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Mutrakruchha according to Ayurvedic Literature

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ABSTRACT

Difficulty in passing urine, associated with pain is termed as *Mutrakruchha*. According to Ayurvedic literature, *Mutrakruchha* has been classified as 8 types by *Charak* as well as *Sushrut*. The classification is made according to *Doshas*. The term *Mutrakruchha* comes under the disorders of *Mutravaha Srotas*, description of this disease is mentioned in almost all classical texts which reflects its prevalence in ancient period. It is a disease involving *Basti Marma*. As *Basti* is one among the *Trimarma* (main three vital organs), it has great therapeutic importance. *Acharyas* has mentioned and elaborately explained the *Mutrakruchha* and its type in comprehensive manner. As manifestation of *Mutrakruchha* and lower urinary tract infection are similar, an attempt has been made in this article to understand the concept of Lower urinary tract infection in Ayurveda with comparison to Modern concept.

Key words: *Mutrakruchha*, *Ayurvedic Literature*, *Lower Urinary Tract Infection*, *Chikista*

INTRODUCTION

“*Dosha Dhatu Mala Mulam Hi Shareeram*” *Dosha*, *Dhatu* and *Mala* are basic substratum of the *Shareera*. The painful voiding of urine is known as *Mutrakruchha*. In this disease patient has urge to micturate, but he passes urine with pain *Mutra* is one among *Trimala* and it plays a major role in *Kledavahana*. *Mutravega* is one among the *Adharniya Vegas*. *Basti* which is the *Srotomula* of the *Mutra* is among the *Trimarma* in our classical text the *Dysuria* is described in the form of 8 types of *Mutrakruchha* by *Acharya Charak* and *Sushrut*.

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Urinary tract infections are the leading cause of gram-negative sepsis in hospitalized patients.

They are important cause of morbidity and might result in renal damage, often in association with vesicoureteric reflux (VUR).

Urinary tract infections are second in frequency after upper respiratory tract infections.

Incidence and degree of morbidity and mortality from infections are greater with those in the urinary tract than with those of the upper respiratory tract. *Mutra* is an outcome product digestion of food and metabolism in the body, it is passed through urethra.

In both *Mutraghata* and *Mutrakruchha*, *Krichhrata* (*Dysuria*) and *Mutra-Vibhandhta* are simultaneously present but in *Mutrakruchha* there is predominance of *Krichhrata* (*dysuria*)

Urinary tract infection refers to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract.

Bacteria are most commonly responsible, although yeast, fungi and viruses may produce urinary infection.

MATERIALS AND METHODS

Basti and *Vankshana* have been considered as the *Moola* of *Mutravaha Strotas* and its *Dushti* leads to excessive urination or oliguria, increased frequency, painful micturition etc.^[1]

Chikitsa Sthana, eight types of *Mutrakrcchra* have been defined along with its aetiopathogenesis and treatment.^[2] Here the term *Mutrakrcchra* has been used instead of *Mutraghata*. Further in *Siddhithana*, thirteen types of *Bastiroga* have been described under the caption of *Mutradosha* and are different from the disease *Mutrakrcchra*.^[3]

In *Sushrut Samhita* in *Uttartantra*, '*Mutrakrcchra Pratishedham Adhyayam*' description of eight types of *Mutrakrcchra* including their *Chikitsa* is available.^[4] Both the *Vagbhatts* have classified the disease of *Mutravahasrotas* according to its *Pravritti* i.e., *Mutrakrcchra* comes under *Mutra Apravrittijanya Vyadhi* while *Prameha* comes under *Mutra Atipravrittijanya Vyadhi*.^[5]

In *Kashyap Samhita*, *Chikitsa Sthana* one chapter named "*Mutrakrcchra Chikitsa*" is separately given.

Bhela Samhita, *Sutrasthana* one chapter is devoted to *Mutrakrcchra Chikitsa* that it is incomplete.^[6]

Madhava Nidana: Mutrakrcchra, Mutraghata and *Ashmari* have been dealt in separate chapters.^[7]

Nidana of Mutrakrcchra

Dosha Prakopa is cause for *Vyadhi*. *Ahara* and *Vihara* play an important role in this. All the factors involved, in provoking the imbalance of *Doshas* come under this heading. The main cause in the vitiation of *Doshas* is *Ahita Sevana* of *Ahara* and *Vihara*.^[8]

Nidanas can be classified as^[9]

- 1) Samanya
- 2) Vishishta

Mutravahasrotodushtikaraka^[10] and *Mutrakrcchrakaraka Nidanas*^[11] have been mentioned by *Acharya Charaka* in detail. *Acharya Sushruta* and *Vagbhata* have not mentioned the aetiology.

Madhava and *Bhavaprakasha* have mentioned similar aetiological factors as mentioned by *Acharya Charaka*.

Acharya Kashyapa has mentioned *Katiskandhatidharnat* as one of the aetiological factor^[12]

Symptoms wise comparison

Vataj Mutrakruchha

Vataj Mutrakruchha	Urethral Stricture
There is severe pain in groin region, bladder and urethra.	Slow urine stream (commonest)
Patient passes scanty urine	Sudden urinary retention
	Painful micturition

Pittaj Mutrakruchha

Pittaj Mutrakruchha	Cystitis
The patient suffers from Burning Micturition, Difficulty in passing urine, Straining while passing the urine, Urgency for urination and blood-tinged urine	Painful urination, frequency, strangury, incomplete emptying with often retention.
Yellowish Discoloration	Occasionally Haematuria
	Burning urine, discolored foul smelling urine
	Fever, chills, rigors, suprapubic pain tenderness and often loin pain.
	Septicaemia can develop in severe cystitis

Kaphaj Mutrakruchha

Kaphaj Mutrakruchha	Nephritis
The Patients develops oedema and experiences a sensation of heaviness in the regions of kidney, bladder and penis.	Pain in the pelvis
Patient passes small or large quantity of cold, whitish, sticky and thick urine	Swelling of the body, commonly in the face, legs and feet
Patient experiences slight pain and sometimes develops goose skin while passing urine	Vomiting
	Cloudy urine
	Blood or pus in urine
	Foamy urine

Sannipatik Mutrakruchha

Sannipatik Mutrakruchha	Urethritis
Patient passes urine of various colours, frequently and with difficulty and pain. He experiences pain, burning sensation or chilly sensation all over body In addition, he becomes drowsy	Dysuria Burning Micturation Haematuria Increased Frequency Peripheral pain Tenderness over the site Suprapubic Pain and Tenderness

Shukraja Mutrakruchha

Shukraja Mutrakruchha	Prostatitis
Testes and Bladder are swollen and the patient experiences pain in the Bladder, Penis, inguinal region, testes. The patient passes urine mixed with semen	Pain, frequency Fever with chills and rigors Retention of Urine. Perineal Heaviness Pain on Defecation Tender prostate per rectal examination

Abhighataj Mutrakruchha

Abhighataj Mutrakruchha	Urethral Injury
Accidental or Surgical injury to the Urinary System gives rise to anuria, oliguria, retention of urine and severe pain	Bloody in external meatus. Failure or Difficulty in passing of urine Extravasation of Urine to Scrotum, perineum, and abdominal wall Shock with Pallor Hypotension

Raktaja Mutrakruchha

Raktaja Mutrakruchha	
Accidental or instrumental injury or ematiation of various tissue with bleeding disorder gives rise to severe pain and blood strained urine, which is passed frequently in small quantities.	

Formation of blood clots in urinary passages leads to distension and heaviness in the bladder which is relieved after passage of blood clots.	
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Ashmari Janya Mutrakruchha

Ashmari Janya Mutrakruchha	Renal Calculi
During urination pain in navi (umbilicus), <i>Basti, Seevani, Medhra</i> <i>Mutra-dhar sang</i> Haematuria Scattering of urinary Cyst Sandy and Turbid Urination Blood in external meatus Failure of difficulty in passing Urine. Extravassation of urine to scrotum, perineum and abdominal wall	Pain (discomfort during jolting, jumping) Pyrexia Haematuria Pyuria Hydronephrosis

Sarkaraja Mutrakruchha

Sarkaraja Mutrakruchha	
<i>Ashmari</i> due to <i>Vata</i> is crushed and becomes sand, when it comes out with urine it is called as <i>Sarkara</i> . <i>Hrit Peeda</i> <i>Kampa</i> (Tremor) Pain in Pelvis <i>Agnidourbalya</i> <i>Murcha</i> Severe Dysuria Haematuria	Urinary Calculi obstruct the urinary passage and lead to maintain in the kidneys, ureter, bladder, penis and perineal raphe The patient massages the penis in an attempt to relieve the pain. The stream of urine is sometimes bifurcated. He passes stools frequently and trembles while passing urine and stool. Injury by stones leads to blood-stained urine

Pathophysiology of Infection by Uropathogens in Lower UTI

Uropathogenic E. Coli organisms attach to receptors on superficial bladder cells with P fimbriae or type 1 pilli. Once contact is established, the bacteria are internalized into the cells, where they can replicate to

high levels. However, attachment or invasion can result in the activation of apoptotic pathways, within the cells, leading to the event of exfoliation and clearance of infected host cells. Interactions between E. Coli and the cells can also result in the induction of inflammatory cytokines, leading to influx of polymorphonuclear leukocytes into the bladder epithelium. E.Coli can escape from lining cells, thereby avoiding clearance by exfoliation and infect surrounding and underlying epithelial cells. Within the bladder epithelium, E.Coli can escape immediate surveillance and persist at subclinical level.

Line of management of Ashmari^[14]

The management of Ashmari has been given due importance by all the three Samhita's viz., Charaka Sushruta & Vagbhata. In Mutrakrcchra, there is Apravritti of Mutra and Pratiloma of Apanavayu. Hence the Chikitsa should be such that it is Mutravirechaniya and pacifies the doshas.

Sushruta has further given elaborate description of management of Ashmari in a separate chapter. The management of Ashmari has been described according to its various stages.

- 1) Nidana Parivarjana
- 2) Snehana
- 3) Swedana
- 4) Basti
- 5) Physical exercise
- 6) Horse riding after taking Madya

Nidan Parivajana: Patient should avoid Kaphavardaka Ahar & Vihar. All etiological factors, which are described.

Snehana & Swedana: These measures promote general well-being by eliminating the accumulated Doshas & purification of channels.

Vasti: Uttarabasti should be given to relieve obstruction to keep equilibrium of Basti Doshas. Dosa's cannot accumulate due to lubrication.

Physical exercise: Charaka & Vagbhata advised horse riding or Journey by fast moving vehicles after taking old wine.

These measures may have been successful in small stone. It is conceivable that violent movement & along with diversified would dislodge the calculus & being small would be passed per urethra.

Samshamana line of management^[15]

Treatment of specific variety of Ashmari is going on in the form of Ghee, Kshara, Yavagoo, Kashaya, Milk etc. these preparations are made by various drugs according to their specific against Vata, Pitta, Kapha.

Text	Vataja	Pittaja	Kaphaja	General treatment
Sushruta	Pashanabeda, Varuna Kulatta Sathavari etc.	Kushadi Gritha & Decoction	Varuna Gana Guggulu	Gokshuradi Churna Veeratharva di Gana Decoction Apamarga, Yavakshara, Punarnava
Astanga Sangraha	-	-	-	Veeratharva di Gana
Bhavapraksha	Eladi Decoction Varuna Veeratharvadi Ghritha	Kushadi Ghritha & Veeratharvadi Decoction	Varunadi Ghritha	Yavakshara, Trinapanchamoola Varuna Taila, Rushadi Taila Gokshuru Ghritha
Astanga Hridaya	-	-	- -	Veeratharva di Gana
Charaka	-	-		Pashanabeda Churna Punarnava, Gokshura Trunapanchamoola
Sharangadhara	-	-	-	Veeratharvadi Gana

Harita	-	-	-	<i>Pasanabedh a Shigru Kashaya Kushadi Kashaya Shunti Etc.</i>
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Surgical management^[16]

In spite of all the medical treatment if patient do not get relieved then surgery is indicated. Besides this some other indications are as follows.

Chronicity of the disease

Stone is bigger in size

In children

Acute retention of urine caused by the stone impacting the urethra.

While describing the indications of surgical treatment of *Ashmari*, *Sushruta* has mentioned that surgical removal may cause serious consequences & even death of the patient. So before performing operation surgeons should explain the situation about the graveness of the disease & permission should be taken from authority. He has further explained that though operative interference may lead to serious consequences even death, but if the patient is not operated will ultimately die; there are chances of survival of patient after operation so patient should be operated.

After taking consent *Sushruta* described operative procedure, which can be divided in to three steps.

Purva Karma (Preoperative procedure)

Pradhana Karma (operative procedure)

Paschat Karma (post operative procedure)

Purva Karma^[17]

First the patient is given *Sneha Dravya* later on his system is cleaned by *Vamana & Virechana* medicated oils are applied over the body & moderate *Swedana* is indicated. Then he is kept on light diet. After the psychological preparation of patient by consoling words & prayers to God etc. then patient was shifted

to Operation Theater where every needful thing are ready.

Position of the patient in the operation room - the patient is placed in the lithotomy position with his arms & legs bent & tied & held in position by attendants over whose lap the patient lies. The buttocks are raised by placing a cotton pillow below the pelvic girdle. For proper illumination patient should be positioned towards sun.

Required medicine & instruments should be collected & placed in operation theatre & utilized at the time of requirement during *Pradhana Karma*.

Pradhana Karma

Mobilization of stone - for mobilization of stone *Sneha Dravya* should be applied over abdomen & pelvis & efforts should be made to mobilize the stone by applying pressure from left side of *Nabhi* to downward with the help of fist.

Fixation of stone - should be fixed near to *Sevani* with help of two fingers which is put inside the rectum preferably by the left hand.

Incision - Incision should be made on left side 1 *Yava* away from *Sevani* the length of the incision should be *Ashmari Pramana*. Incision should be preferably made on left side but for technical convenience incision should be on right side.

Removal of stone - All efforts should be made to remove the stone for which gentle pressure should be applied from rectal side by finger & stone should be held by *Vakra Yantra*.

Precaution: During the fixation of stone patient may go in a stage of shock he may be fixed, he may look like dead person, if this happens then operation should not be performed.

Paschat Karma

After removing the stone, patient should lie down in a boat of warm water by which blood will not get accumulated in *Vasti*. The bladder must be irrigated with by astringent decoction i.e., *Pancha Ksheeri Kashayam*. Then he must be removed from the boat & ghee & honey is applied over wound. Rice & ghee is

given for 3 days orally. Then medicated *Yavagu* with ghee is given to the patient for another 3 days. After this for 10 days he must take *Guda*, rice, milk & for another 10 days slight acidic juice like *Dadima* & juice of meat is given to him. After this light *Swedan* & *Snehana* is given to the patient & wound should be irrigated by *Panchakshiri Kashyam*. A paste of *Lodhra*, *Yastimadhu* is applied over the wound. If there is granules of a *Sharkara* in urethra. It should be removed by giving incision to urethra.

After wound-healing patient should avoid sexual intercourse, riding horse & other heavy exercise at least for one year.

Complication

During operation if the patient shows signs of shock the operation is to be discontinued.

In female, uterus is situated behind the urinary bladder. Surgeon should avoid the injury to *Garbhashaya* otherwise urinary fistula will occur so incision should be given '*Utsangavat*'.

Sushruta mentioned a very important precaution that bladder must be injured only once, counter injury should be avoided otherwise healing will not take place.

Exhaustive exercise & sexual indulgence should be avoided for one year after operation, diet should be light foods. The following things can happen.

Death: By cutting of *Mutravaha Srotas*, *Vasti* & *Guda*

Pain: If *Yoni* & *Sevani* is cut

Impotency: If *Sukravaha Srotas* is cut

Extravasation of urine: If *Mutrapraseka* is cut

Prognosis: *Asmari* is difficult to cure in a patient who regularly passes gravels in urine.

Pathya Ahara

Purana Rakta Shali, *Kshara*, *Yava*, Cow's Milk, Curd and Buttermilk, *Jangala Mamsa*, *Mudga*, *Sarakara*, *Kushmanda Phala*, *Patola*, *Ardraka* (Wild Variety), *Gokshura*, *Kumari*, *Supari*, *Kharjura*, *Narikela*, *Taladruma*, *Talasthimajja*, *Trapusa*, *Sukshma Ela*, Pure River Water.

Pathya Vihara

Abhyanga, *Svedana*, *Avagahana*.

Apathya Ahara

Madyapana, *Tambula*, *Matsya*, *Lavana*, *Ardraka*, *Taila Bhrishta Padartha*, *Pinyaka*, *Hinga*, *Tila*, *Sarshapa*, *Masha*, *Karirphala*, *Vishamashana*, *Virudhashana*, *Vidahi*, *Atitikshna*, *Ruksha* and *Amla Rasa*.

Apathya Vihara

Ativyayama, *Atimaitthuna*, Riding on elephant and horse, *Striprasanga*.

DISCUSSION

Ashmari has been classified according to physical characters and *Doshik* symptomatology.

According to *Sushruta* *Kapha* is responsible for manifestation of *Ashmari* but other *Doshas* like *Vata* and *Pitta* are also essential for further growth of *Ashmari*.

Samprapti of *Ashmari* which is mentioned for bladder calculi, this *Samprapti* we can apply in case of *Mootrashmari* even (renal calculus).

Ashmari being one among *Astamahagada* so it is *Kastasadya* or *Asadya* according to *Sushruta*.

Etiopathogenesis and symptomatology are described according to *Doshas*.

According to *Sushruta* urinary stone is formed in a similar way as muddy precipitation takes place even when clear water is kept in a new pitcher. Another example quoted is that just as air and fire of the lightning in the sky along with water forms hail stone similarly *Pitta* lodged in the bladder in combination with *Vayu* along with consolidation of *Kapha* to form the calculi.

According to modern intrinsic factors like Heredity, age and sex and extrinsic factors like geography, environment, less water intake, Diet, Occupation, etc. are predisposing factors of Calculi. Apart from these anatomical and physiological variations like impaired drainage of urine, congenital anomalies, biochemical

factors like hypercalciuria, renal tubular acidosis, etc. are responsible for formation of *Ashmari*.

CONCLUSION

Medicaments are those which are employed by physicians, with a view to bringing about the equilibrium of *Dhatu*. *Mutrakruccha* is described in all the Ayurvedic classics. But, is not mentioned under *Garbhini* and *Sutika Vyadhis*. The *Linga* of *Mutrakruccha* are also present in *Garbhini* and *Sutika*. The properties *Rasayana*, *Balya*, *Brumhana*, *Snehana*, *Jivaniya* and *Madhura Rasa And Vipaka; Sheeta Virya; Guru, Snigdha Guna* of all the drugs promote *Prakrita Kapha* which is also considered as *Bala*, thus increases its *Samana Guna Oja* and thus *Vyadhikshmatva* of *Garbhini* and *Sutika*. Urinary tract infection refers to both microbial colonization of the urine and tissue invasion of any structure of the urinary tract. Bacteria are most commonly responsible, although yeast, fungi and viruses may produce urinary infection.

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