



**AN INTERPRETATIVE AND CORRELATIONAL STUDY OF SUSRUTOKTA
SADYOPRANAHA MARMA IN CONCERN WITH MODERN ANATOMY**

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ABSTRACT

Marma are the specific sites of prana within the body. Although it is commonly stated that injury to marmasthana results in death, harm to all marma may not necessarily be fatal. Conversely, it may result in intense pain or abnormalities. However, sadyapranahara marma is a category of marma that, upon injury, will result in death within seven days. Consequently, understanding of the sites of sadyapranahara marma is more critical than that of other marma. Comprehending the anatomical structures in the vicinity of sadyapranahara marma and the potentially fatal outcomes would aid in preventing such injuries during shastra karma procedures. An examination of the regional anatomy of several sadyapranahara marma reveals that critical components, particularly significant blood arteries, are situated in these areas.

KEYWORDS: Sadyapranahara marma, Prana, Agni guna.

INTRODUCTION

The body's weak points, known as marma, were identified in ancient times. Historically, marma vigyana was employed in surgical practices for the treatment of combat injuries. Acharya Sushruta defines marma as the anatomical locations where muscle, vessels, ligaments, joints, and bone converge, and where prana is inherently situated. Here prana denotes all fundamental elements that support an individual's life. Consequently, any injury to a marma will result in the individual's demise. The seven factors—soma, maruta, teja, satva, raja, tama, and bhutatma—are regarded as prana in marma pradesha.

A total of 107 marma points is delineated in Ayurveda. Marma is categorized into five kinds based on the impact of injury. They are sadyapranahara, kalantara pranahara, visalyaghna, rujakara, and vaikalyakara. An injury to the sadyapranahara marma results in death within seven days. Therefore, it is significant in the context of contemporary traffic accidents. There are 19 Sadyapranahara marmas in the human body. The entities are Shringataka, Adhipathi, Shankha, KanthaSira, Guda, Hridaya, Vasti, and Nabhi.

1. Sringataka

As per Shabda Kalpa Druma, the term 'sringataka' refers to that which possesses four horn-like projections. It signifies the convergence of four passages. It is a siraa marma, urdhwajatru marma, swapaanitala pramana, and there are four in all.

Location - As per Susruta, it is situated at the confluence of the siraa nourishes ghrana, srotra, akshi, and jihwa in the cranial region.

2) Adhipati

The term adhipati is defined as raja or swami in Shabda Kalpadruma. It is referred to as adhipati since it is the sovereign of all the marma. It is a sandhi marma, urdhvajatru marma, ardhangula pramana, and there are two in total.

The **location** is situated in the outer region of the skull, serving as the convergence point of siraa, externally delineated by a ring of hair.

3) Shankha

The term shankha is defined as lalatasthi and is situated near karna in the Sabdha Kalpa Druma. It is an

asthimarma, urdvajatra marma, ardhangula pramana, and there are two in total.

The **location** is situated above the tail of the eyebrow and between the ear and forehead.

4) Matrika (Kantha Sira)

Matrika marma is classified as a sira marma, urdhvajatra marma, and swapanitala pramana, totaling eight in number.

Location – The four sira are situated on both sides of the neck.

5) Guda

The term 'guda' originates from the root 'gu' dhathu. It refers to the mechanism responsible for the evacuation of feces. It is a singular mamsa marma, udara marma, and swapanitala pramana.

The **location** is the terminal section of the sthulantra, and its purpose is the evacuation of feces and flatus.

6) Hrudaya

The etymological meaning indicates the organ's function. 'hru' - aaharana - signifies forcible retraction (dilatation), da aadana - denotes donation (contraction), ya - aayama - indicates relaxation (relaxation). It is a singular siraa marma, ura marma, and swapanitala pramana.

Location - It is situated in the urah between the stana near the entrance of aamashaya. It is the locus for satwa, raja, and tama.

7) Vasti

In Amarakosha, the term 'vasti' is defined as the area below the navel and is identified as the receptacle for urine. It is a snaayu marma, udara marma, swapanitala pramana, and it is singular in quantity.

The **location** contains alpha mamsa and shonita and serves as the seat for mutra. Injury to this marma results in death, unless the wound is caused by a renal calculus. A patient with that condition does not survive if the urinary bladder is ruptured on both sides. If the injury is on one side, there will be a wound that discharges urine. This will be addressed alone if the physician exerts full effort.

8) Nabhi

In Shabda Kalpadruma, the term nabhi is defined as udaraavarta. It is a siraa marma, udara marma, swapanitala pramana, and singular in quantity.

Location

The Sushruta Samhita describes its placement as situated between the pakwashya and aamashaya, serving as the genesis of sira.

DISCUSSION

Study of sadyapranahara marma the term sadyapranahara, although signifying a sudden loss of prana, results in death within a span of 7 days. Although it is commonly stated that marma leads to death, only sadyapranahara marma results in an expedited demise. Kalantarapranahara results in death within 15 to 30 days, vishalyaghna is effective only if the shalya is excised, while vaikalyakara and rujakara induce deformities and suffering, respectively. Therefore, sadyapranahara marma are of more significance compared to all other marma. Acharya Susruta has elucidated the rationale for why this specific category of marma induces sudden death. This is attributable to the dominance of agni guna in these areas. Upon examining the regional anatomy of these marma, it is evident that numerous essential structures are situated inside these areas.

1) Location of Sringataka: Sushruta identifies this marma as the convergence point of the sira that nourishes the nose, ears, eyes, and tongue. Since the majority of the veins supplying these structures drain directly or indirectly into the cavernous sinus, the marma can be considered to be situated in the region of the cavernous sinus, including its tributaries and contents, according to contemporary anatomy. Ashtanga Sangraha, in the chapter on nasya vidhi, states that the medicine administered into the nose ascends to the sringataka. The veins that drain the nasal mucosa empty into the cavernous sinus. Therefore, based on this reference, the site of sringataka can be identified as the cavernous sinus.

Marma vidha lakshana: A significant head injury may affect the cavernous sinus, resulting in cerebral hemorrhage. Hematoma in the vicinity of the cavernous sinus is the primary determinant of mortality. Hemorrhage and ischemia of the internal carotid artery can also result in cerebral stroke and mortality. The contemporary correlates of the panchatma sannipata include Mamsa, Sira, the cavernous sinus, the intercavernous sinus, and the venous connections of the cavernous sinus, as well as the cavernous segment of the internal carotid artery. Snayu - The diaphragm sellae, a component of the dura mater, constitutes the superior and lateral boundaries of the cavernous sinus. Sandhi - articulations of the anterior, posterior, and lateral surfaces of the sphenoid body, as well as the communications and tributaries of the cavernous sinus. Asthi – sphenoid bone.

2) Adhipatti Location: The place can be regarded as a region of confluence of sinuses, as it is the site of sira sandhi. It is situated at the external occipital protuberance region. This is the junction of intracranial venous sinuses. The confluence of sinuses is the junction of the superior sagittal sinus, straight sinus, and occipital sinus. This union of venous sinuses is regarded as the sandhi marma.

Vidha Lakshan: Trauma can cause injury to the sinuses. A skull fracture may injure the dura mater. This will lead to thrombosis in the dural sinuses. Dural sinus thrombosis may result in hemorrhagic infarction, potentially causing severe outcomes such as neurological impairments and mortality. The contemporary correlations of the panchatma sannipata are as follows: Trapezius Muscle Sira – Dural venous sinuses Snayu – Ligamentum nuchae, Tendon of the Trapezius Sandhi – Conjunction of intracranial dural venous sinuses Asthi Occipital bone (External occipital protuberance).

3). Shankha Marma Location: It is situated above the tail of the eyebrow, between the ear and forehead. It is situated in the region of the temple, which is next to the superficial squamous portion of the temporal bone. The anterior branch of the middle meningeal artery traverses deep to this location.

Vidha lakshana - A strike to the slender bone of the temporal plate may sever the middle meningeal artery. It results in significant hemorrhage between the dura mater and the bone (epidural hemorrhage), causing brain compression. The uncus herniates through the tentorial hiatus, resulting in distortion of the midbrain at this location. This exerts pressure on the midbrain's reticular system. Increased haematoma formation and elevated intracranial pressure will result in mortality. The contemporary associations of the panchatma sannipatha include Mamsa – Temporalis muscle. Sira – Superficial temporal arteries, deep temporal arteries, middle meningeal arteries. Snayu – Temporal fascia Sandhi - The articulation between the squamous portion of the temporal bone and the parietal bone, as well as the squamous portion of the temporal bone and the larger wing of the sphenoid bone. Asthi – Squamous portion of the temporal bone.

4). Kantasira Location - It refers to the area on both sides of the neck where the four sira known as matrika are situated. The marma is located in the neck, specifically in the carotid triangle, where the common carotid artery bifurcates into the internal and external carotid arteries, adjacent to the thyroid cartilage. The eight matrika consist of the exterior and internal carotid arteries, as well as the external and internal jugular veins, situated bilaterally in the neck.

Vidha lakshan: Hemorrhage from the carotid artery can be severe, leading to hypotension or shock. It can result in a central neurological impairment and mortality. Air embolism is a severe consequence resulting from a laceration of the internal jugular vein wall. The wall of this huge vein includes less smooth muscle, hence its lesion does not result in contraction and retraction, unlike arterial injuries. Furthermore, the adventitia of the venous wall is affixed to the deep fascia of the carotid sheath, which prevents the vein from collapsing. Division of the external jugular vein in the supraclavicular area may result in air embolism and

subsequent mortality, as the severed ends of the vein are inhibited from retraction and closure by the fascia firmly adhering to the vein. The contemporary correlations of the panchatma sannipata are, Mamsa - Musculus platysma et musculus sternocleidomastoid us Sira – Internal and external jugular veins, internal and external carotid arteries Snayu – Vagus nerve, investing layer of deep cervical fascia, carotid sheath Sandhi - Interconnections among the tracheal rings, thyroid cartilage, and cricoid cartilage, as well as between the cricoid cartilage and tracheal rings Asthi – Tracheal cartilages, cricoid cartilage, thyroid cartilage.

5) Guda Location: - situated in the pelvic cavity, it represents the terminal segment of the large intestine.

Vidha lakshana - Due to the proximity of arteries, veins, and nerves forming a plexus at the anal canal, the impairment of one component can result in harm to adjacent structures as well. Severe structural damage may result in haemorrhagic and neurogenic shock, ultimately leading to mortality. Profuse hemorrhage may occur due to the presence of portocaval anastomosis in the submucosal layer of the anal canal, where the superior rectal vein (portal) anastomoses with the middle and inferior rectal veins (systemic). Valves are lacking in the superior, middle, and inferior rectal veins. Consequently, any damage at the location results in significant hemorrhaging directly from the portal vein. The force of gravity is greater in that place, which may also lead to more bleeding. The contemporary correlations of the panchatma sannipata are as follows: Mamsa refers to the circular and longitudinal muscular layers of the rectum and anal canal, encompassing the anal sphincters. Sira – arterial and venous plexuses, superior rectal artery, inferior mesenteric artery. Snayu – supports for the rectum. Asthi – the coccyx. Sandhi – inter-coccygeal joints, sacro-coccygeal joint, intersection of venous, artery, and nerve plexuses.

6). Hridaya Marma Location: Its position is described as the urah pradesha, situated between the stana and above the opening of the amashaya. Therefore, its position can be identified within the thoracic cavity, specifically in the vicinity of the heart. The heart is situated nearly at the center of the thoracic cavity. It is positioned obliquely posterior to the sternum, with one-third located to the right and two-thirds to the left of the median plane. The cardiac orifice of the stomach is situated inferior to the heart.

Vidha Lakshan: The heart, despite being shielded by the thoracic cage, may be compressed between the sternum and the spinal column during a significant frontal trauma to the thorax. Both blunt and penetrating injuries to the heart can result in damage to the valve cusps, papillary muscles, and chordae tendineae. Consequently, a significant trauma can result in cardiac arrest. Cardiac arrest, or cardiopulmonary arrest, is an unforeseen cessation of effective respiration and

circulation in an individual, which may ultimately result in death. The contemporary correlations of the panchatma sannipata are, Mamsa – Cardiac musculature, intercostal musculature Sira - Aorta, pulmonary artery, superior and inferior vena cava, pulmonary vein, coronary artery, coronary sinus, and its tributaries. Snayu – Pericardium Sandhi – Sternocostal joints, Costochondral joint Asthi – Ribs, costal cartilages, sternum.

7) Vasti Marma

The marma is located in the area beneath the navel and is identified as the seat for urine. Consequently, it is situated within the pelvic cavity in the vicinity of the urinary bladder, which is known as the reservoir for urine and is positioned within the pelvis.

Vidha lakshana — The bladder may burst either intra-peritoneally or extra-peritoneally. Intra-peritoneal rupture typically affects the superior wall of the bladder and most frequently occurs when the bladder is distended and has protruded into the abdomen. Urine and blood flow unimpeded into the peritoneal cavity. It may result in peritonitis and mortality. Extraperitoneal rupture pertains to the anterior segment of the bladder wall situated beneath the peritoneal reflection. This results in the extravasation of urine. Infection may progressively lead to the formation of deep pelvic abscesses and significant pelvic inflammation due to extravasation. Mortality may also occur as a result of septic shock induced by peritonitis. The contemporary correlations of the panchatma sannipata are, Mamsa - The muscular layer of the urinary bladder, levator ani, and obturator internus. Sira — Superior and inferior vesical arteries, vesical venous plexus. Snayu – ligaments of the bladder, Sandhi – pubic symphysis, Asthi – sacrum, ischium, and pubis.

8). Nabhi Marma Location: Situated between Amasaya and Pakwasaya. The position of the umbilicus is nearly aligned with the junction of the stomach and small intestine. It can be regarded as the origin of sira solely in embryological development. In adulthood, there will be porto-caval anastomosis, and the umbilicus serves as the watershed line.

Vidha Lakshana

Significant soft tissue and intra-abdominal injuries may result in severe shock. This form of shock involves hypovolemia caused by external and internal bleeding from ruptured mesenteric arteries, accompanied by toxic substances from tissue pieces entering the bloodstream. This initiates an intravascular inflammatory response. Vascular permeability also escalates, leading to further hypovolemia. A penetrating abdominal injury may affect the peritoneum and intestinal loops, resulting in peritonitis and potentially fatal septic shock. Mortality may also result from vasovagal shock. This will occur due to the blockage of the sympathetic nervous system, leading to a loss of arterial or venous tone and

subsequent pooling of blood in the dilated peripheral venous system. This results in less venous return to the heart, thereby leading to decreased cardiac output and bradycardia. Reduced blood flow to the brain will result in cerebral hypoxia and loss of consciousness. The contemporary equivalents of the panchatma sannipata are Mamsa – Rectus abdominis. Sira - Umbilical vein and its anastomosis Snayu – Rectus sheath junction – Porta caval anastomosis. During embryonic development, the convergence of four folds occurs: two lateral folds, one head fold, and one tail fold. Asthi – third and fourth lumbar vertebrae.

CONCLUSION

Sadyapraanahara marma refers to injuries that result in death within a span of 7 days. The rapid action of Agni mahabhuta, which is predominant in the sadyapranahara marma pradesha, leads to the swift demise of the individual. An examination of the regional anatomy of various sadyapranahara marma reveals that critical components, particularly significant blood arteries, are situated in these areas. Death may result from the following causes: 1) Profuse blood loss might result in hypovolemic shock and problems arising from hematoma formation following internal hemorrhage. Air embolism. Cardiogenic shock Septic shock 5) Traumatic Shock.

REFERENCES

1. Acharya Yadavji Trikamji, editor. Susruta Samhita with Nibandha Sangraha of Dalhanacharya. 9th ed. Varanasi: Chaukhambha Orientalia, 2009; Pp-889, p-354.
2. Radakant. Prasad, editor. Shabda kalpa druma. Vol 1. 1989 ed. Delhi: Naga publishers; 1989. Pp- 325, p134.
3. Acharya Yadavji Trikamji, editor. Susruta Samhita with Nibandha Sangraha of Dalhanacharya. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-834, p-356.
4. Radakant Prasad, editor. Shabda kalpa druma. Vol 5. 1987 ed. Delhi: Naga publishers; 1987. Pp- 555, p11
5. Yadavji Trikamji Acharya, editor. Susruta Samhita with Nibandha Sangraha of Dalhanacharya. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-374.
6. Yadavji Trikamji Acharya, editor. Susruta Samhita with Nibandha Sangraha of Dalhanacharya. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-374.
7. A. Haragovinda Shastri, editor. Amarakosha. Varanasi: Choukhambha Sanskrit Sansthan, 2006; Pp-668, p-293.
8. Yadavji Trikamji Acharya, editor. Susruta Samhita with Nibandha Sangraha of Dalhanacharya. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-373.
9. Radakant Prasad, editor. Shabda kalpa druma. Vol 2. 1988 ed. Delhi: Naga publishers; 1988. Pp- 926, p861.

10. Yadavji Trikamji Acharya, editor. *Susruta Samhita with NibandhaSangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p- 371.
11. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-375. 3. *Susruta*.
12. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-369. 4. *Susruta*.
13. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p- 369.
14. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p- 371.
15. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 8th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-824, p-373.
16. Yadavji Trikamji Acharya, editor. *Susruta Samhita with Nibandha Sangraha of Dalhanacharya*. 9th ed. Varanasi: Chaukhambha Orientalia, 2008; Pp-845, p-334.