

# Journal of **Ayurveda and Integrated Medical Sciences**

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An International Journal for Researches in Ayurveda and Allied Sciences



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## Ayurveda and Integrated Medical Sciences

**REVIEW ARTICLE** 

August 2024

# **Exploring** Basti as Sadhyopranahara Marma through the Lens of Contemporary Anatomy

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#### ABSTRACT

The concept of *Marma* in *Ayurveda* holds profound significance, representing vital points on the body where life force resides. Among these, *Sadhyopranahara Marma* is particularly critical, capable of causing immediate death if injured. *Basti*, one of the 19 *Sadhyopranahara Marma*, is highlighted for its unique properties and significance. This study aims to explore why *Basti* is classified as a *Sadhyopranahara Marma*, integrating classical *Ayurvedic* principles with contemporary anatomical understanding. The study examines the anatomical structure and functional significance of *Basti*. It elucidates *Basti* as the seat of *Prana*, composed of *Alpa Mamsa Shonitha* and surrounded by multiple *Sira* and *Snayu*. Injury to *Basti* can lead to severe bleeding and hemodynamic instability, ultimately resulting in death. Comparing Ayurvedic insights with modern anatomical knowledge of the urinary bladder, the study finds parallels in the understanding of injury mechanisms and fatal outcomes. Bladder trauma can lead to hemorrhage, peritonitis, organ dysfunction, and electrolyte imbalance, highlighting the critical nature of this region in both traditional and contemporary medical contexts. In conclusion, the study underscores the timeless relevance of *Marma Shastra* in understanding human anatomy and physiology. By elucidating the unique attributes of *Basti* as a *Sadhyopranahara Marma*, this enriches our understanding of Ayurvedic principles and their integration with modern medical practice. As we bridge the gap between tradition and innovation, the study emphasizes the holistic vision of healthcare that transcends temporal boundaries.

Key words: Basti, Sadhyopranahara Marma, Urinary Bladder

#### **INTRODUCTION**

Marma is a structural entity where *Prana* resides<sup>[1]</sup>, making it one of the *Pranayatana*, hence guarding them against damage is essential. As a *Shalyatantra Pradhana Shastra*, the *Sushrutha Samhitha* provides indepth explanations for each of the 107 *Marma* points.<sup>[2]</sup> They are considered as the areas that should be avoided during surgeries by *Sushruta Samhitha*.

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Submission Date: 12/07/2024 Accepted Date: 25/08/2024

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.9.8.23

Marma are vulnerable points on the human body where any form of injury might result in death or severe disability. [3] It is an area of the body that contains the five anatomical structures Mamsa (muscles), Snayu (ligaments), Asthi (bone) and Sandhi (Joints) [4] which are considered to be made up of three elements Marutha, Teja and Soma, they also include Triguna. [5] Depending on the effect of injury and its prognosis Marma points are classified into following types [6]

- Sadhyo-Pranahara Symptoms varies from instant death to death within 7 days.<sup>[7]</sup>
- Kalantara Pranahara Symptoms varies from death within 15 days to 30 days.<sup>[8]</sup>
- 3. Vishalyaghna Death occurs immediately if the Shalya is withdrawn from marma location. [9]
- Vaikalyakara Injury will lead to deformity and pain.<sup>[10]</sup>
- 5. *Rujakara* Injury to this *Marma* will lead to severe pain.<sup>[11]</sup>

Here, emphasis will be placed on *Sadhyopranahara Marma* as it is necessary to pay greater attention to *Marma* that result in instant death. *Basti* is one among the 19 *Sadhyo-Pranahara Marma*<sup>[12]</sup> and *Acharya Charaka* also explained *Basti* as one among *Trimarma*. Hence here an effort is made to understand why *Basti* is regarded as one of the *Sadhyo Pranahara Marma*.

#### **OBJECTIVES**

- 1. To comprehend what constitutes a Sadhyopranahara Marma
- 2. To determine what defines *Basti* as *Sadhyopranahara Marma*

#### **MATERIALS AND METHODS**

For the conceptual study of *Basti* as *Sadhyopranahara Marma* following materials were utilized:

- 1. Sushruta Samhitha
- 2. Charaka Samhitha
- 3. Textbooks of Modern Anatomy
- 4. Various Medical Journals

#### **REVIEW OF LITERATURE**

#### Anatomy of Basti Marma as Per Classics

Basti Marma is also called as Mutrashaya as it functions as the reservoir for urine and also this marma is considered to be the Uttama Sthana for Prana to reside. This Marma is made up of Alpa Mamsa Shonitha<sup>[14]</sup> and is completely covered by multiple Sira and Snayu.<sup>[15]</sup>

**Location** - Inside *Kati Pradesha*<sup>[16]</sup> *Basti Marma* measures upto 4 *Angula*. [17]

Anatomical relation of *Basti Marma* as per *Sushrutha Samhita*, it is surrounded by *Nabhi, Prushta, Kati, Mushkha, Sthula Gudha, Vankshana* and *Shepha*.<sup>[18]</sup>

#### **Effect of Injury**

Any kind of injury that causes the *Basti* to break on both/multiple sides of the *Basti*, will lead to *Sadhyomaranam*, except to those injuries that are

caused by *Ashmari* and also when injury is only on one side. [19]

#### **Modern Anatomy of Urinary Bladder**

The urinary bladder is a muscular reservoir of urine, which lies in the anterior part of the pelvic cavity. The bladder varies in its size, shape and position according to the amount of urine it contains. When empty, it lies entirely within the pelvis; but as it fills it expands and extends upwards into the abdominal cavity, reaching up to the umbilicus or even higher. [20]

The urinary bladder receives its blood supply from branches of the internal iliac artery. Here is a detailed overview of the blood supply of the urinary bladder:

#### **Arterial Supply:**

- The superior vesical arteries: These arise from the anterior division of the internal iliac artery and supply the upper part of the bladder.<sup>[21]</sup>
- The middle vesical arteries: These also arise from the anterior division of the internal iliac artery and supply the middle part of the bladder.<sup>[22]</sup>
- The inferior vesical arteries: In males, these arise from the anterior division of the internal iliac artery and supply the base of the bladder and the seminal vesicles. In females, the equivalent arteries are the vaginal arteries, which supply the base of the bladder and the vagina.<sup>[23]</sup>
- The obturator artery: This artery may contribute small branches to supply the inferolateral aspects of the bladder.<sup>[24]</sup>

#### **Venous Drainage:**

 The veins accompanying the arterial supply form a vesical venous plexus, which drains into the internal iliac veins.<sup>[25]</sup>

#### **DISCUSSION**

The words Sadhyo and Pranahara make up the phrase Sadyopranahara; Sadyo means immediately, and Pranahara implies taking away Prana. Marma are regarded as Pranaadhisthana, as previously mentioned in the introduction. So, we must understand exactly

what *Prana* is; only then can we comprehend what influences *Pranaharana*.

The five sense organs, Vayu, Pitta, Shleshma, Satva, Raja, Thama and Bhoothatma are together referred to as Prana.[26] Now the question arises what causes a Marma to lose its Prana instantly. We learn that the Sadyopranahara marma are the Marma points with Agni Guna predominance and that they bring death through the Ashu (rapid) Ksheenatha of Agni Guna<sup>[27]</sup>, which is one among the 12- Prana mentioned prior. Agni Guna is shown to be nothing beyond the Ushma of Pancha-Pitta<sup>[28]</sup>, Pancha-Bhootha<sup>[29]</sup> and Sarva-Dhathu[30], and we are also informed that Arthava and Shonitha both has Agneyatva<sup>[31]</sup> within them. Compiling these two pieces of information in the context of Shonitha being Ashraya for Pitta reveals that Shonitha is the most important aspect that must be considered. The assertion that Chaturvidha Sira are nourishing/sustaining Snayu, Asthi, Mamsa and Sandhi provides evidence to this.[32]

Consequently, all Sadhyopranahara Marma such as Shrungataka, Adhipathi, Shankha, Ashtamatrika, Guda, Hridaya, Basti and Nabhi are ideally Agni Guna (Shonitha) Pradhana; yet, how can Basti being Alpa Mamsa Shonitha, become Sadhyopranahara?

Basti is a structure that resembles Alaabu<sup>[33]</sup> and is encircled by Sira, and Snayu serves as the seat of Prana. This reference on the anatomy of Basti clears this query of whether Basti being a Snayu Marma has Agneya Guna as Pradhana. Since Basti is wrapped by multiple Sira and Snayu damage to this Marma can lead to damage of those Sira which could further lead to excess bleeding and then causing death of an individual. This also gives us the insight that Marma told in Sushruta Samhitha are not merely the organs it could also be the surface landmarks for the Marma points.

Though influence of *Agni Guna*, *Soma Guna* and *Vayu Guna* will be present in all types of *Marma*, the specific mentioning of particular *Guna* to particular type of *Marma* suggests the *Pradhanyatha* in the loss / hampering of those specific *Guna* in a *Marma*. As an example, we can consider that while *Sadhyopranahara* 

Marma and Kalanthara Pranahara both have the involvement of Agni Guna in them, the death gets delayed in Kalanthara Pranahara Marma as the Pradhanyatha was given to the loss soma Guna than Agni Guna suggesting gradual blood loss thus Agni Guna loss occurs followed by loss of soma Guna from the body.

# Contemporary View of Urinary Bladder as Fatal Location

Immediate Death from Urinary Bladder Injury Can Occur Due to Several Reasons, Including:

- Hemorrhage: Damage to the blood vessels supplying the bladder, such as the vesical arteries, can lead to rapid and severe bleeding, causing hypovolemic shock and death.<sup>[34]</sup>
- Peritonitis: If the bladder rupture leads to the spilling of urine into the peritoneal cavity, it can cause peritonitis, a severe inflammation of the abdominal lining. Peritonitis can further lead to septic shock and death.<sup>[35]</sup>
- 3. Infection: Urine is normally sterile, but if it spills into the abdominal cavity due to a bladder injury, it can lead to a severe infection that spreads rapidly and can be life-threatening. [36]
- Organ Dysfunction: Severe trauma to the bladder can also lead to dysfunction or damage to surrounding organs, such as the ureters, and major blood vessels, which can result in rapid deterioration and death.<sup>[37]</sup>
- Electrolyte Imbalance: The release of urine into the abdominal cavity can disrupt the body's electrolyte balance, leading to cardiac arrhythmias and other life-threatening complications.<sup>[38]</sup>

Surgical procedure called Suprapubic Cystostomy<sup>[39]</sup> is carried out when there is obstruction to the normal urinary flow, in this, a connection is surgically created between skin and urinary bladder. In this operation, the bladder is distended with about 300ml of fluid; as a result the anterior aspect of the bladder comes in direct contact with the anterior abdominal wall & can be approached without entering peritoneal cavity.

Here bladder is approached from one side and only one incision was made. This is same as mentioned earlier that any kind of injury that causes the *Basti* to break on both/multiple sides of the *Basti*, will lead to *Sadhyomaranam*, except to those injuries that are caused by *Ashmari* and also when injury is only on one side<sup>[19]</sup> All the above-mentioned explanations indicate that even in contemporary science blood or blood circulation is a factor, either directly or indirectly involved in deaths due to bladder injury which supports the conceptual hypothesis that *Basti Marma Abhighatha* is not merely an injury to the tissues (*Snayu*) of urinary bladder but it is the injury to Hemodynamics over the bladder which is used as the surface marking by our *Acharya*.

#### **CONCLUSION**

Based on the comprehensive exploration of Basti as Sadhyopranahara Marma through the integration of classical Ayurvedic principles and contemporary anatomical understanding, it becomes evident that Basti holds profound significance in both traditional and modern medical contexts. Through the lens of Ayurveda, the Basti Marma emerges as a vital locus of life force, intimately linked to the sustenance and manifestation of Prana. Its classification as a Sadhyopranahara Marma underscores its critical nature, as any injury to this site can result in immediate loss of life. Moreover, a comparative analysis with modern anatomical knowledge of the urinary bladder elucidates the physiological complexities underlying injuries to this region. From hemorrhage to peritonitis and organ dysfunction, the potential consequences of bladder trauma mirror the ancient understanding of Basti as a site vulnerable to life-threatening outcomes. In essence, the convergence of ancient wisdom and contemporary science reaffirms the timeless relevance of Marma Shastra in understanding the intricate dynamics of human anatomy and physiology. By elucidating the unique attributes of Basti as a Sadhyopranahara Marma, this study not only enriches our knowledge of Ayurvedic principles but also highlights the enduring relevance of traditional concepts in informing modern medical practice. As we

continue to bridge the gap between tradition and innovation, the exploration of *Marma Shastra* serves as a testament to the holistic vision of healthcare that transcends temporal boundaries.

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**How to cite this article:** Arpitha S, Vivek A Nair, Prasanna S. Exploring Basti as Sadhyopranahara Marma through the Lens of Contemporary Anatomy. J Ayurveda Integr Med Sci 2024;8:157-162.

http://dx.doi.org/10.21760/jaims.9.8.23

**Source of Support:** Nil, **Conflict of Interest:** None declared.

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