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# CRITICAL ANALYSIS OF DHAMANI MARMA – A SHORT COMMUNICATION

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## ABSTRACT

Marmas are an important points in the body where prana is located, similar to the energy point of the acupuncture system in medicine. Ayurvedic literature describes 107 marmas located in different parts of the body. In ayurveda's vast sea of knowledge, marma is one of the most important concept. Marma points were unanimously recognized as "places of life" (prana - life energy). Damage to these areas can lead to severe pain, disability, loss of function, and loss of sensation or death. Therefore, in the ancient scriptures these important places injury must be avoided and proper care must be taken in this regard when performing the work. However, recent studies have shown that if there is inflammation or pain at any point in marma, stimulating a nearby marma point may help relieve this pain. Dhamani marma is one of the important areas of human anatomy, which is classified based on the structures involved. This classification was given only by vagbhata. There are 9 in numbers of dhamani marmas described by vagbhata in ashtanga hridaya sharirasthana, chapter 4 marmavibhaga. These are 1) Guda - 1; 2)

Apastamba - 2; 3) Vidhura - 2; 4) Sringataka - 4. Meanwhile, Acharya Sushruta mentioned these marmas in the following categories: Guda is mamsa marma, Vidhura is snayu marma, Apashtambha and Shringataka are shira marma. While Acharya Vagbhata termed these marmas as Dhamani Marmas. Dhamani is a special structure in which the pulsation is felt. Thanks to this, we can distinguish this part from the others. It has its own meaning in terms of structure and function. When you get the knowledge of the dhamani, you know the exact anatomy under each marma where the injury occurred.

**Keywords: Marma, Dhamani marma, Sira, Dhamani**

## INTRODUCTION

Marma is a Sanskrit term for sensitive points on the body. Marmas are vital centers or subtle energy fields on the body. They are the pragmatic storehouse of the breath of life. The anatomical area where the structures pulsate and where pain exists can be named as Marma. Acharyas in Ayurvedic samhitas classified all Marmas on the basis of their position in the body, their size; effects of trauma on them and on the basis of tissues mainly in this area such as muscles, veins, ligaments, bones or joints. The descriptions of the 107 Marmas by Susrutha and Vagbhata have been classified into categories based on structures; depending on the effect of the injury, on the location on the body, to their dimension. The definition of Dhamani as pulsating part, which can be structurally correlated with artery among blood vessels. Dhamani is a very important structure which is almost developed to function for the supply of nutrients rich in prana factor. If the arterial supply of an organ is cut it will certainly result into loss of its function, specifying to disability or due to severe blood loss leading to death. In marma abhighat, the arterial damage lead to profuse bleeding, loss of volume and reduction in oxygen supply to the body tissues to which it supplies. Among 107 Marmas, there are 44 Marmas present in the Sakthi (11 in each extremities), 3 Marmas in Koshta, 9 Marmas in Uras (thorax), 14 Marmas in Prushtha (back) and 37 Marmas in Jatroodha (head and neck).[1] Acharya Vagbhata described an category extra from all 5 types, including all five categories as presented by Sushruta. He has added one more specific category namely Dhamani Marma. Acharya Vagbhata, was the first to rank Dhamani Marma. Nine Marmas belong to this group and they are Guda, Apasthambha, Vidhura and Sringataka.[2]

**Dhamani Sharir** –

Dhamani Vyutpatti – it is derived from the word Dhaman which means blowing. Dhamani in human body refers to a tubular structure or canal in body.[3]

Dhamani are the structures in the body which pulsates propels blood, where there is expulsion, which fills and nourishes body. Chakrapani commented that Dhamani shabda can be defined as 'Dhamana', filling up with carried materials Rasa and Rakta.[4] Sharanghara explained Blood circulation is carried out in Dhamanis by Dhamana (pulsation). This Dhamana / pulsation are caused because of internal Vaat Dosha. Body, its 5 senses (Panch Dnyanendriya), 5 karmendriya and all physiological functions are under the influence of this Dhaman action.[5] Sushruta in 'Garbhavkranti Shariram' said that the parts and principles of body of the fetus are respectively contributed by the paternal element the hairs of head and body, beard and mustache, bones, nails, teeth, veins, nerves, arteries (Dhamanis), semen and all the steady and hard substances.[6] Vagbhata also said that Dhamanis are Pitruj elements. According to him Pitruj elements are all sthir/steady organs along with Shukra, Dhamani, Asthi etc.[7]

**Number of Dhamani** –

Chakrapani commented on Dhamani Sankya in Charaka Sutrasthan that, Dhamanis are attached to heart, though 10 in number they further divide in numerous branches all over the body.[8] Bhavprakash also says that dhamanis are derived from nabhi and number 24. Among them, ten are upward, ten downward, and four in different directions. These flasks have small outlets through which the rasa (nutrients) moves in a manner quite similar to lotus stem where there are natural pores.[9]

| | | | |
|---|---|---|---|
| 1 | Atharvaveda | 1000 | - |
| 2 | Charaka | 10 | 200 29956 |
| 3 | Bruhadaranyaka | 72 | - |
| 4 | Sharangdhar | 24 | - |
| 5 | Sushruta | 24 | Urdhva Adhah Tiryak<br>10 10 4 |
| 6 | Ashtanga Hridaya | 24 | Urdhva Adhah Tiryak<br>10 10 4 |
| 7 | Bhel | 10 | Urdhva Adhah Tiryak<br>4 4 2 |
| 8 | Kashyapa | 10 | Urdhva Adhah Tiryak<br>4 4 2 |

**Anatomy of Blood vessels -**

Blood vessels distributes blood to the entire body. A network of arteries, arterioles, capillaries, venules, and veins constitute blood vessels. Arteries, arterioles, capillaries, venules, and veins are the five basic types of blood vessels. Arteries are blood vessels which move blood out from the heart and to other organs. Small arteries then divide into even smaller arteries called arterioles, which

in turn divide into even smaller arteries called venules. Arterioles enter tissue and branch out into a plethora of tiny vessels known as capillaries. Venules are tiny veins formed when groups of capillaries within a tissue reconnect. These, in turn, join to produce veins, which are progressively larger blood channels. Veins are the blood veins that carry blood back to the heart from the tissues.[10]

| S. No. | Blood Vessel | Size | Function |
|---|---|---|---|
| 1.<br>i. | Arteries<br>Elastic arteries | Largest arteries in the body | Conduct blood from the heart tomuscular arteries. |
| ii. | Muscular arteries | Medium Sized Arteries | Distribute blood to arterioles. |
| 2. | Arterioles | Microscopic (15-300 µm indiameter) | Deliver blood to capillaries and helpregulate blood flow from arteries to capillaries. |
| 3. | Capillaries | Microscopic smallest blood vessels (5-10 µm indiameter). | Permit exchange of nutrients andwastes between blood and interstitial fluid, distribute blood andinterstitial fluid, and distribute bloodto post capillary venules. |
| 4.<br>i. | VenulesPost capillary venules | Microscopic (10- 50 µm in diameter) | Pass blood into muscular venules; permit exchange of nutrients andwastes between blood and interstitial fluid and function in whiteblood cell emigration. |
| ii. | Muscular venules | Mircroscopic (50- 200 µm in diameter) | Pass blood into vein; reservoirs for accumulating large volumes of blood (along with postcapillary venules. |
| 5. | Veins | Range from0.5mm-3cm in diameter | Return blood to the heart, facilitatedby valves in veins in limbs. |

**DISCUSSION –**

- Acharya Vagbhata explained an additional type of Marma i.e. Dhamani Marma. We could see that Marma abhighata causes demise, delayed death, or disabilities in the world today. Underneath these Marmas were numerous essential anatomical processes. Dhamani is one of the most important structures which constitute for the formation of Marma. Dhamani is a beating portion of a blood vessel that is structurally related to an artery. Dhamani Marma mentioned by Vagbhata are as follows –

| S. No. | Marma | Number |
|---|---|---|
| 1 | Guda | 01 |
| 2 | Apastambha | 02 |
| 3 | Vidhur | 02 |
| 4 | Shrungataka | 04 |
| Total | | 09 |

Marma are the body's vital points, any injury or damage to them would result in great pain, impairment, loss of function, loss of sensation, or perhaps even death. Marmabhighata lakshana is the term coined to the clinical manifestations when these areas are damaged.

The following are just some of Marmaghata's very common symptoms:

Bhrama, Pralapa, Patana, Pramoha, Vicheshtana , Sanlayana, Ushnataa, Ushnataa, Srastaangataa, Murchha, Urdhwavata, Vatastivra Ruja, Mansadokabham rudhiram cha gachchheta, sarvendriyaarthoparamastathaiva (Cessation of activity of all sense organs) are the common symptoms when all five important sites (mansa, sira, snayu, asthi, sandhi) are wounded or damaged. Acharya Vagabhata characterizes Sira and Dhamani Marmaaghata lakshana as oozing thick blood continuously and in huge volumes, thirst, dizziness, dyspnea, delirium, hiccough, and death.Injury to the Dhamani Marmas leads to loss of blood with sound, froth and warm blood gushes out, rendering the individual unconscious and death.[11]

**Guda Marma** is situated around the last part of the large intestine i.e. rectum and anal canal. The anal canal and rectum are supplied by three sources of arteries e.g. superior rectal artery (direct continuation of inferior mesenteric artery) constitutes the chief arterial supply to the rectum, opposite the third sacral vertebra, the artery divides into right and left branch. About half way down the rectum the right branch sub-divides in an anterior and posterior branch, the terminal branches are run straight downwards. The middle rectal artery arises on each side from internal iliac and passes in close proximity to the lateral ligament of the rectum. The inferior rectal artery in each side as a branch of internal pudendal artery enters Alcock‘s canal, it breaks up into branches, which supply the anal sphincter, anal canal and skin of the anal margins.The internal rectal venous plexus lies in the loose sub-mucosa of the anal canal and external from the level dentate line to that the ano-rectal ring. The six collecting venous plexus unite to form the superior rectal vein, important tributary of the portal vein. The middle rectal veins are small and drain into the internal iliac vein. The external rectal venous plexus lies under the skin of the anal canal below the dentate line and beneath the skin of the anal margin. The external rectal plexus is communicated to the internal venous rectal plexus through communicating veins. The lower part of the external rectal plexus drains in external pudendal veins and thence into internal iliac veins. The instant death due to injury in this region can be possible under two circumstances, the extensive primary neurogenic shock; it turns into peripheral vascular failure, and this may lead to death. But under these conditions Mamsa (muscles) cannot be held responsible for the cause of death. Secondly the death may occur due to excessive hemorrhage causing irreversible

shock; this may be possible when the medical aid (transfusion) is not met with in time. If hemorrhage taken into account the arterial bleeding has to be considered, the anal canal is supplied largely by inferior rectal artery, which is the continuation of the internal pudendal artery branching from the internal iliac artery through greater sciatic foramen and enters the zone of ischio-rectal fossa. It is the major artery for, it comes from the major pelvic artery and the injured person may bleed to death, if immediate hemostat is not applied.[12]

**Vidhur Marma**- It is located just behind and below to the auricle of the ear especially at the mastoid process and its size is around Ardhanguli (nearly 1 cm. in radius) the posterior side of auricle, particularly at the level of mastoid process, it is found that there is a canal close with the styloid process. From this canal two structures are seen passing through the canal i.e. facial nerve and stylomastoid artery. Facial nerve is a structure coming out from this canal and further it reaches to the facial region to supply the muscles of the face. Stylomastoid artery which is the branch of posterior auricular artery enters from the canal and finally enters into the compartment of ear. It supplies to the air cells of the mastoid process and finally to the tympanic membrane. It also supplies to the facial nerve which particularly has only some very minor significance with the function of hearing. Facial nerve supplies the stapedius which is attached with stapes bone an auditory ossicle. Tympanic membrane is very important part of the organ of hearing; it functions for the reception of hearing impulses and transfers it to the auditory ossicles. Tympanic membrane functions through the way of vibration according to the incoming sound waves. The normal status of tympanic membrane specifying to normal hearing is maintained by the supply of blood through the following arteries-

1. Stylomastoid artery a branch of posterior auricular artery.
2. Anterior tympanic a branch of maxillary artery.
3. Deep auricular a branch of maxillary artery.[13]

**Apastambha Marma** – It is located in the chest region. It is said to be points on either side of the median plane in the chest region which carries the Prana or the life force. It is present medial and downwards of the nipples at the level of 3$^{rd}$ rid immediately lateral to the sternum bone. The anatomical structures found at these points are the pulmonary artery and tributaries of the pulmonary vein, Descending Thoracic Aorta, drainage of

Pectoral group and tracheobronchial and Broncho pulmonary lymph nodes, Vagus nerve and Bronchus. Acharya Vagbhata has described that injury to this marma fills up thorax with blood which produces swasa-kasa (respiratory failure). The cause of blood in the thorax is dhamani. It appears that the injury of wind pipe along with vascular rupture would certainly cause hemothorax as well as pneumothorax, apparently this condition may commonly occurs at the site of hilus of the lung where wind tube and vessels enter or leave Injury to these structures cause hemorrhage and ultimately death.[14]

**Shrungataka Marma –**

It is located in the central part of middle cranial fossa is proved as one of the vulnerable region. The anatomical structures found in these region are cavernous sinus, inter cavernous sinus, carotid artery with venous plexus and draining veins (terminal part) in the sinus, body of sphenoid bone with hypophyseal fossa, sphenotemporal, spheno-frontal, spheno-occipital joints, trigeminal ganglion with its three divisions. Traumatic effect of this marma is instant death or within seven days due to intimate juxtaposition of veins, arteries, nerves, meninges, and paranasal sinuses accounts for the characteristic etiology and presentation of cavernous sinus thrombosis, if not managed properly, affects the CSF circulation. Increased intracranial pressure causes death immediately or within days.[15]

**CONCLUSION –**

The foundational aspects of Marma Science were investigated in this article focusing on the concept of Dhamani Marma. Acharya Vagbhata gave a special classification to the rest of the mama, taking into account the structures that exist in these locations on the body. Symptoms that occur after these points are damaged are found after injury to any vessel. So he tried to elaborate these marma points as Dhamani Marmas from the Marmaghata lakshana occurring after injury. After comparing the symptoms of marmaghata described by Acharya Vagbhata with the modern anatomy present at these marked marmas locations, it was found that they were associated with one or another blood vessel. Acharya Vagbhata distinguished dhamani from other structures and has mentioned it separately, which will aid in better understanding and helpful in future studies.

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