SRINGATAKA MARMA: AN INTEGRATIVE REVIEW OF CLASSICAL CONCEPTS AND CONTEMPORARY PERSPECTIVES

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Abstract
Sringataka Marma, is a vital Sira Marma located in the head and present in four numbers. It is defined as the confluence of vascular channels supplying the nose, ears, eyes, and tongue, thereby functioning as a central hub for sensory nourishment and integration. Classical Ayurvedic texts highlight its clinical significance, as injury to this marma can result in severe or fatal outcomes.
Index terms: Sringataka, Marma, Ayurveda

INTRODUCTION

In ayurveda the concept of Marma holds great anatomical, physiological and clinical importance. Classical texts describe 107 Marma points distributed throughout the human body. These are considered vital or life-supporting points, where structural and functional elements converge. The Sanskrit word Marma means to die or to cause death. Hence, Marma literally refers to a vital point or sensitive spot to which if injury occurs can lead to serious consequences even death.

Each Marma point in Ayurveda is considered highly significant because it represents a vital anatomical and functional hub rather than a single isolated structure. Classical reference emphasize that the Marma is a confluence of multiple structures – including Mamsa (muscle), Asthi (bone), Snayu (ligament/tendon), Sira (blood vessel), Dhamani ((blood vessel/nerve), and Sandhi (joints). Marma denotes a functional and structural region where several vital elements coexist, rather than an isolated organ. When classical texts mentions that injury to Hridaya Marma leads to death, it does not imply injury to the organ heart alone. Rather it refers to trauma to the anatomical region (precordial region) of the chest where the heart and other vital structures are located.

Table 1 Classification of Marma

Sl NO.	Classification	Types
1	Location	1. Sakha (extremities) 2. Uras (chest) 3. Koshta (abdomen) 4. Prishta (back) 5. Jathrurdwa (head and neck)
2	Structure	1. Mamsa 2. Asthi 3. Snayu 4. Dhamani 5. Sira 6. Sandhi
3	Prognosis	1. Sadhyapranahara (death) 2. Kalantharapranahara(delayed death) 3. Vaikalyakara(deformity) 4. Vishalyaghna (removal of a lodged foreign body leads to death) 5. Rujakara (painful)
4	Size	1. Half angula 2. 1 angula 3. 2 angula 4. 3 angula 5. 4 angula
5	Number	1. Single 2. Double 3. Four 4. Five 5. Eight

1. Classification of Marma according to location

In Ayurveda the region wise classification of Marma is primarily intended to facilitate localization of these vital points in the body. Marma points are essentially surface representations of deeper, vital anatomical structures. For instance, Sthana Moola Marma is described as being located two angula below the nipple, indicating a surface marking for the deeply seated Marma.

2. Classification of Marma according to structure

The structural classification of Marma, such as Mamsa (muscle), Asthi (bone), Snayu (ligament/tendon) Sira (vein), Dhamani (artery/nerve) and Sandhi (joint) is intended to indicate the predominant tissue component involved at a particular Marma site. This classification helps in identifying the exact anatomical basis of certain marma points however, it is not uniformly precise for all. In some cases, the structural classification clearly corresponds to a well- defined anatomical structure. For example, Janu Marma, which is classified as a Sandhi variety of Marma, directly denotes the knee joint. However, this clarity is not seen in all Marma points. In cases like Talahridaya Marma which is classified as a Mamsa Marma and located at the centre of the palm and sole, the classification does not point to a single discrete muscle. Instead, it represents a functional region where multiple structures coexist, including muscles, tendons, vessels, and nerves.

3. Classification of Marma according to prognosis

Injury to Marma points, such as from severe blows or penetrating trauma, results in varied outcomes; based on these consequences, Marmas are classified into categories like fatal, deformity-causing, and pain-producing.

4. Classification of Marma according to extent

The extent of Marma points ranges from half to four angula, and an angula is an individual-specific unit based on finger breadth, the measurement of Marma is personalized according to body proportions.

5. Classification of Marma according to number

Some Marma points are single in number, while others are present in multiple.

Table 2: Marma points of head and neck (Jathrurdwa region)

Sl No.	Name of Marma	Structure	Prognosis	Extent (angula)	Number
1	Dhamani(Neela 2, manya 2)	Sira	vaikalyakara	04	04
2	Matrika	Sira	sadyapranahara	04	08
3	Krikatika	Sandhi	vaikalyakara	½	02
4	Vidhura	Sira /snayu	Vaikalyakara	½	02
5	Phana	Sira	Vaikalyakara	½	02
6	Apanga	Sira	Vaikalyakara	½	02
7	Avarta	Sandhi	vaikalyakara	½	01
8	Utkshepa	Snayu	vishalyghna	½	02
9	Shankha	Asthi	sadyapranahara	½	02
10	Sthapani	Sira	vishalyghna	½	01
11	Seemantha	Sandhi	Kalanthara pranahara	½	05
12	Sringataka	Sira	sadyapranahara	04	04
13	Adhipati	Sandhi	sadyapranahara	½	01

Sringataka Marma

Sringataka Marma is a vital, deep-seated sira Marma in the head, located at the confluence of channels supplying the major sense organs. It is four in number and is related to the eyes, nose, ears and tongue. Sringataka marma is considered as the meeting point of all these srotuses.

Anatomy of nasal cavity

Each half of the nasal cavity has a roof, floor, medial and lateral walls. The roof slopes downwards both in front and behind. Middle horizontal part is formed by cribriform plate of ethmoid. Floor of the nasal cavity is formed by palate and the medial wall by the nasal septum. Lateral wall of the nasal cavity is irregular and has shelf like processes called conchae. There are three nasal conchae in the lateral wall of nasal cavity and below the conchae is nasal meatuses. These meatus receive openings of paranasal sinuses. Nasolacrimal duct opens into the inferior meatus. This opening is guarded by the lacrimal fold, or Hasner's valve [(1)].

The nasal cavity epithelium is a specialized, highly vascularized mucosa consisting mainly of respiratory epithelium (pseudostratified columnar ciliated cells, goblet cells, and basal cells) that warms, humidifies, and filters inhaled air. It also includes a specialized olfactory epithelium for smell and a keratinized squamous epithelium at the vestibule, acting as a critical immunological barrier [(2)].

Blood supply of nasal cavity – the vestibule of the septum is supplied by Kiesselbach's plexus which is formed by branches of external and internal carotid arteries. This is the common site for epistaxis.

Anatomy of nasopharynx

Nasal cavity opens into the nasopharynx posteriorly through choanae. Its roof and posterior wall is continuous. Lateral wall of nasopharynx receives openings of auditory tube thus the nasopharynx communicates with the tympanic cavity. In relation to the naso-oropharyngeal isthmus, there are several aggregations of lymphoid tissue that constitute Waldeyer's lymphatic ring. Palatine tonsil, nasopharyngeal tonsil, tubal tonsil, and lingual tonsil constitute the Waldeyer's lymphatic ring [(3)]

Anatomy of soft palate

Soft palate is a movable, muscular fold, suspended from the posterior border of the hard palate. It separates the nasopharynx from the oropharynx. Its oral surface is concave and marked by a median raphe. Posterior surface is convex and is continuous with the floor of nasal cavity. Its inferior border is free and bounds the pharyngeal isthmus and from its middle hangs the uvula[(4)].

Cavernous sinuses

The cavernous sinus is part of the brain's dural venous sinus and contains multiple neuro-vasculatures. It is situated bilaterally to the sella turcica and extends from the superior orbital fissure anteriorly to the petrous part of the temporal bone posteriorly, and is about 1 cm wide and 2 cm long. The venous blood that flows to the cavernous sinus is from the superior and anterior ophthalmic veins, superficial middle cerebral vein, and sphenoparietal sinus. The communication between the left and right cavernous sinuses is made by the intercavernous sinuses anterior and posterior to the infundibulum of the pituitary gland. [(5)]

Role of Sringataka marma in nasya

Drugs administered through the nasal route (*Nasya Karma*) are believed to reach the Sringataka Marma via the interconnected channels of the eyes, nose, ears, and tongue, thereby exerting their therapeutic effects on the sense organs and higher centres.

DISCUSSIONS

Sringataka marma is described as a Sira Marma situated in the head. It is four in number and located at the confluence of channels supplying the nose, ears, eyes and tongue. From an Ayurvedic perspective, the concept of "sira sangama" (anastomoses) indicates a highly organized vascular and functional network. The nourishment (*poshana*) of the sense organs depends on the proper circulation through these channels, suggesting that Sringataka Marma serves as a functional hub coordinating sensory perception. Injury to this marma is considered *Sadyapranahara* (immediately fatal), which underlines its critical physiological significance.

Although an exact structural equivalent is not defined, Sringataka marma is best understood as a functional neurovascular complex. While discussing Nasya karma, it is stated that the administered medicines first reach the Sringataka Marma and then spread throughout the entire cranial region, producing their therapeutic effects. As per modern anatomy, the administered medicines reach the cribriform plate of the ethmoid bone (roof of the nasal cavity) and subsequently, via the olfactory and trigeminal neural pathways, stimulate the central nervous system.

Thus, the roof of the nasal cavity, which communicates with the anterior cranial fossa and CSF; the nasopharynx, which communicates with the middle ear and oropharynx; and the nasal cavity, which receives branches of the ophthalmic artery, together can be considered as forming the Sringataka Marma.

CONCLUSION

Sringataka Marma represents a vital neurovascular convergence point in the head, as described in the Sushruta Samhita. It functions as a central hub for the nourishment and coordination of the major sense organs. When correlated with modern anatomy, it can be interpreted as a functional complex involving the nasal cavity, cranial base, and associated neurovascular pathways. The concept is further supported by the mechanism of *Nasya Karma*, where drugs administered through the nasal route reach higher centers via olfactory and trigeminal pathways. Thus, Sringataka Marma reflects a sophisticated understanding of the anatomical and physiological integration of sensory and neural systems.

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