

AN ANATOMICAL CONCEPT OF MARMA

Behera Sunita^{1*} and Chanana Amrish²

¹PG Scholar, PG Dept. of Rachana Sharir, Ch. Brahm Prakash Ayurved Charak Sansthan,
New Delhi.

²Assistant Professor, Dept. of Rachana Sharir, Ch. Brahm Prakash Ayurved Charak Sansthan,
New Delhi.

Article Received on
20 Sept. 2018,

Revised on 07 Oct. 2018,
Accepted on 28 Oct. 2018

DOI: 10.20959/wjpr201818-13666

Corresponding Author*Dr. Amrish Chanana**

PG Dept. of Rachana Sharir,
Ch. Brahm Prakash Ayurved
Charak Sansthan, New
Delhi.

ABSTRACT

Marma science is one of the important aspects of Ayurveda. *Marma* are vital & vulnerable spots or areas present all over the body. The term *Marma* is derived from “*Mri*” dhatu that means which causes death or deformity on injury. These areas are formed by the confluence of five important structure ie *Mamsa* (*muscles*), *Sira* (*vessels*), *Snayu* (*ligaments, tendons and other fibrous structures*), *Asthi* (*bones*) & *Sandhi* (*joints*). *Tridosha*, *Triguna* along with *Aatma* (Soul) also reside in *Marma* areas. The knowledge of *Marma* is very essential for surgeons because any mistake during surgical procedure at *Marma* areas can cause death of the patient. In modern anatomy, an extensive

description regarding course and relations of each artery, vein and nerve is given which protects the surgeon from any unwanted damage of structure during surgical procedure. The anatomy described in Ayurveda is devoid of such information but the extensive description of *Marma* areas fulfills this lacuna up to some extent for Ayurvedic surgeons. Ancient scholars of Ayurveda have described a total of 107 *Marma* sites over human body classifying them under various categories based on position, structure, effects of injury & measurement. It is pertinent to mention here that the areas of *marma* which are advised to protect from any kind of injury in Ayurveda are also used for treatment of various diseases by Indian practitioners from a very long time. When these points are gently stimulated, bring energy directly into our body. This contrast approach of these *marma* areas gives it a scope of research.

KEYWORD: *Marma*, *Mamsa*, *Sira*, *Snayu*, *injury*.

INTRODUCTION

The word *Marma* is derived from “*Mri dhatu*” + “*Manin*” prataya which means which causes death^[1], *Jeeva sthana*, *Sandhi sthana*.^[2] The *Marma* science is one of the exclusive concepts of Ayurveda. *Marma* are the site of “*Prana*” & these areas are spread all over the body i.e head, neck, trunk & extrimites.^[2] It is the spot of the body which exhibits a peculiar pulsation and cause pain on pressure.^[3] These are formed by confluence of five important element or structure like *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi*.^[4] Sushruta has also described that *Vatta*, *Pitta*, *Kapha* as well as *Sattva*, *Raja* and *Tama* along with *Soul*^[5], *Chetana dhatu*^[6] reside in *Marma*, that is why trauma over *Marma* causes severe pain. Injury to these areas causes aggravation of *doshas* which destroy mind and body and finally death results. *Marma* are very important from traumatological point of view, any trauma at these points can cause death or pain equivalent to pain of death. So Sushruta and Astanga Hridayam have described that “*मारयतिती मर्म*”^[7] and “*मरणकारित्वानमर्म मरण सदृशं दुःखायित्वाहा*”^[8]. Some other symptoms may also find on trauma at *Marma* areas i.e giddiness, delirium, fainting, delusion, loss of activity of body parts, semi-consciousness, increase of body temperature, weakness, severe pain, cessation of activity of all the sense organ, numbness, hallucination, loss of blood (resembling mutton wash flowing out)^[9], coldness, coma, vomiting, restlessness, burning sensation in the heart, depression (person feels as entering into emptiness) and dyspnea.^[10] In present era it is observed that the injuries on these areas produce temporary or permanent, structural or functional deformity even after best treatment.

Classification of *Marma*

(a) Classification of *Marma* based on location

There are 107 *Marma* in the body including *Shakha* (limbs) & *Skandha* (trunk & neck).^[11] There are eleven *marma* points in each *Bahu* (*upper limb*), eleven in each *Sakthi* (*Lower Limb*), twelve in *Udara*(*amdomen*) and *Ura* (*chest*), fourteen *Marmas* in *Prushta*(*back*) and thirty-seven in *Urdha jatrugat* (*head and neck*).^[12]

Name of <i>Marma</i>	Sushruta
1. <i>Shakha gata Marma</i> (<i>Marma</i> in four limbs)	11 in each extremity - 11X4=44
2. <i>Udara Ura Marma</i> (<i>Marma</i> in chest & abdomen)	12
3. <i>Prushta Marma</i> (<i>Marma</i> in back)	14
4. <i>Urdha jatrugat Marma</i> (<i>Marma</i> of head & neck)	37
Total	107

Name of the Shakhagata Marma and their total numbers (Marma of extremities)^[13]

1. *Kshipra Marma* (located between thumb & fingers in the upper limb and between the big toe & adjacent toe in the lower limb)-4
2. *Talahridaya* (located in middle of palm/sole)-4
3. *Kurcha* (above to the kshipra marma ie above to the junction between the thumb & index finger in the upper limb and above to the junction between the big toe & first toe in the lower limb)-4
4. *Kurchashira* (located distal to the wrist joint in upper limb & distal to the ankle joint in the lower limb)-4
5. *Manibandha, Gulpha* (located at the wrist joint and ankle joint)-4
6. *Indravasti* (located just below the middle of the forearm and leg)-4
7. *Kurpar, Janu* (located at the elbow joint and knee joint)-4
8. *Aani* (located three fingers above *kurpar marma*/elbow joint in the upper limb & three finger above *janu marma*/knee joint in the lower limb)-4
9. *Urvi (Bahvi* in upper limb/*Urvi* in the lower limb)-located in the middle of thigh in lower limb & in the middle of arm in upper limb)-4
10. *Lohitaksha* (located above the Urvi marma and below the hip joint i.e at the root of lower limb & below the lower part of shoulder joint in upper limb)-4
11. *Kakshadhara, Vitapa* (located between chest & axilla-both in Right & left side, *Vitapa Marma* represent *kakshadhara* in lower limb located between right testis & groin and between left testis & groin) -4.

Udara Ura Marma/Marma of Madhya Sharir (trunk-Thorax & Abdomen).

Name of Marma	Sushruta
<i>Uragata Marma (Marma of Thorax)</i>	9
<i>Udaragata Marma (Marma of Abdomen)</i>	3
<i>Prushtagata Marma (Marma in Back)</i>	14
Total	26

Marma of Thorax

1. *Hridaya* (located between the two nipples)-1.
2. *Stanmoola* (located two fingers below nipple, one on each side of chest)-2.
3. *Stanrohita* (located above nipple, one on each side of chest)-2.
4. *Apalapa* (located below the acromion process of scapula, on both side)-2.
5. *Apastamb* (located one on each side of thorax)-2.

Marma of Abdomen

1. *Guda* (located at the distal part of the large intestine)-1
2. *Vasti* (located in pelvic cavity and reservoir of urine)-1
3. *Nabhi* (Navel)-1.

Name and total numbers of Back^[14]

1. *Katikatarun* (located on the pelvic bone on either side of the vertebral column)-2
2. *Kukundar* (located in the gluteal region at the lateral of ischium bone)-2
3. *Nitamba* (located above pelvic bone)-2
3. *Parshvasandhi* (located between flank and pelvic bone)-2
4. *Bruhathi* (located on the lateral to the vertebral column, at the level of Sthanamula Marma)-2
5. *Anshaphalak* (located on the upper part of the back, on each side of vertebral column in scapular region)-2
6. *Ansha* (located between the shoulder and neck above the scapular region)-2

Urdha Jatrugata Marma (Marma of Head & Neck)

There are total of 37 *Marma* scattered over the head & neck.

Name of Marma	Sushruta
1. <i>Greeva Marma (Marma of Neck)</i>	14
2. <i>Siragata Marma (Marma of Head)</i>	23
Total	37

Marma of Neck

1. *Dhamniyan (Nila-2, Many-2, located in the neck on each side lateral to Matraka)*-4.
2. *Matrakayan/Kanta sira* (located in the neck, 4 on each side of neck on the side of trachea)-8.
3. *Krikatika* (located at the side of junction of head & neck or base of the skull bone i.e occipital protuberance, on both side)-2.

Marma of Head^[15]

1. *Vidhura* (located postero-inferior to the ear, 1 on each side)-2.
2. *Phan* (located in the saddle/roof of nose on the olfactory tract on both side)-2.
3. *Apanga* (located on the lateral angle of eye on both side i.e outer canthus)-2.
4. *Avarta* (located just above the lateral part eyebrow, on both side)-2.

5. *Utkshepa* (located at the level of hair line of scalp, above temporal region, 1 on each side)-2.
6. *Shankha* (located between ear & forehead)-2.
7. *Sthapani* (located in between the two eye brows)-1.
8. *Simanta* (sutural joint present over the skull)-5.
9. *Shrungataka* (it is situated inside the skull at the lateral aspect of body of sphenoid bone where cavernous sinus is situated that nourishes the sense organ i.e nose, ear, eye & tongue)-4.
10. *Adhipati* (located at superior/top part of intra cranial portion where superior sagittal sinus, straight sinus, occipital sinus, & transverse sinus meets)-1.

(b) Classification of *Marma* based on effect of injury^[16]

Depending upon the effect of injury *Marma* are classified into 5 types. They are

1. *Sadyo Pranahara Marma*- Injury to this *Marma* causes immediate death.
2. *Kalantara Pranahara Marma*-Injury to this *Marma* leads to gradual death.
3. *Vaikalyakara Marma*-Injury leads to deformity.
4. *Vishalyaghna Marma*-These *Marma* are fatal after removal of foreign body.
5. *Rujakara Marma*- Injury to this *Marma* leads to pain.

1. *Sadyo Pranahara Marma*

They are **19** in number. These *Marma* are predominantly composed of *Agni Mahabhuta* (fire element), by effect of *Agni* it causes death in quick time after injury (within 7 day). 19 emergently fatal *Marma* are

<i>Shrungataka</i> -4	<i>Adhipati</i> -1
<i>Matruka</i> -8	<i>Guda</i> -1
<i>Vasti</i> -1	<i>Nabhi</i> -1
<i>Shamkha</i> -2	<i>Hridaya</i> -1

2. *Kalantara Pranahara Marma*

They are **33** in number. These *Marma* are made up of *Agni* (fire) & *Jala* (water) *Mahabhuta*, *Agni* acts and effects quickly and *soma* acts & effects slowly. Due to the association of water element, trauma on this *Marma* causes death after some day i.e 15day or more but in case of *Kshipra Marma* death don't occur within 15 days. These 33 *Kalantara Pranahara Marmas* are-

<i>Stanamula</i> -2	<i>Stanarohita</i> -2	<i>Apalapa</i> -2
---------------------	-----------------------	-------------------

*Apastambha-2**Seemanta-5**Talahridaya-4**Kshipra-4**Indravasti-4**Kateekatarun-2**Parshwasandhi-2**Brihati-2**Nitamba-2*

3. *Vishalyaghna Marma*

They are **3** in number. These *Marma* kill the person once the foreign body is removed from the site of *Marma*. These *Marma* are *Vayaviya* in nature (predominance of *Vayu Mahabhuta*), removal of *shalya* from these *Marma* causes loss of *Vata Dosha* so patient doesn't survive or death occur. These *Vishalyaghna Marmas* are.

*Utkshepa-2**Sthapani-1.*

4. *Vaikalyakara Marma*

They are 44 in number. These *Marma* are predominantly formed by *Soma guna*. Due to *Somya* (predominance of *Aap Bhuta*) nature, supports life by its stability (*Sthirtva*) and cold (*Shaitya*) properties. Therefore, these *Marma* don't cause death on injury but will surely cause deformities. These *Vaikalyakara Marma* are.

*Lohitaksha-4**Aani-4**Jaanu-2**Bahvi-2**Urvi-2**Koorcha-4**Vitapa-2**Kurpara-2**Kukundara-2**Kakshadhara-2**Vidhura-2**Krukatika-2**Ansha-2**Anshaphalaka-2**Apanga-2**Neela-2**Phan-2**Aavarta-2*

5. *Rujakara Marma*

They are **8** in number. Injury to this *Marma* causes severe pain. They are predominantly composed of *Vayu & Agni guna* (fire & air elements). Due to presence of *Agni* and *Vayu* they are painful (*Rujakara*). These *Rujakara Marmas* are.

*Gulpha-2**Manibandha-2**Kurchasira-4*

Predominance of Mahabhuta in Marma

*Sadyo pranahara Marma-Agni,**Kalantara Pranahara- Agni+ Soma**Vishalyaghna Marma-Vayu,**Vaikalyakara Marma-Soma**Rujakara Marma- Agni+ Vayu,*

(C) Classification of Marma based on Composition

Marmas are formed by conglomeration of 5 important structure like *Mamsa*, *Sira*, *Snayu*, *Asthi* & *Sandhi* and they are categorized by the name depending upon the predominant structure present in that Marma like *Mamsa Marma* (Muscular Marma), *Sira Marma* (Vascular Marma), *Snayu Marma* (Ligamentous Marma) etc.^[17]

Name of Marma	Sushruta	Vagbhatta
1. <i>Mamsa Marma</i>	11	10
2. <i>Sira Marma</i>	41	37
3. <i>Snayu Marma</i>	27	23
4. <i>Asthi Marma</i>	8	8
5. <i>Sandhi Marma</i>	20	20
6. <i>Dhamani Marma</i>		9
Total	107	107

1. Mamsa Marma

The predominant structure in this Marma is *Mamsa* (muscular structure). They are 11 in number, these are.

1. *Talahridaya-4*: - **In hand**- Predominant anatomical structure are Palmar aponeurosis, flexor digitorum profundus muscle and extensor digitorum, lumbricals. Other structures are superficial & deep palmar arch, interossei muscle, branches of median nerve. **In foot**- Predominant structure is Plantar aponeurosis, flexor digitorum brevis and longus muscle, adductor hallucis. Other structures are plantar arch, medial and lateral plantar nerve.

2. *Indravasti-4*: - **In hand**- predominant structures are Flexor pollicis longus, extensor carpi radialis, brachioradialis and pronator teres muscle. Other structures are radial & median nerve, radial artery and tributaries of cephalic vein. **In foot**- Calf muscles i.e Gastrocnemius, soleus and plantaris muscle. Other structures are posterior tibial artery, vein and nerve.

3. *Guda-1*: - Predominant anatomical structures are Sphincter ani internus, sphincter ani externus and externus, corrugator cutis ani muscle. Other structures are internal and external venous plexus, superior and inferior rectal artery.

4. *Stanrohita-2*: - Predominant anatomical structures are intercostal muscles, pectoralis major and minor, anterior and posterior intercostal artery, branches from thoracoabdominal artery, lateral thoracic artery and internal thoracic artery.

Bidha Lakshyan: - Injury to *Mamsa Marma* causes oozing of blood in large amount, due to loss of blood there is vertigo, thirst, fainting, breathlessness, hiccup & death occur.^[18]

2. *Sira Marma*

It is predominantly made up of *Sira* (Blood vessel). They are **41** in number, these are.

1. *Neela-2*: - The predominant anatomical structure is internal jugular vein, recurrent laryngeal nerve, primary rami of 4th, 5th & 6th cervical nerve.
2. *Manya-2*: - Predominant structure is external carotid artery, other structures are jugular vein, glossopharyngeal, lingual nerve and accessory nerve.
3. *Matruka-8*: - Predominant structures are blood vessels of neck i.e Branches of common carotid artery, internal jugular vein. Other structures are vagus and phrenic nerve, thyroid gland, tonsil and tongue.
4. *Srungataka-4*: - The predominant anatomical structures are Cavernous and inter-cavernous sinuses. Other structures are ophthalmic nerve, supra orbital artery.
5. *Apanga-2*: - Predominant structure is Zygomatic temporal vessels and Zygomatic facial vessels i.e Short & long posterior ciliary and Anterior ciliary arteries and veins. Other structures are optic and ciliary nerve, lacrimal nerve, sphenoid, maxillary and zygomatic joint.
6. *Sthapanee-1*: - Predominant anatomical structure is anterior end of superior sagittal sinus attached to the crista galli, supraorbital and supratrochlear artery, anterior facial vein. Other structures are supra orbital nerve, frontal bone.
7. *Phan-2*: - Predominant structures in this marma are sphenopalatine artery, anterior and posterior ethmoidal arteries and vein. Other structures are olfactory nerve, nasal bone, cribriform plate of ethmoid bone
8. *Stanmula-2*: - The predominant structure is internal mammary vessels. Other structures are lower portion of pectoralis major, intercostal nerves and inter costal muscles.
9. *Apalapa-2*: - Predominant anatomical structures are subclavian & axillary artery and vein. Other structures are brachial plexus, pectoralis major and minor.
10. *Apastmbha-2*: - Predominant structures in this marma are Pulmonary artery and veins, Bronchial vessels, descending aorta. Other structures are two bronchi, Broncho-pulmonary segments, pectoralis major, minor and intercostal muscles.
11. *Hridaya-1*: - The predominant anatomical structures are ascending and arch of aorta, superior and inferior vena cava, pulmonary arteries and veins. Other structures are cardiac muscle, vagus nerve, sternum bone, 2nd, 3rd, 4th and 5th ribs.
12. *Nabhi-1*: - Predominant anatomical structures are Portocaval anastomosis, superior & inferior epigastric artery and vein, IVC, abdominal aorta, during embryonic period fetal

circulation through 2 umbilical artery & 1 umbilical veins. Other structures are external and internal oblique, rectus abdominus,

13. *Parshva sandhi-2*: - The predominant structures are renal artery and vein. Other structures are renal plexus, iliac crest, lower part of 12th rib.

14. *Brihati-2*: - Predominant structures in this marma are subscapular arteries and veins. Other structures are dorsal scapular nerve, infraspinatus, trapezius, levator scapuli muscle

15. *Lohitaksha-4*: - The predominant anatomical structures are **in hand**- Axillary artery and veins, other structures are median and ulnar nerve, latissimus dorsi, coracobrachialis, pectoralis major and minor muscles. **In leg**- Femoral artery, vein and nerve, profunda femoris artery and sartorius, gracilis muscle.

16. *Urvi-4*: - Predominant anatomical structures are, **In Hand**-Brachial artery and veins. Other structures are median and ulnar nerve, biceps muscles. **In foot**-Predominant structures are femoral artery and veins, superficial & deep muscular branch of genicular artery. Other structures are saphenous nerve, obturator nerve, adductor magnus, longus and sartorius muscle.

But according to Astanga Hridaya, they are 37 in number, these 37 are *Urvi-4*, *Kakshadhara-2*, *Vitapa-2* + all are same with Sushruta Except *Srungataka*, *Apanga*, *Apalapa*, *Apastambha* (These aren't described by Astanga Hridaya in *Sira Marma*).

Bidha Lakshyan: - Injury to this *Marma* causes excessive loss of blood, which causes thirst, vertigo, syncope, breathlessness, hiccup & morbidity.^[19]

3. *Snayu Marma*

The predominant structure in this *Marma* is *Snayu* (ligament). They are 27 in number, these are-1. *Ani-4*: - The predominant anatomical structures in this marma are, **In hand**- Tendon of biceps brachii and coracobrachialis. Other structures are median, radial and ulnar nerve, lower end of humerus, brachial artery and vein. **In Foot**- Tendon of quadriceps femoris, lower end of femur. Other structures are genicular branch of femoral artery & vein, popliteal artery, saphenous and femoral nerve.

2. *Kakshadhara-2*: - Predominant structures are cords of brachial plexus, gelno humoral ligament, coracoacromial ligament, capsular ligament and acromioclavicular ligament. Other structures are pectoralis major and minor muscles, deltoid, bicep brachii & coracobrachialis muscle, and axillary artery, vein and lymph node.

3. *Vitapa-2*: -The predominant anatomical structures are spermatic cord & its contents, inguinal canal and femoral nerve. Other structures are external, internal oblique muscle of abdomen, rectus abdominus.
4. *Kurcha-4*: - The predominant structures in this marma are, **In hand**- Carpometacarpal and intermetacarpal ligament. Other structures are radial artery and its metacarpal branches, median nerve, thenar muscle, tendon of extensor digitorum, flexor digitorum, extensor indicis, extensor carpi radialis brevis. **In foot**- Tarsometatarsal ligament and intertarsal ligament. Other structures are medial plantar nerve, medial plantar arteries, deep peroneal nerve, tendon of flexor hallucis longus, extensor hallucis longus and abductor hallucis muscle.
5. *Kurchasira-4*: - The predominant structures in this marma are, **In hand**- Intercarpal ligament, Radial collateral ligament, tendon of flexor carpi radialis, tendon of abductor pollicis longus, tendon of extensor carpi radialis longus, tendon of extensor pollicis longus. Other structures are radial vessels and median nerve, superficial branch of ulnar nerve. **In foot**- Deltoid ligament, talo-calcaneal & talo-fibular ligament, tendon of tibialis anterior muscle.
6. *Vasti-1*: - The predominant structure in this marma are pelvic splanchnic nerve and inferior hypogastric plexus, puboprostatic ligament and another true & false ligament of bladder. Other structures are internal iliac arteries & its branches mainly vesical branch, internal iliac vein, rectus abdominus & external, internal oblique muscle, symphysis pubis.
7. *Kshipra-4*: - The predominant anatomical structures in this marma are, **In hand**- first intermetacarpal ligament. Other structures are 1st interosseous muscle, flexor pollicis brevis, oblique & transverse head of abductor pollicis muscle, median nerve, radial artery. **In foot**- First intermetatarsal ligament. Other structures are abductor hallucis and flexor hallucis brevis and lumbricals, post. tibial nerve, deep peroneal branch to big toe, dorsal metatarsal artery, and medial plantar artery.
8. *Amsa-2*: -The predominant structures in this marma are, suprascapular ligament, coracoacromial ligament, coracoclavicular ligament, trapezoid ligament. Other structures are phrenic nerve, 3rd & 4th cervical nerve, trapezius and levator scapuli muscle, scapula bone.
9. *Vidhura-2*: - The predominant structures in this marma are facial nerve, great auricular nerve, tympanic branch & auricular branch of maxillary artery, stylomastoid artery (branch of post. auricular artery) and vein, mastoid muscle and middle ear cavity.

10. *Utkshepa-2*: - Predominant anatomical structures are zygomatic temporal nerve, meninges. Other structures are temporal muscles & bone, superficial and deep temporal fascia, temporal arteries & vein.

But according to Astanga Hridaya they are 23 in number, all are same as Sushruta + *Apanga Marma-2* except *Vitapa*, *Kakshadhara*, *Vidhura* (These Marma aren't described by Astanga Hridaya in *Snayu Marma*).

Bidha Lakshyan: - Injury to this *Marma* cause *Akshepa*, *Apastambha* & extreme pain.^[20]

4. *Asthi Marma*

The predominant structure in this *Marma* is *Asthi* (Bone). They are 8 in number. These are

1. *Kateekatarun-2*: - The predominant anatomical structures are greater & lesser sciatic notch, its content, ilium bone. Other structures are superior gluteal artery & vein, gluteus maximus muscle, sacral plexus.

2. *Nitamba-2*: - Predominant anatomical structures are superior part of iliac crest, floating ribs. Other structures are lumbar plexus, sacroiliac ligament, psoas major & quadratus lumborum muscle.

3. *Amsaphalaka-2*: - The predominant anatomical structure is spine of scapula and 5th, 6th, 7th cervical & 1st thoracic vertebra. Other structures are trapezius, rhomboid major muscle, vessels supply to scapula and thoraco-cervical nerve fiber supplying to scapular muscle.

4. *Shamkha-2*: - The predominant anatomical structures are temporal bone, temporal muscle with fascia. Other structures are superficial temporal artery & vein, middle meningeal artery, facial nerve.

Bidha Lakshyan: - Injury to this *Marma* leads to slow secretion of clear fluid mixed with bone marrow & severe pain (which is the cardinal sign of injury to this *Marma*).^[21]

5. *Sandhi Marma*

The predominant structure in this *Marma* is *Sandhi* (*Marma* of joint). They are 20 in number, these are.

1. *Janu-2*: - The predominant anatomical structures are knee joint formed by femur, tibia, fibula and patella bone. Other structures are plantaris & gastrocnemius muscle, articular capsule of knee joint, posterior cruciate ligament, medial & lateral menisci, oblique popliteal ligament, popliteal artery & vein, medial popliteal nerve.

2. *Kurpara-2*: - Predominant anatomical structure in this marma is elbow joint formed by radius, ulna and humerus bone. Other structures are supinator, flexor & extensor carpi radialis, biceps, triceps, pronator teres muscle, bifurcation of brachial artery into radial and ulnar artery, cephalic and median cubital vein, median nerve, radial & ulnar collateral ligament.
3. *Seemanta-5*: - The predominant anatomical structures are cranial sutures i.e sagittal sutures, parietal suture, occipital suture & frontal suture of skull. Other structures are ophthalmic & maxillary nerve, 2nd & 3rd cervical nerve, occipito-frontalis muscle, epicranial aponeurosis, anterior and posterior superficial temporal and occipital arteries, parietal artery & veins.
4. *Adhipati-1*: - Predominant anatomical structures are confluence of sinuses (where sagittal, straight, occipital & transverse sinus meet), and cardiac, respiratory & vasomotor centers in medulla. Other structures are occipital, parietal bone, occipito-parietal joint, occipital artery, medulla oblongata, 2nd & 3rd cervical nerve.
5. *Manibandha-2*: - The predominant anatomical structures are wrist joint, retinaculum of wrist joint, radio-ulnar and radio-carpal ligament, radial artery and median nerve.
6. *Gulpha-2*: -The predominant anatomical structures are ankle joint formed by tibia, fibula, talus and calcaneum. Structures related to this marma are flexor hallucis longus and brevis, tibialis posterior and flexor digitorum longus muscle, posterior tibial nerve, posterior tibial artery & vein.
7. *Kukundara-2*: - Predominant anatomical structures are ischio-iliac joint & sacro-iliac joint, ischial tuberosity, gluteal artery & vein, inferior pudendal artery and vein, sciatic nerve, pudendal nerve, gluteus maximus and levator ani muscle.
8. *Avarta-2*: - The predominant anatomical structures in this marma is junction of frontal, zygomatic and sphenoid bone, frontal lobe of cerebrum. Other structures are optic nerve, ophthalmic and supraorbital arteries, levator superior and superior rectus muscle, superior ophthalmic vein.
9. *Krukatika-2*: - Predominant anatomical structure in this marma is atlanto- occipital joint formed by condyle of occipital bone & atlas bone. Other structures are ligaments of atlanto-occipital joint (articular capsule, anterior & posterior atlanto-occipital membrane) rectus capitis muscle, vertebral artery and vein, occipital and 1st cervical bone.

Bidha Lakshyan: - When *Sandhi Marma* are injured the sight of injury feels as though full of thorns, even after healing of wound there is shortening of the arm, lameness, decrease of strength & movement, emaciation body, swelling of joints occur.^[22]

6. Dhamani Marma

This *Marma* is only described by Astanga Hridaya. They are **9** in number, these are^[23]

Guda-1, Apastambha-2, Vidhura-2, Srungataka-4

Bidha Lakshyan: - Injury to this *Marma* leads to severe pain, loss of blood, loss of seating/standing, coma & death.

(c) Classification of *Marma* on the basis of Measurement

1. Ekangulamana Marma- They are total 10 in number. These are

Urvi-2 Kurchasira-2 Vitapa-4

Kakshadhara-2

2. Dwiangulamana Marma- They are total 6 in number. These are

Gulpha-2 Manibandha-2 Stanmula-2

3. Triangulamana Marma: - They are total 4 in number. These are

Janu-2 Kurpara-2

4. 4angulamana Marma: - They are total 29 in number. These are

Hridaya-1 Vasti-1 Guda-1

Nabhi-1 Kurcha-4 Seemanta-5

Srungataka-4 Matraka-8 Neela-2

Manya-2

5. Half angulimana Marma: - They total 56 in number. These are

Adhipati-1 Shankha-2 Talahridaya-4

Kshipra-4 Indravasti-4 Apalapa-2

Apastambha-2 Stanrohita-2 Parshvasandhi-2

Kateekatarun-2 Nitamba-2 Bruhati-2

Utkshepa-2 Sthapani-1 Aani-4

Lohitaksha-4 Vidhura-2 Kukundara-2

Amsha-2 Krukatika-2 Apanga-2

Amshaphalaka-2 Phana-2 Avarta-2

CONCLUSION

Marma Science is one of the important parts of *Ayurveda*. *Marma* points are spread all over the body. The knowledge of *Marma* is very essential for a surgeon because any mistake in surgical procedure may cause various complication or death of patient. *Marma therapy* is a significant aspect of Ayurvedic treatment, it removes blockage from *Marma point* & a light

stimulation on these points produce flow of vital energy/prana. *Marma points* when gently pressed on the skin can stimulate a chain of positive events, so detail idea about *Marma points* is essential for clinician as these points are control point of body. This article gives a detail idea about the position of *Marma*. This article also provides a detail compilation about *Marma* described by our Acharya specially *Brihatrayi* (Charak, Sushruta, Vagbhata).

REFERENCE

1. Sanskrit-Hindi kosh, Vaman shivram Aapte, Varanasi: Chaukhamba Vidyabhavan; 2012, Page no-318.
2. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-69.
3. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-268.
4. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-69.
5. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-77.
6. Tripathi Brahmananda, Charak Samhita Charak Chandrika tika, 2nd edition. Varanasi: Chaukhambha Subharati Prakashan; 2012. Vol.ii, Page no-1269.
7. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-67.
8. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-272.
9. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-25.
10. Sharma Shivaprasad, Astanga Sangarh Shashilekha Sanskrit Commentry, 1st edition. Varanasi: Chaukhambha Sanskrit Series Office; 2008. Page no-326.
11. Tripathi Brahmananda, Charak Samhita Charak Chandrika tika, 2nd edition. Varanasi: Chaukhambha Subharati Prakashan; 2012. Vol.ii, Page no-1269.
12. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-67.
13. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-68.

14. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-68.
15. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-68.
16. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-68.
17. Shastri Ambikadutta, Sushruta Samhita Ayurveda Tattva Sandipika, 1st edition. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. Vol.i, Page no-69.
18. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.
19. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.
20. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.
21. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.
22. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.
23. Kaviraja Gupta Atrideva, Astanga Hridayam Vidyotini tika, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Page no-270.