



CONCEPT OF MATRIKA MARMA AND ITS APPLIED ASPECT

Kavita Kumari

P.G. Scholar, Rachana Sharir Department, Shri. Krishna Govt. Ayurvedic College, Kurukshetra

Ashish Nandal

Assistant Professor, Rachana Sharir Department, Shri. Krishna Govt. Ayurvedic College, Kurukshetra

ABSTRACT

Acharya Sushruta has described unique concept of *Marma Sharir*. *Marma* are vital points where *Prana* resides. *Marma* comes from Sanskrit word “*mru*” which means ‘to kill’. *Marma* plays an important role in surgery. That is why these points also called as ‘*shalya vishayardha*’. *Acharyas* have explained 107 *Marma*, out of which 37 are *Urdhvajatrugata Marma*. *Acharya Charaka* also called ‘*Siras*’ as ‘*Uttamanga*’ as it has control over all other *Indriya* and *Prana* resides in it. *Matrika* is one of *Urdhvajatrugata marma*. *Matrika Marma* are eight in number and it is located in neck on either side of *Kanthanadi*. Structurally it is *Sira Marma* and on the basis of traumatic effect it is *Sadhyopranahara Marma*. Aim of this paper is to find out appropriate structure and applied aspect of this *Marma* in present context.

KEYWORDS : Urdhvajatrugata Marma, Matrika Marma, Sadhyopranahara, carotid sinus, carotid body

INTRODUCTION:

Marma are vital points which have *Prana*. According to *Acharya Dalhana* these are spots which when injured, kills the person. All such spots do not cause death but some causes deformity and severe pain.¹ All *Acharyas* have knowledge about 107 *marma*. But *Acharya Charaka* gives importance to 3 *Marma* which are tripod of life i.e *Hridya*, *Basti*, *Sira*.² In *Sushrut Samhita Shareersthana* explanation of 107 *Marma* is first ever explanation of surgical and applied anatomy. *Acharya Sushruta* described *Marma* as ‘*Shalya Vishayardha*’. *Marma* are classified on the basis of:

On the basis of traumatic effect these are: *Sadhyopranahara*, *Kalantrapranahara*, *Vishalyaghana*, *Vaikalyakara*, *Rujakara*.

On the basis of composition of *Marma* are: *Mamsa Marma*, *Sira Marma*, *Snayu Marma*, *Asthi Marma*, *Sandhi Marma*.

On the basis of location *marma* are: *Shakhagata*, *Kosthagata*, *Urdhvajatrugata*.

There are 37 *Marma* present in *Urdhvajatrugata* region and *Matrika Marma* is one of them.³

Ayurveda and matrika marma:

The term *Matrika* derived from root word *Mathru* which means maternal. The word *Matrika* have following meanings: coming from mother, source or origin, necklace (worn around neck).⁴

श्रीवावायामुभयतश्चतस्रं (चतस्रः चतस्रः पाठः समव तत्र सद्योमरणम्)। सु. शा. ६/१८

Four *Matrika Marma* located on each side of neck and injury to them leads to instant death. It is four *angula* in measurement.⁵

Table-1
Matrika marma classification

Marma name	On the basis of location	On the basis of structure	On the basis of traumatic effect	On the basis of measurement	Situation
Matrika	Urdhvajat rugata	Sira marma	Sadhyopra nahara	Four angula	Greevamubhyato (श्रीवावायामुभयत)

Acharya Bhaskar Govind Ghanekar correlates *Matrika Marma* with carotid arteries and jugular veins.⁶ But not only these vessel are *Matrika Marma* but structure related to these vessel are also considered in *Matrika Marma*.

Anatomy in modern context:

Neck is region of body that extends from base of cranium and inferior border of mandible to superior thoracic aperture. It contains four compartments namely midline visceral compartments, midline musculoskeletal compartments, right and left neurovascular compartments.

Neck triangle: Neck appears as a quadrilateral area when viewed anterolaterally. It is bounded by:

Superiorly:

base of mandible and imaginary angle between angle of mandible and mastoid process.

Inferiorly: upper border of clavicle

Anteriorly: anterior median line

Posteriorly: anterior margin of trapezius

Anterior triangle is further subdivided into unpaired submental, paired digastric, carotid and muscular triangle.

Carotid triangle:

superior carotid triangle, trigonium caroticum. It is bounded by:⁷

Table – 2 Carotid Triangle Boundaries

Mamsa (muscle)	Sternocleidomastoid, posterior belly of digastrics, thyrohyoid muscle, middle and inferior constrictor of pharynx
Sira (vessel)	Common carotid artery along with carotid sinus and carotid body, jugular vein, vagus nerve, hypoglossus nerve
Snayu (ligament)	Intermediate tendon of omohyoid
Asthi (bones)	Hyoid bone, base of mandible, sternum, middle one third of clavicle
Sandhi (joints)	Sternoclavicular joint, cricothyroid joint, cricoarytenoid joint

Contents of carotid sheath:

Arteries: common carotid artery with carotid sinus and carotid body at its termination, external and internal carotid artery

Veins:

internal jugular vein, common facial veins, lingual vein

Nerves:

vagus nerve, hypoglossal nerve, spinal accessory nerve

Lymph nodes:

deep cervical lymph nodes

Carotid sinus:

It is a dilated segment of common carotid body located at its bifurcation. In this region tunica media is thin, but adventitia is relatively thick and rich innervations from glossopharyngeal and sympathetic nerve. It acts as baroreceptor regulates blood pressure.

Carotid body:

These are small oval structures, present one on each side of neck, at the bifurcation of common carotid artery. The main function of carotid bodies is that they act as chemoreceptors which monitor oxygen carbon dioxide levels in blood. They exercise reflex control on the rate and depth of respiratory centre located in brainstem.⁸

Table-3 Matrika Marma Structure With Modern Context:

Anterosuperiorly	Anteroinferiorly	Posteriorly	Roof	Floor
Posterior belly of digastric muscle, and stylohyoid	Superior belly of omohyoid	Anterior border of sternocleidomastoid muscle	Skin, superficial fascia, deep cervical fascia	Middle constrictor of pharynx, inferior constrictor of pharynx, thyrohyoid membrane

AIM:

- To study *Matrika Marma* and its applied aspect with modern context.

OBJECTIVE:

- To study *Matrika Marma* and its applied aspect from *ayurvedic* literature.
- To study the related structure of *Matrika Marma* and its applied aspects from modern literature.
- To draw a conclusion of *Matrika Marma* and its applied aspects relations with modern context.

MATERIAL AND METHOD:

- Literature regarding *Matrika Marma*
- Literature regarding carotid artery and jugular veins

DISCUSSION:

Discussion as *ग्रीवाणामुभयतः* *Matrika Marma* is situated on both sides of neck. These are eight in number. In neck major vessels are carotid arteries and jugular veins. These are also eight in number, four on each side. These lie in carotid triangle. On the basis of *Samhita* and concerned from modern literature *Matrika Marma* is related with carotid arteries and jugular veins.

Discussion as Sira Marma:

In general *Sira* considered as vessel. We have also seen that in the area of *marma* there is presence of carotid arteries and jugular veins. *Acharya Bhaskar Govind Ghanekar* also correlates *Matrika Marma* with carotid arteries and jugular vessel. So *Matrika Marma* is a *Sira Marma*.⁹

Discussion as Sadhyopranahara:

Matrika Marma is a *Sadhyopranahara Marma* i.e injury to this *Marma* leads to sudden death. Injury to *Matrika Marma* leads bleeding from jugular veins and carotid arteries. There are anatomical as well as physiological reasons.

Anatomical reason:

- There is no bony covering in neck region. So this region is more prone to injury. Carotid artery and jugular veins lie superficially so there is more chances to injury to these vessel leads to profuse bleeding resulting in syncope, unconsciousness, or sudden death.
- There is presence of *Avedhya Sira* named *Matrika Avedhya Sira* at this *Marma* position. *Acharya Bhaskar Govind Ghanekar* correlates this *Avedhya Sira* with carotid arteries and jugular veins. *Avedhya sira* are those which leads to deformity or death on injury. Therefore carotid arteries and jugular veins are *Marma* as well as *Avedhya Sira*. That is why injury to this area leads to sudden death.

Physiological reasons:

These are carotid sinus i.e baroreceptor and carotid bodies i.e chemoreceptor in region of *matrika marma*.

- Baroreceptors are defined as mechanoreceptor that are situated in carotid sinus and aortic arch. Main function of baroreceptors involves detection of changes in pressure and generating responses to modify tension in walls of arteries. Increasing blood pressure results in increased rates of baroreceptor firing, where decrease blood pressure results in slower firing of baroreceptor firing, initiating haemostatic mechanism to restore blood pressure.¹⁰
- Chemoreceptor monitors oxygen and carbon dioxide level in blood. They exercise reflex control on rate and depth of respiration through respiratory centres located in brain stem.
- Injury to carotid sinus produces reflex fall in blood pressure, slowing of heart rate which leads to syncope. And injury to carotid body produce reflex rise in blood pressure and heart rate with changes in depth and rate of respiration.¹¹ So destroying

their normal function leads to syncope, unconsciousness and sudden death. That is why *Matrika Marma* is *Sadhyopranahara Marma*.

CONCLUSION:

After brief study of *Matrika Marma* from *Ayurvedic* and modern literature following conclusion can be made:

- Marma* are vital points which should be protected from injury.
- Matrika Marma* is a *Sira Marma* which is correlated with carotid arteries and jugular veins.
- Sadhyopranahara* of *Matrika Marma* is due to presence of important structure present on carotid artery i.e carotid sinus and carotid bodies.
- So following structures are related with *Matrika Marma*: carotid artery, jugular vein, carotid sinus, carotid bodies etc.

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