

A CLINICO-ANATOMICAL REVIEW OF BASTI MARMA W.S.R. TO MARMĀBHIGHĀTA & AŚMARĪ

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ABSTRACT

Āyurveda the science which basically emphasizes on the vital parts of the body known as *marma* and their proper significance in the respect of treatment procedures along with their preventive measures to save them from getting traumatised. Among these *marma*, *basti* gets its prime place due to being the place of urine and also the fate of the human body when it gets traumatised. In *Āyurvedic* treatises it is placed among the three important *marmas*. And any traumatic injury directly in it or nearby it causes instant death or death within 15 days respectively. This facts of traumatic injury and its pathophysiology can be correlated with **peripheral vascular shock** occurred due to trauma of urinary bladder & **septicemia** occurred due to suppurative pelvic cellulitis respectively.

KEYWORDS: *Marma*, *Basti*, Peripheral Vascular Shock, Septicemia.

INTRODUCTION

In *Āyurveda* under the description of *marma* i.e. vital organs, *basti* is one such *marma* (vital organ) which can be compared to any of the anatomical structures like the urinary bladder, ureters, urethra, renal blood vessels, nerves supplying the urinary bladder and structures of pelvic cavity. While referring to *basti marma*, we can specifically refer to urinary bladder as is described in *Suśruta samhitā*.

***Basti marma* location:** *Susruta* has said that *basti* is located in *madhya śarīra* i.e. *udara*^[1] of human body. It is situated in the *ābhyāntara kaṭī* (within the pelvic cavity) and has less

māmsa (muscle), *rakta* (blood) and performs the function as reservoir of urine (also known as *mūtrāśaya*).^[2]

It is predominantly made up of *snāyu* (ligaments, fibrous and hard tissue) and is one of the delicate and vital organs of the body. *Ācārya Cakrapāṇi* has described *Basti marma* (urinary bladder) among the three vital *Marmas* over the description given by *Caraka* as *marmatraya*.^[3] *Caraka* has given great importance to this *marma* just like *hṛdaya* (heart) and *śira* (head). In his opinion, it is the receptacle of urine, situated amidst *sthūlaguda* (large intestine and rectum), *muṣka* (testis), *sīvanī* (phrenum) and the ducts that carry semen and urine.^[4]

In *Aśmarī Cikitsā*, regarding its situation *Ācārya Suśruta* has also mentioned that urinary bladder is situated in the space surrounded by umbilicus, back, waist, scrotum, rectum, groin & penis and has single opening, thin wall & faces downwards.

Urinary bladder, top of the bladder, penis, testicles, rectum- these are all mutually related and situated in the pelvic cavity. Urinary bladder is like bottle gourd in appearance and provided with veins & ligaments. It is the receptacle of urine, base of excrements and an important vital organ (*marma*). Urine carrying channels existing in intestine saturate the bladder with urine constantly as rivers do for sea, thousands of opening of these channels are not visible due to minuteness. Bladder is filled up with oozing of urine carried day & night by the channels from the region between stomach & intestines. As a new pitcher put in water up to the neck is filled from sides, in the same way bladder if filled with urine⁵. *Basti marma* is classified into various categories as *Madhya Śarīrgata Marma/ Udargata Marma*⁶, *Kūrca (Snāyu) Marma*^[7], *Sadhya Prāṇahara Marma*.^[8]

Basti marma is predominantly made up of *snāyu* i.e. ligaments and fibrous tissue, which form the structural component of this *marma*. The other elements namely *śira* (blood vessels), *asthi* (bone), *sandhi* (joints) and *māmsa* (flesh, muscle) are also present but in a lesser proportion.

MATERIALS AND METHODS

1. Various theoretical matter of *Āyurvedic* treatises are collected from *Suśruta samhitā*, *Caraka samhitā* & Commentary of *Cakrapāṇi* on *Caraka Samhitā* named *Āyurveda Dīpikā*.

2. Relevant matters are also collected from the modern textbooks like “A Concise textbook of surgery” by Dr.Somen Das & Bailey & love’s “Short Practice of surgery” and also from various websites.

3. The relevant collected matter from *Āyurvedic* treatises & modern textbooks are together compared critically and a marked conclusion is drawn on the basis of subjective findings as per literary & practical perspectives.

RESULTS AND DISCUSSION

Regarding formation of *Aśmarī*, *Suśruta* has said that *vāta*, *pitta* & *kapha* when gets mixed with the *upsneha* of *mūtra* i.e. the deposition of urinary salts together along with urine (*mūtra*) forms the *Aśmarī* i.e. urinary calculus in bladder.^[9]

This same can be correlated with the formation of secondary calculus in urinary bladder. As a bladder stone is usually free to move in the bladder and it gravitates to the lowest part of the bladder. Secondary vesicle calculus is the one which occurs in presence of infection. This type of calculus is mostly formed by deposition of urinary salts upon a foreign body in the bladder. Stones may be asymptomatic and found incidentally.

The term *Aśmarī Vraṇādyte* given in original text of *Suśruta samhita*¹⁰ suggests that the rupture of the bladder which are not surgical but is due to irregular and asymmetrical rupture of urinary bladder. He also mentioned that the rupture of bladder occurred due to the reason other than calculus (*Aśmarī*) causes instant death i.e. the rupture will be of *sadyomaraṇa* type. *Ācārya Suśruta*¹¹ has clearly mentioned that the **lateral cystotomy** on both sides of the urinary bladder is extremely dangerous and likely to take away the life of person except when **only one** wound is formed during extraction of a calculus. If the injury is confined to one side, the chances of extravasation of urine through the wound is there. Such wound may get healed if it is treated with great care.

This above statement of *Ācārya Suśruta* is also as it is right in the light of modern knowledge. As etiologically the rupture of bladder can be of below said types.

- ✓ Blunt Trauma
- ✓ Penetrating Trauma
- ✓ Obstetric Trauma
- ✓ Gynecological Trauma
- ✓ Urologic Trauma

- ✓ Orthopedic Trauma
- ✓ Idiopathic Bladder Trauma

Suśruta has also mentioned that the trauma occurred directly in the *basti marma* which is of *sadyahprāṇahara* type causes instant death (i.e. within 7 days) but when the trauma occurs in the nearby position of *sadyahprāṇahara marma* then that will be considered as *kālāntaraprāṇahara* type (i.e. death occurs within 15 days).^[12] In the light of modern knowledge these two types of traumatic presentation can be correlated with **peripheral vascular shock** occurred due to trauma of urinary bladder & **septicemia** occurred due to suppurative pelvic cellulitis respectively.

Dr. Somen Das in “A Concise textbook of surgery” said that rupture of the urinary bladder may occur from fracture of the pelvis or a blow or kick on the abdomen when the bladder is distended.^[13] Death occurs from shock or peritonitis due to extravasation of urine. The violence leading to rupture of bladder may be accidental, or occur from a sharp instrument perforating through vagina in case of abortion or during delivery by pressure of child’s head causing over-dilatation. The susceptibility of drunken person to bladder rupture is due to their distended bladder.

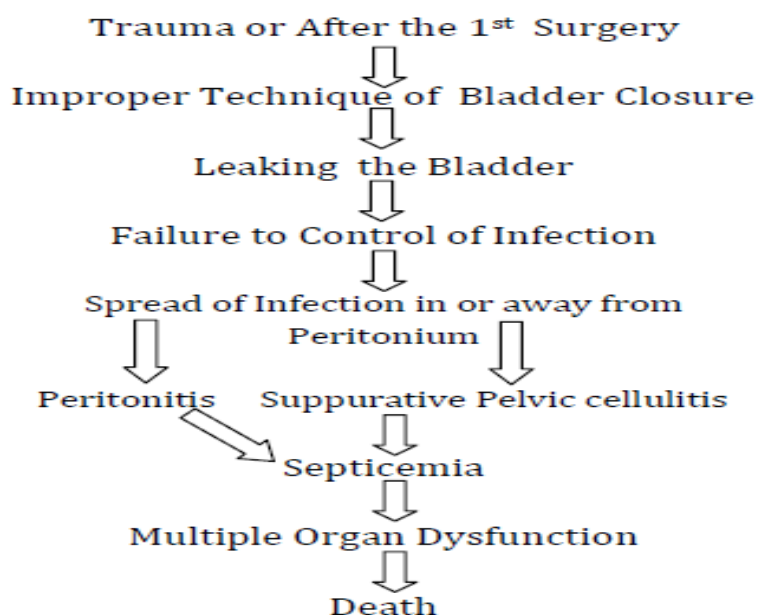
Anatomically if we look the urinary bladder, its relationship with peritoneum is also essential to consider in respect of trauma to this particular *marma*. Rupture of the bladder may be intraperitoneal (20%) or extraperitoneal (80%).^[14] Intraperitoneal is associated with sudden agonising severe pain in the hypogastrium, often accompanied by syncope. The shock subsides and the abdomen distends and there is no desire to micturate. Peritonitis does not follow immediately if the urine is sterile. Varying degree of rigidity is present on examination.^[15] Extraperitoneal rupture is usually caused by a fractured pelvis or is secondary to major trauma or surgical damage.

**PATHOPHYSIOLOGY OF PERIPHERAL
VASCULAR SHOCK**



This peripheral vascular shock can be correlated with the features of *basti marma* as *sadyahprānahara marmābhighāta* in which trauma directly occurs over the urinary bladder or urinary bladder is ruptured by any urinary calculus.

**PATHOPHYSIOLOGY OF SEPTICEMIA
due to SUPPURATIVE PELVIC
CELLULITIS**



This septicemia due to Suppurative Pelvic cellulitis can be correlated with the features of *basti marma* as *kālāntaraprāṇahara marmābhigāta* in which the trauma occurs adjacent to the urinary bladder.^[16]

The preferred evaluation is by retrograde computed tomography (C.T.) cystogram to classify the injury as intra or extraperitoneal. Intraperitoneal injuries will always require open repair, while extraperitoneal injuries can be managed with catheter drainage alone in a majority of cases, with some notable absolute exceptions (bone fragment projecting into the rupture, open pelvic fracture and rectal perforation).

Patients with extraperitoneal ruptures treated conservatively have higher rates of acute complications (12-26%), and these tend to be more serious (fistula, failure to heal, sepsis). Chronic complications are also more common in this population (21%) and include bladder neck stricture and frequency/urgency of urine.

CONCLUSION

So, by considering the above said facts we can conclude that the results of *marmābhigāta* of *Basti* and procedure of *Basti bhedana* as mentioned in treatise by *Suśruta* in *Aśmarī chikitsa* is approximately same as the bladder rupture due to trauma and vesicle calculus formation and its surgical management described in modern medical science.

In the light of modern knowledge the two types of traumatic presentation viz. *sadyahprāṇahara marma* & *kālāntaraprāṇahara marma* over *basti* (urinary bladder or its adjacent parts) can be considered as **peripheral vascular shock** occurred due to trauma of urinary bladder & **septicemia occurred** due to Suppurative Pelvic cellulitis respectively.

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