha* (dryness of mouth), *klomakaesha* (pain as *kloma* is drawn down), *jhivanirgama* (protrusion of tongue), *mukhtalusosha* (mouth & palate dryness), *apasmar* (convulsions), *unmad* (altered sensorium or delirium), *sangyanash* (loss of consciousness), etc. may occur, when *shir* (head) suffers trauma – *manyastambha* (neck rigidity), *ardit* (facial paralysis), *chaksuvibhramamoha* (ptosis, rolled eye ball, altered sensorium), *udvestana* (twisting pain), *chetanash* (loss of movement), *kasa* (cough), *swasa* (dyspnea), *hanugraha* (lock jaw), (*mukaa*, *gadgad*) loss of voice or slurred speech, *gandspandanam* (twitches), *lalasrava* (dribbling of saliva), *swarhani* (aphasia), and *vadan-jhivahani* (facial asymmetry) are the symptoms. When *basti* (bladder region) suffers from trauma – *vata*, *varcho* *mutra* *nigrahanam* (retention of urine, flatus & feces), *vankshanmehan* *bastishula* (acute pain in genitalia, groin and bladder region) along with this *bastikundal* (atonic bladder), *udavarta* (deranged bowel movement), *gulma*

(bowel obstruction), *asthila* (feeling of mass) and discomfort in *nabhi* (umbilical region), *kukshi* (abdominal region), *guda* (anal region) and *shroni* (pelvic region) are the symptoms which are described by *acharyacharaka*. He said that if any of the *marma* in *trimarmas* get injured or destroyed then the whole body will suffer and ultimately death is the faith [13]. *Acharyacharaka* had advocated that the *Marmas* must be safeguarded cautiously and for this he considered *Swasthvrita* (healthy regimen) to be the best method [14].

c) **The pranayatanas-** *Acharyacharaka* had considered 10 *pranayatanas in sutra sthan* [8] which are the 10 resort of life namely – two *sankha* (temporal region), three *Marma* i.e. *Hridaya* (heart region), *Basti* (bladder region) and *Shira* (head region), *Kantha* (laryngeal region), *Rakta* (blood), *sukra* (vigor), *Ojas* (essence all *dhatu* -immunity) and *Guda* (anal region). In *sharir sthan* [9] he had advocated these again but with little differences which are – *Murdha* (head region), *Kantha* (laryngeal region), *Hridaya* (heart region), *Nabhi* (umbilical region), *Guda* (anal region), *Basti* (bladder region), *Oja* (essence all *dhatu* -

immunity), *sukra* (vigor), *lohita* (blood), and *mamsa* (muscles) are ten *pranayatana*s, out of these first six are *marma*.

2. In prognostic value of diseases-

- a) He states that if any disease which is present or is related to *Marma* leads to incurability of that disease as in *Sutrasthana* while defining *Yapya Roga* [3]
- b) While describing the eruptions of *pramehapidika* he has mentioned about *marmas* than as a site of them [3].
- c) In *Chikitsasthan* he has declared *granthiroga* which occurs in *marmasthan* as *asaadhya*.
- d) In *chikitsasthan* while describing *visarpachikitsa* he considered the *visarpa* which reaches *marmasthan* as *aasadhya*. In *vishachikitsa* chapter he has said to cut open the part near bite but to prevent *marma* from being injured.

3. **Marma as site of diseases (marma as madhyam rogamarga)-** *Acharyacharaka* emphasized that there are three sites in body for diseases [10] which are *bahya* (peripheral sites), *Madhyama* (middle sites) and *abhayantra* (internal sites) -the *madhayam rogamarga* (middle site) includes *Marma* (vital parts), *Asthi* (bones),

Sandhi (joints) and various *Snayu & Kandara* (ligament, tendon and nerves). Following disease occur in *madhayam rogamarga* (middle site) - *Paksvadh* (Hemiplegia), *graham & aptanaka* (convulsive disorders), *ardit* (facial paralysis), *sosha* (atrophic diseases), *rajyakshama* (tuberculosis), *sandhi –asthishula* (bone & joint pain), *gudabrhansha* (rectal prolapse) and, diseases of *Sira* –(head or central nervous system), *hridaya*–(thorax region i.e. respiratory and circulatory system) and *basti*– (bladder or related to urinary system).

4. **Vatadosha and marma-** *Acharya charaka* explained that *Marmas* has tendency to get vitiated by *vayu* and thus *marma* areas [15] should be protected from *vatadosha*. If it got vitiated then to treat or to control it, the *Basti* (medicinal enema) is the best treatment considered and that's why *Basti* is called as "*chikitsaardha*" (half of the treatment) [16].

5. **Importance to Hridaya (heart region) marma-** *Acharya charaka* has used the term of *marma* for *hridaya* (heart region) in various chapters of *chikitsasthan*. *Acharya* has also considered *hridaya* (heart

region) as *pradhan* (most important) *marma*.

A. Description of *marma* in *sushruta samhita*-

Acharyasushruta has elaborately described the concept of *marma* i.e. Vital points in the body in *sushruta samhita sarira sthana adhyaya* -6 named *pratyekamarma-nirdesh shariram* & in many places in the *samhita* which can be reviewed as follows -

1. Definition of *marma* –

Acharya Sushruta has defined *marma* from two aspects as follows -

- a) **Anatomical definition** – According to him *Marma* is constituted by confluence of *mamsa* (muscles), *sira* (vessels), *snayu* (tendons, ligaments, and nerves), *asthi* (bone), and *sandhi* (joints).
- b) **Physiological and spiritual definition**- *Marmas* are the seats of *Soma*, *Maruta* and *Tejas* (representing the three

dosas in the body) and three *Gunas* (mental forces) i.e. *Raja*, *Satva* and *Tama*, and the *Bhutatma* (supreme power or force controlling the body and mind or life principle). Therefore, any trauma to these *Marmas* can cause death [50].

2. The detailed classification of *marmas*-

Acharya Sushruta has classified *marmas* based on site, anatomical structure, and its traumatic affects. The classification of injury or traumatic effects comprises of *sadyapranhara*, *kalantar-apranhara*, *vaikalyakara*, *vishayaghna* and *rujakara*. He also did anthropometrical study taking the breadth of fingers as the unit of measurement given the name *angulipraman*.

The classification of *marma* described by *acharya sushruta* can be summarized in following tables -

Table 1: Classification of *Marmas* According to site-

S. No.	Sites	No. of <i>Marmas</i>
1.	<i>Sakha</i> (Extremities) (11x4)	44
2.	<i>Udara</i> (Abdomen)	3
	<i>Uras</i> (Chest)	9
	<i>Prista</i> (Back)	14
3.	<i>Urdwajatrugat</i> (head and neck)	37
4.	Total	107

Table 2: Classification according to anatomical structure-

S. No.	Name of Marma	number
1.	<i>Mamsa (muscular dominant)</i>	11
2.	<i>Sira (vascular dominant)</i>	41
3.	<i>Snayu (tendon/ligament dominant)</i>	27
4.	<i>Asthi (bone dominant)</i>	08
5.	<i>Sandhi (joint dominant)</i>	20

Table 3: Classification of *marmas* according to resulting effect of trauma/injury-

S. No.	Categories of <i>Marmas</i>	number	Predominance of constituents	Period of Fatality
1.	<i>Sadyapranhara</i>	19	<i>Agni</i>	One week
2.	<i>Kalantarpranhara</i>	33	<i>Soma and Agni</i>	15 days to one month
3.	<i>Vishalyagna</i>	3	<i>Vayu</i>	May kill due to escape of <i>Vayu</i> or extraction of <i>shalya (foreign body)</i>
4.	<i>Vaikalyakara</i>	44	<i>Soma</i>	May kill due to severe trauma or disability
5.	<i>Rujakara</i>	8	<i>Agni and Vayu orpanchamahabuta</i>	No fatality is considered. Acute pain occurs.

Individual *marmas* according to its site-Table 4: Shakhagata *marma* (*marmas* of upper and lower limbs)-

Name	Number	location	Classification on anatomy	Classification on trauma result	Praman	<i>Viddha</i> (trauma) symptom
<i>Kshipra</i>	4	Between thumb and index finger	<i>Snayu</i>	<i>kalantara</i>	1/2 angula	<i>Askhepa</i> (convulsions), <i>marana</i> (death)
<i>Talahridaya</i>	4	Mid part of planter aspect lower limb and palmar aspect of upper limb, in line with middle finger	<i>Mamsa</i>	<i>kalantara</i>	1/2 angula	<i>Ruja</i> (pain), <i>marana</i> (death)
<i>Kurcha</i>	4	2 angula above <i>kshipra</i>	<i>snayu</i>	<i>vaikalyakar</i>	1/2 angula	<i>Paadasyabhramana</i> , <i>vepana</i> (limb dysfunction)
<i>Kurchashira</i>	4	Below <i>gulpha/manibandha</i>	<i>snayu</i>	<i>rujakar</i>	1 angula	<i>Ruja</i> (pain), <i>sopha</i> (inflammation)
<i>Gulpha</i>	2	Ankle	<i>sandhi</i>	<i>rujakar</i>	2 angula	<i>Ruja</i> (pain), <i>stabhapaadata</i> (paralysis), <i>khanjata</i> (loss of function/limpness)
<i>Manibandha</i>	2	wrist joint	<i>sandhi</i>	<i>rujakar</i>	2 angula	<i>Kunata</i> (loss of function of wrist joint)
<i>Indrabasti</i>	4	Mid of leg/ forearm	<i>Mamsa</i>	<i>Kalantara</i>	1/2 angula	<i>Shonitakshaya</i> (blood loss), <i>marana</i> (death)
<i>Jaanu</i>	2	Knee	<i>sandhi</i>	<i>Vaikalyakar</i>	3 angula	<i>Khanjata</i> (loss of function/limpness)
<i>Kurpara</i>	2	elbow joint	<i>sandhi</i>	<i>Vaikalyakar</i>	3 angula	<i>Kuni</i> (loss of function of elbow joint)
<i>Aani</i>	4	3 angula above knee/ elbow	<i>snayu</i>	<i>Vaikalyakar</i>	1/2 angula	<i>Shophabhivridhi</i> (increased inflammation) <i>stabdhasakhthita</i> (loss of function)
<i>Urvi</i>	4	Mid of thigh/ arm	<i>sira</i>	<i>Vaikalyakar</i>	1 angula	<i>Shonitakshaya</i> (blood loss), <i>sakthishosha</i> (limb atrophy)
<i>Lohitaksha</i>	4	Above <i>urvi</i> in root of thigh / arm	<i>sira</i>	<i>Vaikalyakar</i>	1/2 angula	<i>Marana</i> (death), <i>pakshaghat</i> (hemiparalysis)

<i>Vitapa</i>	2	Between inguinal region and testes in lower limb	<i>snayu</i>	<i>Vaikalyakar</i>	1 angula	<i>Shandata (sterility), alpasukrata (loss of libido/decreased gamete formation)</i>
<i>kakshadhara</i>	2	At axilla in upper limb	<i>snayu</i>	<i>Vaikalyakar</i>	1 angula	<i>pakshaghat (hemiparalysis)</i>

Table 5: *Marmas* of *udara* and *urah* region (abdomen and thorax)-

Name	Number	Location	Anatomical classification	Classification on trauma result	<i>Praman</i>	<i>Viddha</i> (trauma) symptom
<i>Guda</i>	1	Organ of fecal excretion, related to large intestine	<i>mamsa</i>	<i>Sadyapranhar</i>	1/2 angula	<i>Sadyomaran (immediate fatality)</i>
<i>Hridaya</i>	1	Between breasts, seat of <i>satva, raja and tama</i>	<i>sira</i>	<i>Sadyapranhar</i>	Measure of self-palmar region	<i>Sadyomaran (immediate fatality)</i>
<i>Nabhi</i>	1	Between <i>aamashaya</i> and <i>pakvashaya Mool</i> of <i>siras</i>	<i>sira</i>	<i>Sadyapranhar</i>	Measure of self-palmar region	<i>Sadyomaran (immediate fatality)</i>
<i>Basti</i>	1	It lies in <i>kati</i> region (lower abdomen) and it is less muscular and vascular, urine lies here	<i>snayu</i>	<i>Sadyapranhar</i>	Measure of self-palmar region	<i>Sadyomaran (immediate fatality)</i>
<i>Stanmoola</i>	2	2 angula below both <i>stana</i>	<i>sira</i>	<i>Kalantarpranhar</i>	1 angula	<i>Kaphapurnakosthata (fluid in cavity) and marana (death)</i>
<i>Stanrohita</i>	2	Above nipples bilaterally	<i>mamsa</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Lohitapurnakosthata (blood in cavity) and marana (death)</i>
<i>Apalaapa</i>	2	On chest and below the level of spinous process of scapula bilaterally	<i>sira</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Raktapuyabhav (blood and pus in cavity) and marana (death)</i>
<i>Apstambha</i>	2	On chest bilaterally, <i>vata</i> carrying structure	<i>sira</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Vatapurnakosthata (air in cavity) and marana (death)</i>

Table 6: *Marmas* of *prista* (back)

Name	Number	Location	Anatomical classification	Classification on result	<i>Praman</i>	<i>Viddha</i> (trauma) symptom
<i>Katikatarun</i>	2	Bilaterally on back and on ileum	<i>asthi</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Shonitkshaya (blood loss), pandu (pallor), vivarna (discolouration), heenrupa (loss of lusture), marana (death)</i>
<i>Kukundar</i>	2	Bilaterally on back, located on outer side of <i>jaghan</i>	<i>sandhi</i>	<i>Vaikalyakar</i>	1/2 angula	<i>Sparshagyan (loss of sensation), adahkayeche staupghat (loss of lower limb functions)</i>
<i>Nitamba</i>	2	Bilaterally on upper side of hip bone and covering the <i>ashayas</i>	<i>asthi</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Adah kaya sosha (lower body atrophy), daurbalya (weakness), marana (death)</i>
<i>Parshvasandhi</i>	2	Bilaterally on back	<i>sira</i>	<i>Kalantarpranhar</i>	1 angula	<i>Lohitpurnakosthata (blood in cavity), marana (death)</i>
<i>Brahati</i>	2	Bilaterally on back and in line with <i>stan moola</i>	<i>sira</i>	<i>Kalantarpranhar</i>	1/2 angula	<i>Shonitapravitti (excessive loss of blood), marana (death)</i>

<i>Ansaphala k</i>	2	Upper side bilaterally on back in scapular region	<i>asthi</i>	<i>vaikalyakar</i>	1/2 angula	Loss of muscle bulk of upper limbs
<i>Ansa</i>	2	Between shoulder & neck at back bilaterally	<i>snayu</i>	<i>vaikalyakar</i>	1/2 angula	Stabdhabahuta (upper limb dysfunction)

Table 7: Urdvajatrugata Marmas that is marmas above clavicle (head & neck)

Name	Number	Location	Anatomical classification	Classification on result	Praman	Viddha (trauma) symptom
<i>Dhamini (nila&manya)</i>	2+2	Each bilateral to kanthnadi in neck	<i>sira</i>	<i>vaikalyakar</i>	Measure of self-palmar region	<i>Mukata (aphasia), swarvaikritam (altered speech/voice), aroopgrahita (not able to perceive light)</i>
<i>Matrika</i>	8	Four on each side of neck	<i>sira</i>	<i>Sadyapranhar</i>	Measure of self-palmar region	<i>sadyomarana (immediate fatality)</i>
<i>Krikatica</i>	2	Joint of head and neck	<i>sandhi</i>	<i>vaikalyakar</i>	1/2 angula	<i>Chalmurdhata (unstable head)</i>
<i>Vidhur</i>	2	Posterior & inferior to ears on each side	<i>snayu</i>	<i>vaikalyakar</i>	1/2 angula	<i>Badhirya (deafness)</i>
<i>Phana</i>	2	Both sides in nasal passage	<i>sira</i>	<i>vaikalyakar</i>	1/2 angula	<i>Gandhaagyan (anosmia)</i>
<i>Apanga</i>	2	Below & outside of tail of both eyebrow	<i>sira</i>	<i>vaikalyakar</i>	1/2 angula	<i>Andhya (blindness), dristiupghat (vision loss)</i>
<i>Aavarta</i>	2	Above both eyebrow	<i>sandhi</i>	<i>vaikalyakar</i>	1/2 angula	<i>Andhya (blindness), dristiupghat (vision loss)</i>
<i>Sankha</i>	2	At tail end of eyebrows, between ears and forehead on both side	<i>asthi</i>	<i>Sadyapranhar</i>	1/2 angula	<i>Sadyomarana (immediate fatality)</i>
<i>Utksepa</i>	2	Above sankha and near hairs of head	<i>snayu</i>	<i>vishalyaghna</i>	1/2 angula	If foreign body in logged inside, then person may survive but if extracted then the person dies
<i>Sthapani</i>	1	Between both eyebrows in middle	<i>sira</i>	<i>vishalyaghna</i>	1/2 angula	If foreign body in logged inside, then person may survive but if extracted then the person dies
<i>Simanta</i>	5	Head sutures	<i>sandhi</i>	<i>Kalantarapranhara</i>	Measure of self-palmar region	<i>Unmaada (altered sensorium), bhaya (phobia), chittanash (delirium), marana (death)</i>
<i>Sringhatak</i>	4	Between the nourishing siras of grana, karna, netra and jihwa	<i>sira</i>	<i>Sadyapranhar</i>	Measure of self-palmar region	<i>sadyomarana (immediate fatality)</i>
<i>Adhipati</i>	1	Upper side of head where hairs make circular formation	<i>sandhi</i>	<i>Sadyapranhar</i>	1/2 angula	<i>sadyomarana (immediate fatality)</i>

3. Importance in surgical science as whole-

- a) *Acharya sushruta* has acknowledged *marmas* as *shalyavishyardha* (half part of surgical science) [19].
- b) *Acharya sushruta* has mentioned about eight *marma* in *chikitsasthan* 7th chapter. Here he has told to

protect these eight *marmas* (*sewani, sukraharani, phalasrota, guda, mutrapraseka, mutra vaha, yoni* and *basti*) during surgical procedures of calculus removal from bladder [21].

4. Importance in parasurgical procedures-

- a) **In kshar application (alkaline cauterization)**- While describing procedure of *kshar karma* he has mentioned about *marmasthan* along with other structures which should be prevented from *kshar* application. The other structures are *sira*, *snayu*, *sandhi*, *tarunasthi*, *sewani*, *dhamini*, *gala*, *nabhi*, *nakha*, *antahshopha*, *srotas*, less muscular places and all eyes diseases except *vartma roga* [22].
- b) **In shalya (foreign body) extraction**- In *sutrasthan* 27th chapter he has said that if a person fainted during *shalya* or foreign body extraction then he should be treated with cold water and his *marma* parts like *hridaya*, etc should be protected with *hridyaya* (cardiotonic) or same type of medications [29].
- c) **In siravedhan (venipuncture)**-
- *Acharya sushruta* had mentioned the *avedhyasiras* i.e. the *Sira* (vessel) that should never punctured in any case, in which he had described eight *Matrika*, two *Nila* and two *Manya*- these twelve vessels have been mentioned as *Marma* (fatal spots) adding to *Krikatika* and *Vidhura* make up the number of *marma* sixteen in the neck [41].
 - Along with this *Acharya* had described treatment of various diseases by *siravedha* (venipuncture) near the various *Marmas* [42] that is in *Padadaha* (burning sensation in the soles), *Padaharsha* (tenderness / tingling sensation in the soles), *Cippa* (withlow), *Visarpa* (erysipelas), *vatarakta* (gout), *Vatakantaka* (sprain of the ankle), *Vicharchika* (a skin diseases) and *Padadari* (fissures of soles), etc, the vein punctured here is situated two *angula* (4 cm) above the *Kshipra Marma* (present in between the big toe and its next toe) which should be punctured using *Vrihimukhashastra* (trochar, thick needle). In *Slipada* (*elephantiasis/filariasis*) treatment the *siravedhan* has said to be done below *gulpha sandhi* (ankle joint) [43]. [42] In *Krostukshirsha*, *Khanja*, *Pangu* and pains caused by *Vata*, puncturing should be done in the *Jangha* (calf region) four *Angula* above the *Gulpha* (ankle joint). In *Apachi* (lymphadenitis) it should be done at two *Angula* below the *Indrabasti Marma*. In *Grdhrasi* (*sciatica*) it should be done four *Angula* either above or below the knee joint. In *Galaganda* (*lymphadenitis*) the vein

which is present at the root of thigh should be punctured. In disease the *Pleeha* (spleen) puncturing should be done especially in the left arm, either at the inner side of the *kurpara marma* (elbow joint) in the centre of the arm or in the area between the little and ring fingers. In *Yakriddodara* (liver enlargement) and *Kaphodara* (ascitis), puncturing should be done specially in the right arm at the same places. Even in cough and dyspnea also puncturing should be done in the same places. In *Apachi* it will be similar like *Grdhrasi* that is at *Kurpara*. In *Dakodara* (ascitis) it should be done below the umbilicus, four *Angula* left side of the raphe of the abdomen.

5. Importance in other therapeutic procedures-

In sutra sthan 18th chapter he has told about application of aalepa (local medical application) in *marma sthan* and *guhya sthan* [23].

6. In describing vranvastu (constituents of wound)-

He has considered *marma* along with *twacha*, *mamsa*, *sira*, *snayu*, *asthi*, *sandhi* and *kosthaas* eight *vrana vastu* [24].

7. In prognosis of several diseases-

- a) After describing each *marma* in *sharir sthan* he has said that diseases occurring in the *marmas* are difficult to cure and carries poor prognosis²⁰.
- b) In sutra sthan 23rd chapter he has considered *vrana* (wound) present in *marma* and *jangh asthiis* difficult to cure [25].
- c) If any disease occurs in relation to *Marma* it was considered as incurable or difficult to cure. As described in *nidansthan* 6th chapter in patients with bad prognosis of *Prameha Pidika* (diabetic eruptions) [30].
- d) While describing about *arbuda* (mass) in *nidansthan* he has mentioned about *arbuda* occurring at *marma* site is incurable [31].
- e) In *granthi* (cyst) [32], *apache* (lymahadenopathy) [33], *valmika* [33] and *galavidradhi* (abscess) [35] *chikitsa*, *acharya* has directed for surgical intervention and *agni karma* (cautery) in those type which are not on *marmas* than otherwise it will not be successful.
- f) While describing types of *Klaibya* (impotency) he said that *Sahaja* (congenital), and *Marmacheda* (trauma to vital organs such as tests, seminal tubules, etc.) types are incurable and the remaining are to

be treated with methods which are opposite to the cause [36].

8. Traumatic Sign & Symptoms of *marmas*-

- a) In *sharer sthan acharya sushruta* has given traumatic clinical manifestations of each individual *marma* as described in above tables.
- b) In *sutra sthan 25th* chapter he has described about symptoms when half of the ten that is five *marma sthan* get injured. The symptoms are *bhrama* (delirium), *pralapa* (altered sensorium), *patanam* (physical weakness), *pramoha*, *vichestanan*, *murchanam* (unconsciousness), *sastrangata* (convulsions involving limbs), *urdhwaswas* (respiratory difficulty), *trivrarujovatakritashca* (severe pain sensations due to vitiated *vata*), (*mansodakabhamrudhirasca*) bleeding and discharge of fluid with colour of washed muscular tissue and *sarvendriyarthoaparam* (malfunctioning of sense organs) [26].
- c) Again in *sutra sthan 25th* chapter he has described symptoms which occur when anatomical structures in a *marma* is injured like if muscular tissue is damaged which is dominant in *mamsa marma* then there is *sparshnajanati* (loss of sensation),

vivartnata (discolouration of skin) and *pandu* (anemic symptoms). When *siramarma* gets injured then there is *prabhutamraktamsravet* (leakage of fresh blood in huge amount), therefore, *vata* gets vitiated which causes different other diseases. When *snayumarma* gets injured then there is deformed *kobjyam* (physical structure of body/kyphosis), *shariravyavaavasad* (weakness and flaccidity in body parts), *kriyasvaasakti* (difficulty in performing normal routine works), *ruja* (severe pain) and *chiradvranarohit* (delayed healing of wounds). When *sandhi marma* gets injured then there is *sophativridhistumularuja* (increased swelling with severe pain), *balakshaya* (weakness), *parvasubheda sophasandhisva chalachalesu* (reduced functioning of joints due to aggravation of pain and swelling on movements). When *asthimarma* gets injured then there is *ghorruja* (severe pain all day and night), *sarvasvasthi-sunashantirasthi* (there is no relief in a condition), *trishna* (thirst), *angasa-dsvasthiruksha* (pain in other parts, swelling and dryness) [27].

- d) In *sutra sthan 26th* chapter he has said that if a *shalya* or foreign body

gets logged in a *marma* then there are symptoms same which occur due to injury on these points [28].

9. Relation of *marmas* with *visha* (toxicological manifestations, prognosis & intervention)-

- a) In *kalpasthan* 2nd chapter while describing *gunas* of *visha* (poisons/toxins) he has said that due to the *tikshnaguna* of *visha*, it loosens *marma* bindings [37].
- b) In 3rd chapter of *kalpasthan* he has not indicated the treatment of snake bite if it had occurred on *marmasthan* as it carries poor prognosis [38].
- c) In 8th chapter of *kalpasthan*, while describing sign and symptoms of venomous spider bite he has said that at 6th day the venom of spider spreads in whole body and overtakes the *marmas* (vital parts) thus carries poor prognosis³⁹. In same context he had considered use of surgical intervention on non *marma* spots [40].

DISCUSSION

Marma as ancient regional anatomy –

Both *acharya charaka* and *sushruta* accepted 107 *marma* out of which *charaka* hailing from medicine branch focuses only on three *marma* i.e *hridaya*, *basti* and *shiras* he was more oriented towards the internal trauma of body i.e. diseases caused by vitiation of doshas which ultimately effect

these three *marma* while *acharyasushruta* being a surgeon has elaborately described and classified all 107 *marma* of the body from different aspects like based on location, dominant anatomical constituents, traumatic consequences based on the properties the *marma* processes and measurements or dimensions. This seems like *marma* was a way of teaching regional anatomy to an aspiring surgeon as mastering over *marma* science leads a budding surgeon to have command over regional anatomy and its clinical aspects of the region of the body which enables an individual to become a skilled surgeon.

Marma as a science with subtle physiological concept –

The fundamental concept based on which *Ayurveda* defines all aspects of a living creature is *tridoshai. evata, pitta* and *kapha*. This *tridosha* theory is said to be derived from *panchabhuta* theory of *vedas* as *Ayurveda* is *upaveda* of *atharvaveda*. In all chapters of *sushrutasamhitatridosha* theory was followed with terms *vata, pitta* and *kapha* while in *pratekamarmasharir* chapter *acharya* has defined the properties of *marma* with term like *saumyaguna, agneyaguna* and *vayavaguna* which is correlated with *kapha, pitta* and *vata* by the scholars but this correlation doesn't seem justified as dominant place of *tridosha* in body is already described as *vata* is dominant in lower abdomen and pelvis,

pitta in thoracic region and *kapha* in head and neck region. Also, while describing the important physiological constituent of *marma* *acharya* used terms like *Soma*, *Maruta*, *Tejas*, *satva*, *raja*, *tama* and *Bhutatma*. It seems like *marma* science is based on more subtle physiological concept than *tridosha* which may be explored to understand the body in more fundamental ways, which will certainly open new vistas for research in this field of *marma* science.

Hridaya most important marma in charakasamhita –

Acharya charaka hailing from medicine branch considered *marma* to be 107 in the body and also described the concept of *pranayatana* but focuses on three *marma* i.e. *shir*, *hridaya* and *basti* as he sticks to the theory of *tridosha* and considered *kapha*, *pitta* and *vata* to be dominant in *shir*, *hridaya* and *basti* respectively. *Acharya charaka* has considered *hridaya* to chief (*pradhan*) *marma* out of the three *marma* as he enumerated *hridaya* to be site of ten *dhamani*, *prana*, *apana*, *manas*, *buddhi*, *chetna* and *mahabutas*. He has considered *hridaya* so important that he used the term *marma* for *hridaya* in general at many places in *samhita*. He considered *vata* to be most important entity to cause internal trauma to these *marma* and since *basti* therapy is most suitable for subsidence of *vata* therefore he considered *basti* therapy as *chikitsaardha* (half of all

treatment modalities mentioned) in *Ayurveda*.

Marma with metaphysical /spiritual dimensions –

Acharya charaka while describing three *marma* expounded that *hridaya* is seat of ten *dhamani*, *prana*, *apana*, *manas*, *buddhi*, *chetna* and *mahabutas*. Also, *acharya sushruta* has detailed that all *marma* are seat of *soma*, *maruta*, *tejas*, *satva*, *raja*, *tama*, *bhutatma* and *prana*. These constituent are surely metaphysical and can be understood when one explore within and reaches an experiential stage of understanding the holistic dimension of individual and universe/ nature as described in the *charka samhita* while explaining importance of *yoga* and the tools and techniques for attaining *moksha* (salvation).

Clinical aspects of marma -

- a. **Diagnostics** -The elaborated clinical sign & symptoms of trauma or diseases of /near *marma* as described, at that point of time, in *sushruta samhita* can help to diagnose the involvement of *marma* & hence its treatment plan.
- b. **Prognostics** - The type of *marma* involved in a disease or trauma helps to prognosticate the patient as described elaborately in both *charaka* and *sushruta samhita*. All prognosis of different diseases or trauma described in both literatures

may not hold true in this era of advance life support and medical science but certainly compel us to appreciate the comprehensive medical science knowledge prevailing thousands of years ago.

- c. **Management of diseases** – As discussed earlier that understanding of *marma* science is mandatory for surgeons as it imparts the expertise over regional anatomy resulting to lesser chances of mistakes while performing surgery or parasurgical procedures like *kshar karma*, *agni karma* and *siravedh*. He given so much importance to *marma* science that he called it as *shalyavishyardha* i.e. half of surgery.

As evident from the review that *acharya sushruta* has utilized these *marma* region for treatment of many diseases through *siravedh* (venipuncture) near the *marma* which clearly depicts that these regions of the body are having special property of vitality which can be utilized for treatment of diseases and also prove fatal if these region are traumatized during the procedure.

Now a days the *marma* region are utilized for treatment of diseases or for maintaining health through *marma* therapy, *marma* massage,

marmapranayama, etc which is emerging applied aspects of the *marma* science.

The above discussion shows that knowledge *marma* science is very beyond than we know it in current scenario. Much part of this science of *Ayurveda* is in practice although proper exploration is the need.

CONCLUSION

The science of *marma* is an ancient concept described in ancient literature of *Ayurveda* which contains a vast knowledge that just not deals with the structural aspect of the body but it encompasses all aspect of life sciences. It is a holistic science which includes knowledge of regional anatomy, physiology as well as metaphysical dimension of life. This knowledge was utilized by both *acharyas charak* and *sushruta* in prognosis and diagnosis of diseases or trauma of body as well as in management of diseases or trauma especially by *acharya sushruta*. This area of *Ayurveda* needs to be explored for its potentials and limitations in prognosis, diagnosis & management of diseases.

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