



A COMPREHENSIVE STUDY OF BASTI MARMA W.S.R TO ITS SADYO PRANA-HARATA

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ABSTRACT

The unique concept of *Ayurveda* is *Marmas*. According to ancient scholars, the description of total 107 *Marmas* in the body has been described. It is formed by the convergence of *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi* and it is the site of vital energy. *Marma* are the endangered areas present in the body. Due to any trauma or injury on the region may cause loss of function of that region or organ or site & even death may occur which is dependent on the strength of the trauma. *Acharya Sushruta* has described *Marma* according to the surgery point of view. *Acharya Charaka* has given importance to *Basti Marma* by placing it in *Trimarma* of body (*Hridaya*, *Basti*, *Shira*). *Basti Marma* is considered as one of the *Sadyopranahara Marma* due to which any injury to this *Marma* may cause peritonitis, pelvic fracture and deep vein thrombosis. So, the injury or trauma on *Basti* region can cause death due to hypovolemic shock and pulmonary embolism. So this is very important to review the anatomical position of *Basti* and fatality of *Basti Marma* in present era. Now a days blunt trauma i.e road accidents, sports injury has become the leading cause of pelvic injury. So, it is very essential to understand about the *Basti Marma* and traumatic effect on the urinary bladder in the light of contemporary science.

Keywords: Basti , Marma , Pranayatana, Jeevsthan , Chetana .

INTRODUCTION

Ayurveda is the science of life which has focused on prophylactic aspect rather than curative aspect. *Marma* science is one of the unique concepts of *Ayurveda*. *Marmas* are the vital and endangered areas present all over the body i.e. head, neck, trunk and extremities¹. *Marmas* are formed by the convergence of muscles, vessels, ligaments, tendons, bones and their joints². There is presence of, *Tridosha*, *Triguna*, *Bhutatma*³ and *Chetna Dhatu*⁴ in these *Marma* areas. So, if there is any trauma or injury to that areas may cause pain or even death other symptoms may also appear i.e., syncope, numbness, semi-consciousness etc⁵. So, the knowledge of *Marma* areas is not only necessary for individuals for protecting their vital areas from injury but also for surgeons and physicians to save these vital areas during medical intervention or surgical procedures.

Aim & Objectives –

1. To explain the conceptual aspect of *Basti Marma*.
2. To explain the anatomical position and structural entity around *Basti Marma*.
3. To explain clinical aspects of *Basti Marma* in ayurvedic literature with respect to modern science.

In vedic literature, many references can be found regarding any injury at *Marma* areas and protection of one's *Marma* by wearing guards but now a days, road accidents, sports injuries are the main causes of pelvic injury resulting in urinary bladder trauma. So, to overcome these situations, individuals must know the location of vital areas of our body for protection and medication may be provided to the sufferer of bladder injury and any faulty procedure may be avoided during surgery.

Materials and Methods- The literature has been traversed from the classical texts of *Ayurveda*, their commentaries and modern books. The collected literature from different sources has been evaluated to review the position of *Basti Marma* in pelvic region and the prediction of injury at this *Marma*.

Review of Literature – The word is *Marma* formed by the union of two words –*Mri-dhatu* +*Manin prataya* which means *Jiva sthan* (site of life). The *Marmas* has been classified into five categories on the basis of structural entity. i. e. *Mamsa*, *Sira*, *Snayu*, *Asthi* and *Sandhi* and five on the *Parinama* basis. i.e., *Sadyo pranahara Marma*, *Kalantara Pranahara*, *Vaikalyakara*, *Vishalyaghna* and *Rujakar Marma*⁶. *Basti Marma* has been classified under *Sadyo pranahara Marma*⁷.

| Name of Marma | Predominant Mahabhuta | Effect of Injury |
|---------------|-----------------------|------------------|
|---------------|-----------------------|------------------|

1. *Sadyo pranahara Agni* Causes death in 7 days.
2. *Kalantara Pranahara Soma+Agni* Causes death in 15-30 days.
3. *Vaikalyakara Soma* Causes deformity.
4. *Vishalyaghna Vayu* Death due to loss of *vayu*
5. *Rujakar Agni +vayu* causes severe pain.

Anatomical Consideration of Basti - Acharya Sushruta has described the situation of the *Basti* in the middle of *Nabhi* (Umbilicus), *Mushka* (Scrotum) and *Shepha* (Penis), *Prishtha* (back) and *Vankshan* (inguinal region). It is situated internally in *Gudasthi vivar* (pelvic cavity) and is related to *Paurush* (prostate) and *Vrishan* (testis) inferiorly and to *Guda* (rectum) posteriorly. It acts as receptacle of urine having a single orifice which is directed downwards. The shape of *Basti* is just like “*Alabu*” (gourd) i.e., oval in shape and is surrounded on all side by *Sira* and *Snayu*⁸. It is considered as one among 56 *Pratyanga*⁹, 10 *Pranayatana*¹⁰ and 15 *Kosthanga*¹¹. It develops from *Matrij bhava*¹² from the essence *Rakta* and *kapha* during embryonic life¹³. *Basti* is the *Moolasthan* for *Mutravaha srotas*¹⁴. *Basti Marma* is related to *jala Mahabhuta*.

Urinary Bladder- It is a hollow muscular organ which serves as reservoir of urine & is situated in the anterior part of pelvic cavity behind the pubic symphysis. When the Urinary bladder gets filled then it becomes abdominopelvic organ reaching up to the umbilicus or higher. The shape of the urinary bladder

is oval when it is filled with urine & is more similar with "Alabu". When the urinary bladder is empty then its shape is pyramidal. The apex of the urinary bladder is related to the umbilicus by median umbilical ligament. The base is separated from rectum by recto vesical pouch and lower part is related to vasa deferens. From the above explanation, it can be said that the Urinary bladder and Basti has the same structural and functional anatomy.

Basti Marma – Basti Marma is situated in Kati Pradesh¹⁵ (pelvic region) and is surrounded by *Sthulaguda* (rectum), *Mushka* (scrotum), *Sevani* (perineal sutures), *Shukravaha* (seminal vesicle) & *Mutra vaha nadi* (urinary channels)¹⁶. Basti is considered as one of the Sadyopranahara Marma, *Snayu Marma*, *Udargata Marma*¹⁷, three Pradhan Marma¹⁸ (*Trimarma-Hridaya*, *Basti*, *Shira*) and *Pranayatana*. The shape of the Basti Marma is just like *Dhanurvakrakar*¹⁹ i.e., like a curved bow. Size of Basti Marma is *swapanital* (4 Angula approximately 7 cm.)

Structure Associated with Basti Marma- The structures related to Basti Marma can be considered as.

1. Urinary bladder and its associated structures (terminal part of ureter, vas deferens and seminal vesicle).
2. Ligaments of urinary bladder i.e., puboprostatic or pubovesical ligament and another ligament.
3. Arterial supply of the urinary bladder i.e., internal iliac artery and its branches.
4. Venous drainage of the urinary bladder i.e., internal iliac vein and its tributaries.
5. Nerve supply of the urinary bladder i.e., branches from inferior hypogastric plexus and pelvic splanchnic nerve.
6. Lymphatic drainage of urinary bladder.
7. Prostate and prostatic urethra.

The injury of all these structures can cause sudden death if proper medication is not given at that time.

Injury or Trauma on Urinary bladder – Maximum urinary bladder injury can result from external trauma (80%), Iatrogenic causes (14%) and spontaneous bladder rupture (1%)²⁰. External trauma may be blunt injury or penetrating injury. Blunt injuries may be caused by road accidents (car, bike accidents), fall

from the height and penetrating injuries may occur due to gunshot & stab wound. The iatrogenic causes like obstetric trauma (may occur during forceps delivery / Prolonged labour i.e. pressure from fetal head to mother pubis), Gynecological trauma (during vaginal or abdominal hysterectomy), Urologic trauma (during biopsy and endoscopy). All these injuries may cause the rupture of urinary bladder either extraperitoneal, intraperitoneal and combined.

Intraperitoneal rupture²¹- It occurs usually in a fully distended bladder because of its dome shaped and its superior surface is covered by peritoneum. Due to which the urinary bladder cause leakage of urine into the peritoneal cavity resulting in peritonitis which cause death within 7 days following septic shock. The clinical features of intraperitoneal rupture are-

1. Sudden pain in suprapubic region and lower abdominal region, distension of abdomen.
2. Arrest of faeces and flatus, lost bowel movement.
3. Painful and frequent micturition passing only a small quantity of urine.
4. Muscle guarding is an indication of irritation of parietal peritonitis.

All the above clinical features are similar with the traumatic symptoms of Basti Marma as described by Acharya Charak in *Sidhisthan*. These are- *Vata mutra varchonigraha* (retention of flatus, urine, faeces) – Similar with arrest of faeces and flatus *Vankshan mehana Basti shoola* (pain in groin region, penis and bladder region) - Similar with pain in suprapubic region and lower abdominal region. *Basti kundal* (Spasm in urinary bladder) *Udavarta* (upward movement of vayu in abdomen) *Nabhi kukshi guda shroni upstambha* (stiffness in umbilical, abdominal and pelvic region) - Similar with muscular rigidity²². Acharya Sushruta has mentioned that any injury to Basti Marma can cause immediate death. In case of severe injury to Basti bilaterally (on both sides), causing immediate death. While in case of urine leakage only through one side, the person can be saved. Trauma or any injury causes immediate death in following cases-

- (a) *Mutrasanga* (urine obstruction)

(b) *Mutrajanya Udavarta* – Due to vitiation of *vata dosha*, obstruction of urine flow occurs, leading to tilting of the urinary bladder upside so the discharging of urine in upward direction (*Udavarta*) which leads to the pressure over abdominal organs and heart, flooding the pelvic cavity with urine, finally causing the death.

(c) *Mutra Ati Pravritti*- Excessive discharge of urine in pelvic cavity & abdominal cavity through the opening in the bladder caused due to any trauma which can also cause bleeding leading to death.

Extraperitoneal rupture- It is more common, occurs in 80% cases of urinary bladder rupture. It occurs in non-distended bladder and pelvic fracture leading to avulsion tear at pubo prostatic and pubovesical ligament. This rupture may cause death within 7 days. The clinical features of this rupture are collection of urine and blood in extra peritoneal space in front, diffuse pain and tenderness in the lower abdomen, swelling in the scrotum and abdominal wall, inability to pass the urine, features of shock and other associated injuries may be noted. These clinical features are more similar with traumatic symptoms of *Basti Marma*²³.

Combined rupture – (Intra and extraperitoneal rupture)

It mostly occurs by penetrating injury in the fully distended urinary bladder. Extravasation of the urine from urinary bladder depends upon the location of laceration. If the perforation is anterosuperior, then fluid can spread intra or extraperitoneal or both.

Pelvic fracture²⁴- If any injury to the pelvic cavity, there is chances of arterial hemorrhage because the pelvic cavity is supplied by internal iliac artery and its branches. So, this arterial hemorrhage may cause death within 7 days. Deep vein thrombosis is one of the complications of pelvic fracture in which a semi solid blood clot in the vein has get high tendency to develop pulmonary embolism and sudden death. There is the chance of formation of embolus in the internal iliac vein which may convert into pulmonary embolism which may cause sudden death. Patients with pelvic injury are at high risk of thromboembolic complication.

Rupture of Posterior Urethra- It is also associated with pelvic fracture commonly due to road traffic accidents. In any injury to pubic symphysis there is chance of internal bleeding due to tear in bladder wall by puboprostatic ligament which leads to the hypovolemic shock and death within 7 days.

Other causes are –Urethral instrumentation, calculus passage, catheterization and during prolonged labour. The clinical features are blood at external urinary meatus, inability to micturate, suprapubic tenderness and dullness, shock due to blood loss, extravasation of urine into perineum.

Acute urinary retention- It is a very rare life-threatening condition seen in urethral trauma. Clinical features are painful distension of bladder, inability to pass urine, swelling in hypogastric region.

Ashmari²⁵ – Acharya Sushruta has explained that injury to *Basti* causes death except in the case of calculus but if it is injured on both sides then the patient doesn't survive, if it is injured at one side then it heals with difficulty. The above description indicates bilateral intravesical ureteric calculus. If the renal stone may get impacted at ureteric orifice of bladder on both sides, then there is chance of death within 7 days due to backflow of urine.

DISCUSSION

So, it is most important for individuals to know the area of *Basti Marma* to protect that area of body from any injury or trauma. This knowledge about *Basti Marma* will be also helpful for physicians and surgeons to save this *Marma* area during surgical procedures or any medical intervention. In the past period of history, the causes of the urinary bladder injury were the use of sharp weapons used in battle but now a days the main causes of bladder injuries are sports injury & road traffic accidents & ignoring the urge of urination due to busy lifestyle. Due to these injuries, urinary bladder damages intra and extra peritoneally or both. So, from the above description, we should have the appropriate knowledge of anatomic-physiological concept of *Basti* is necessary for proper diagnosis of disorders of urinary bladder & proper medication given to the victim at that time of trauma or

any injury on urinary bladder. *Basti* is *Sadyaprana-hara Marma* which may cause sudden death or death after some time if it gets injured.

CONCLUSION

From the above explanation, it is clear that the description of *Basti* in Ayurvedic texts closely resemblance with the urinary bladder in modern science. It is important and vital part of the body, and everyone should know the appropriate knowledge of anatomical – physiological concept of *Basti* for proper diagnosis of disorders of urinary bladder and Trauma or any injury on urinary bladder causes the rupture of bladder and even sudden death.

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