AN AYURVEDA APPROACH TO RENAL STONE

Verma Astha¹, Mishra Ratnaprava²

¹PhD Scholar, Assi. Prof. Kaychikitsa Dept., Mandsaur Institute of Ayurved Education and Research Mandsaur, Madhya Pradesh, India
²Professor and HOD Kaychikitsa Dept., Mandsaur Institute of Ayurved Education and Research Mandsaur, Madhya Pradesh, India

Email: dr.asthaverma@gmail.com

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ABSTRACT
Renal stone is common clinical problem faced by clinicians. The prevalence mostly seen in the younger population and recurrent rates are very high. India is a developing country and many populations under the poverty line and treatment for renal stone for these people not affordable and in modern medicine surgical intervention is the ultimate options. But after surgery also recurrent rate is high. This condition impacts on the economically active population representing a significant healthcare cost burden, as it is associated with restricted activity and/or hospitalization. In Ayurveda, we can compare this disease with Ashmari which is elaborately described in classics. So, dietary modification, lifestyle changes and proper medicament management are essential for this Ayurveda diseases which are elaborately described in Ayurveda classics. So, nidana parivarjana (etiological factor), sho-dhan chikitsa (purification therapy) and aushadhis (medicament) are described by our acharyas.

Keywords: Ashmari, Ayurveda, Renal stone

INTRODUCTION
Renal stone is a disease of the genitourinary system characterized by the formation of solid piece of mineral salts present in urine. Kidney filters unwanted substances from body fluids, remove them in the form of urine and control chemical levels. When this process is abnormal and there is deposition of crystals like calcium, oxalate, uric acid etc then there is formation of different type, shape and colours of stones. Stones are typically classified by their location and composition. When the stone are in the Kidney and urinary tract it is termed as Nephrolithiasis, stone present in bladder termed as cystolithiasis, stone in ureters it is called as Ureterolithiasis. Mainly composed of calcium salts, uric acid, cystaine struvite, Calcium Oxalate and calcium phosphate are the most common types found in 80% of patients of Renal Stone¹. It has
also applicable synonyms calculus of kidney, renal calculus, Stag horn calculus, and renal stone.

Various risk factors has been identified for stone formation and these includes hot climate, Vitamin A deficiency, excessive administration of Vitamin D, Metabolic disorders, Hyperthyroidism, Gout, Idiopathic Hypercalciurea, Acid urea, Family history of urinary stone, Geographic area, Dietary factors rich with calcium like red meat, fish, cereals and pulses, Fluoride rich water and recurrent urinary tract infection also plays an important role as a risk factors. Renal calculi occur in peoples of all parts of the world with a lower life time risk of 3-15% in the West., 25% in Asia, 20% in India. Renal calculi are quite common and usually affects people who are between 20-60 years of age, they affect male more than female. It is estimate that renal colic affects about 10-20% of male, and 3-5% of female. Out of which 50% may end up with loss of kidney and renal damage. Recurrent stone formation is a common problem with all types of stones.

Sometime kidney stone passing and block the urinary tract and least to reduce to urine flow with symptoms of renal stone includes radiating pain lower back to abdomen, in external genitalia and groin get burning sensation and pain during micturation, blood in urine and increase urge and frequency of urination, fever and chills, irritability, Nausea, Vomiting, urine that smells bad or looks cloudy.

In Ayurveda, this disease can be considered as Ashmari, which is comes under the Mutravaha srotas vyadh and considered one among the Ashtamahagada. Acharya charaka has explained this disease under Trimarmiya chikitsa adhyaya. Acharya Sushrut explains Ashmari roga under nidana sthana, Ashmari under chikitsa sthana and in Mutrakrichra pratishedhatmak Adhyay under Uttartantra. In Ashthangridaya Mutraghat Nidan under nidan sthana and mutraghat chikitsa under chikitsa sthana. In Madhavanidan it is described under Ashmari nidan adhyay.

Classification of Ashmari

Ashmari can be classified under two broad heads as follows:

Doshic varieties
1. Vataja Ashmari
2. Pittaja Ashmari
3. Kaphaja Ashmari
4. Shukrashmari

Etiopathogenesis of Ashmari

Ashmari is one of the few surgical conditions which have been given a very prominent place in Ayurveda. Vagbhata mentioned it as Maharoga. Susruta, the father of surgeon, has described the Ashmari in details about its etiopathogenesis, symptomatology, prognosis, complications, Medical and surgical treatment, etc.

In Madhava Nidana Kapha is described as the basic Dosha for Ashmari. He also says Ashmari gets formed when Vata dries up the semen, urine, Pitta or Kapha, stored in the urinary bladder just as bile gets solidified in the cow and all types of Ashmari is are caused by the combination of all the three Doshas.

According to Susruta, people who do not take proper cleansing procedure (asamshodhana) and are indiscrete regarding their dietary habit (apathy karina) gets their Shlesma Dosha aggravated, then mixed with urine and enters the Vasti (urinary bladder) to produce calculi.

Charaka described the Ashmari in the chapter of Mutrakrichra. He explains excessive physical exercise, strong and irritant medication (tikshna - ausadhhi), riding on fast moving horses or vehicles, drinking of dry wine in excess, ingestion of flesh of wet land, fishes and other food staffs, eating before the digestion of previous meal (adhyasana) are the basic causes of eight varieties of Mutrakrichra and ultimately Ashmari. At the time of treatment Charaka also warned the patient to avoid exercise, ingestion of dried and rough articles, suppression. of natural urges, baked food, excess of wind and sun, eating of food causing vitiation of Vayu (like lotus - rhizome, Jambu, etc.) Charaka, unlike Susruta, emphasised Vayu Doshas a contributory factor.

Kashyapa described the etiology of Mutrakrichra and Ashmari as carrying heavy loads on the loins (kati), shoulders (skandha) by which Pitta is vitiated then in combination with Kapha and Vayu enters the Vasti affecting the same.
Kashyapa emphasised more on Pitta than *Kapha* and *Vata*. In cases of differentiation between *Prameha* and *Mutrakrichra*, Kashyapa mentioned Pitta (vitiating) is main cause of *Mutrakrichra*. He has given also the description of management of *Mutrakrichra* by Pitta Shamaka drugs (e.g., madhura or sweet, ikshu or sugar cane, ghee, etc.) and avoidance of *Pitta* vitiating materials.\(^ {13} \)

**According Susruta Samhita** –

i) *Shleshma* is essential; it is the seat (*adhisthana*) for *Ashmari*.

<table>
<thead>
<tr>
<th>S.NO</th>
<th>PURVARUPA</th>
<th>CH.</th>
<th>SU</th>
<th>A.H.</th>
<th>A.S.</th>
<th>M.N.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Basti pida (pain in urinary bladder)</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>2.</td>
<td>Aruchi (Anorexia)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>3.</td>
<td>Mutrakrichra (dysuria)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Bastimurdhvedana (pain in pelvic)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Mushakvedana (pain in testis)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Shefvedana (pain in penis)</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>7.</td>
<td>Jwara (fever)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>8.</td>
<td>Avasad (lethargy)</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Bastagandhatwa (goat's body like odour)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>10.</td>
<td>Sandramutra (cloudy urine)</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12.</td>
<td>Avil mutra (Turbidity of urine)</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Basti adhman (heaviness in urinary bladder)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

**Rupa:** According to Susruta general symptomatology of *Ashmari* are intense pain in naval region, *Vasti* (urinary bladder), perineal raphe and penis (*medhra*) during micturition, there may be obstruction of urinary flow, urine may come like spray from urethra, sometimes mixed with blood. Urine may also be clear like *Gomeda* gems. At times passing sand like particles (*sikata*), pain during running, jumping, swimming, riding on horses back or on camel and even while walking.\(^ {15} \)

<table>
<thead>
<tr>
<th>S.NO</th>
<th>RUPA</th>
<th>CH.</th>
<th>SU</th>
<th>A.H.</th>
<th>A.S.</th>
<th>M.N.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nabhivedana (Intense pain in umbilical region)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>2.</td>
<td>Sevani vedana (pain in perineal raphe)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
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<tr>
<td>3.</td>
<td>Mehan vedna (pain in penis)</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>4.</td>
<td>Mutradhara sang (slow stream of urine)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Mutravirikira (spray like urine)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Gomedprakasham (urine like Gomeda gems)</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>7.</td>
<td>Avilatwa (Turbidity of urine)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Sasikta (sand like particles)</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Vidirndhara (splitting of urine flow)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Sarudhir Mutra (urine with blood)</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Medhra mrudan (rubbing of penis)</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Mutravrodha (Obstruction in urine flow)</td>
<td>-</td>
<td>-</td>
<td>+</td>
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<td>+</td>
</tr>
</tbody>
</table>
**SPECIFIC RUPEA**

1. **Kaphaja Ashmari** — (swarupa) Shweta, Snigdha, Kukkutand pratikasham, Madhukpushpa varni.
2. **Pittaja Ashmari** — (swarupa) sarakta pitavabhasata, krisha, bhallatakasthi pratima, madhukvarna.
3. **Vataja Ashmari** — (swarupa) shyava, parush, vi-sham, khara, kadamb pushpa kantak saman.
4. **Shukra Ashmari** — piditmatre cha tasminne pradesh pravilayamapadyate.

### Table 1: Classification and characteristics of kidney stones

<table>
<thead>
<tr>
<th>Type</th>
<th>Incidence</th>
<th>Crystal shape</th>
<th>X-ray findings</th>
<th>Urinary risk factors</th>
<th>Clinical risk factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium oxalate hydrate &amp; monohydrate (mulberry stone)</td>
<td>75%</td>
<td>Envelope &amp; dumbell shaped</td>
<td>Radio-opaque, Spherical, brown colour with sharp projection</td>
<td>↑ Urine calcium, oxalate, uric acid, ↓ urine volume citrate</td>
<td>Men in 30-40 yr age group</td>
</tr>
<tr>
<td>Phosphate stone (staghorn calculus)</td>
<td>10-15%</td>
<td>Amorphous</td>
<td>Radiopaque, spherical, smooth with white color. It is either Ca phosphate or Ca, mg, ammonium phosphate.</td>
<td>↑ Urine calcium, urine pH.</td>
<td>Primary hyperparathyroidism, distal RTA, Alkali treatment. Generally, in infected urine.</td>
</tr>
<tr>
<td>Uric acid</td>
<td>10%</td>
<td>Diamond Rhomboid</td>
<td>Radiolucent, smooth, hard, yellowish, staghorn possible</td>
<td>↑ Urine uric acid, ↓ urine pH, urine volume</td>
<td>Gout, Diabetes mellitus, chronic diarrheal disease</td>
</tr>
<tr>
<td>Struvite</td>
<td>10%</td>
<td>Coffine –lid</td>
<td>Radiopaque, staghorns common, Defective absorption of cystine from renal tubules.</td>
<td>↑ urine pH, urease- positive UTI</td>
<td>Neurogenic bladder, other anatomic abnormality</td>
</tr>
<tr>
<td>Cystine</td>
<td>&lt;1%</td>
<td>Hexagonal</td>
<td>Faintly radiopaque, staghorns common</td>
<td>Inherited disorder</td>
<td>-</td>
</tr>
</tbody>
</table>

**Specific Symptoms** which further leads to burning

Characteristics of Ashmari according to its different types are and pain during micturition as follows;

**Kaphaja Ashmari**
- The *Kapha dosha* attends compactness and increases in size and obstructs the urine and produces features like tearing type of pain in bladder, heaviness in the bladder and feeling of cold.
- *Ashmari* appears like hen’s egg, pale white colour, unctous to touch, large in size and like *madhuka* flower.

**Pittaja Ashmari**
- *Kapha dosha* along with *Pitta dosha* attends compactness and obstructs the urine and produces discomfort like burning sensation in the *vasti-medhra* (bladder-penis), feeling of hot air coming out of bladder.
- *Ashmari* appears like red, yellow, dark in colour and appears like seed of *Bhallataka*

**Vataja Ashmari**
- *Vata* and *kapha dosha* after combining obstructs the urine and causes pain as a result person bites his teeth, presses navel, external genitals, anus and shouts due to pain.
- Must pass urine after putting force.
- The *ashmari* formed is *Shyava*, hard, irregular, rough, it contains thorny structures like of *Kadamba Pushpa*.  

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Chikitsa
1. Aushadha chikitsa
2. Basti
3. Kshara Chikitsa
4. Shastra Chikitsa
Also, Nidan Parivarjan is as much important as above chikitsa. As Ashmari is Kapha predominant condition, avoiding kaphavardhak Ahar vihar is necessary.

Aushadha Chikitsa: Early diagnosis and early treatment is necessary because it is difficult to treat. So, Sushruta even mentioned chikitsa during Purvaroopa stage.

Sushruta described Doshanusar Aushadh chikitsa as follows:
Vataj: Pashanbheda, Vasuka, Vashir, Ashmantak, Shatavari, Gokshur, Brihati, Kantakari, Kapotvanka, Khasa, Gunja, shyonak, Varun, Yava, kulaattha, Badar.
Kaphaja ashmari- varunadi gana, guggulu, ela, kushtha, devdaru, haridra, maricha, chitraka etc drugs in form of kshar, peya, kshira, yavagu, kwatha.

2. Basti: Uttarbasti, Asthapan, Anuvasan basti made by decoction of Ksheeri Vriksha, Kakolyadi gana flushes out the stone and collected blood from bladder and gives instant relief.

3. Kshar:
1. Kshara prepared from Varunadi Gana dravyas is useful in Ashmari.
2. Tilakalk, Apamarga, Kadali, Palasha and Yava kshar should use with Avimutra.
3. Patol and Karaveera kshara as above also useful in Ashmari.
4. Shastra karma: Acharya Sushruta described the detailed Shastrakarma of Ashmari Nirharan if above three chikitsa failed to remove Ashmari.

Pathyapathya
Pathya | Apathya
---|---
Diet | Yava, Jeerna Shali, Mudga, Kulaattha, Kushmand, Jangal mansa, cucumber, Shushkann, pishtann, vartak, kaptitha, jambu, Kharjur, Kashay Raspradhan Dravya
Vihar | Langhana, Vaman, Basti, Avagah sweda, Virechana, Ativyayam, Vyavay, mutravegavarodha and Vegerdeerana

Pathyapathya
Pathya | Apathya
---|---
Diet | Yava, Jeerna Shali, Mudga, Kulaattha, Kushmand, Jangal mansa, cucumber, Shushkann, pishtann, vartak, kaptitha, jambu, Kharjur, Kashay Raspradhan Dravya
Vihar | Langhana, Vaman, Basti, Avagah sweda, Virechana, Ativyayam, Vyavay, mutravegavarodha and Vegerdeerana

Calcium oxalate – primary abnormality is increased intestinal absorption of calcium. So, to control this type of stones avoided calcium rich products.

Avoided
1. **High calcium**- Egg, Milk, yoghurt, cheese( dairy products), cabbage, spinach, soybeans, ladyfinger, almonds, oranges, kelp, sesame seeds, celery, broccoli, collards, Turnips, fish, strawberries, chicken, dried figs, tamarind, prunes, apricots, black currants, custard apple, pineapples, kiwi, litchi. **High Oxalate** – Potato, peanuts, chocolate, beets, spinach.

2. **Calcium phosphate** – Avoided
Sodium intake, less animal protein like meat, dairy product, most plant-based protein like nuts, legumes, dried peas, lentils, sunflower seeds.

3. **Uric acid** – Avoided
Meats of liver - kidney, sea food, alcohol, sunflower seeds, chicken, fish, mushrooms, asparagus, spinach, cauliflower, banana, raisins, broccoli, apricot, sprouts, soybean, white beans, peanuts, groundnuts.

DISCUSSION
Vata is in Pakvashaya (large intestine) which is main responsible factor for the elimination and retention of mala, mutra and other toxic particles. When this Vata is aggravated then this Aggravated Vata is responsible for the formation of ashmari. Vitiated Vata dries up...
the Shukra, Mutra, Pitta and Kapha located in the Basti pradeshe and gradually stones are formed. According to Sushruta Mutra enters basti through the Mutravahak nadies, like mutra - Vata, Pitta and Kapha also enters the basti and further with Upsneha nyaya Ashmari is formed. The symptoms of calcium oxalate stone mimic with Vataja Ashmari like amber colour like that of lac or resin, hard to touch, irregular in shape with rough surface, appearance is like kadamba puspa. Uric acid stones, Urates Calculus appear yellowish brown in color comparative with Pittaja Ashmari color changes of cystine stone initially yellow and green on exposure to external atmosphere again compares with basic color representation of Pitta like red or yellow or black in colour, size is like bhallataka seed (approx), sometimes colour is like honey. Phosphate stone impart white color, smooth surface, larger size, lesser pain compared to other types of calculi, correlates with classical features of Kaphaj Ashmari like white, glossy to touch, large, oval in shape (like egg of hen) and colour like the flower of madhuka. So we can considered renal stone as Ashmari mentioned in Ayurveda classics.

CONCLUSION
It is Multidimensional therapy like lifestyle modification through diet; internal medicines and basti therapy are highly effective in the management of renal stone. Acharya Sushruta also indicates that by taking substances which are incompatible to one another as regards their tastes, potencies and digestive transformations, a greedy and intemperate person becomes afflicted with disease and weakness of the sense organs, and ultimately dead. If proper counselling and guidance is provided to kidney stone patients at the right time regarding pathyapathyapaths (dietary management) correlation with Ashmari and its management, it can be helpful in preventing further complications including recurrence of disease.

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