CONSERVATIVE MANAGEMENT OF ASHMARI WITH AYURVEDA: A CASE STUDY

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Abstract

Ashmari is one among the eight most difficult to cure diseases (Ashtamahagada) described in Ayurveda classical texts. The symptomatology of Ashmari resembles the clinical features of Urolithiasis mentioned in the contemporary medical science. Urolithiasis is third most common disease of the urinary tract. Conventional management of Urolithiasis does not have any effect on the pathogenesis of this disease and therefore, recurrence of disease occurs very commonly. Ayurveda has more radical approach and wide range of options in the management of urolithiasis. A 23-year old Indian male student presented with the complaints of pain in right side of abdomen, burning and difficulty in micturition since last 15 days. Per abdomen examination elicited tenderness on right lumbar region of abdomen and around right renal angle. No other abnormality detected during general and systemic examination. Ultrasonography (whole abdomen) revealed multiple right renal calculi (largest being 6.9 mm). On Ayurvedic parlance, the present case was diagnosed as Ashmari based on the signs and symptoms. Patient was prescribed the Ayurvedic medicines, Gokshuradi Guggulu and Varunadi Kashaya on OPD basis. Patient was advised to follow-up initially after 07 days and later after every fortnight. Improvement in clinical features was there within 07 days. Patient showed complete relief in his complaints on third follow-up visit. Repeat Ultrasonography scan did not revealed any renal calculus. Clinically also, Gokshuradi guggulu and Varunadi Kashaya has provided complete relief in pain, burning micturition and dysuria. It can be concluded that Gokshuradi guggulu and Varunadi Kashayamay lead to disintegration and expulsion of calculi and thus provide relief in signs and symptoms of Ashmari. This case illustrates the effective conservative management of Ashmari with Ayurvedic medicines with no adverse events and no episode of recurrence even after one year.

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Introduction:-
Ashmari is one of the prevalent ailments of the mutravahasrotas (urinary system) alongside Mutrakrichra and Prameha. In Ayurveda, Acharya Susruta described eight most difficult to cure diseases (Ashtamahagada) and Ashmari is one among them owing to its potentiality to disturb the structure and functions of urinary system.¹ The symptomatology of Ashmari explained in Ayurvedic texts resembles the clinical features of Urolithiasis mentioned in the contemporary medical science. Urolithiasis is third most common disease of the urinary tract after urinary tract infections and prostatic disorders.² Factors like irregular food habits, sedentary life style, occupation, hydration status, geography, nutritional deficiency, metabolic disorders etc. may be responsible for urolithiasis, however the causes and mechanism of their formation is still not clearly understood.³ Urolithiasis is a complex process as a consequence of an imbalance between promoters and inhibitors of urinary crystallization in the kidneys.⁴ Around 97% of the calculi are found in the kidneys and ureters while the other 3% in the urinary bladder and urethra.⁵ Prevalence and incidence of urolithiasis has been increasing in present time; may be due to rapidly changing diet & lifestyle or better diagnostic tools for more accurate diagnosis. It occur in approximately 12% of the global population and its re-occurrence rate in males is 70-81% and 47-60% in females.⁶ In the current scenario, there are many treatment options available for the management of urolithiasis but the conventional management is quite expensive and the recurrence occurs commonly as it does not have any effect on the pathogenesis of this disease. It has the tendency to recur even after surgery. So, it is essential to find out an effective, easily available, acceptable and inexpensive treatment for urolithiasis. Ayuveda has more radical approach and wide range of options in the management of Ashmari. Ayurvedic drugs have potential to manage Ashmari (Urolithiasis) effectively due to their properties like ashmari-bhedana (lithotriptic), mutrala (diuretic), vednasthapana (analgesic), shothahara (anti-inflammatory), basti-shodhana (improve kidney functions), deepana-pachana (correct digestion and metabolism) and by maintaining urine pH. Acharya Susruta has described medical treatment for facilitating the disintegration of the Ashmari with ghrita (medicated ghee), kshara (medicated alkali preparation), kashaya (decoction), ksheera (medicated milk), basti (medicated enema) etc. before opting for surgical intervention.⁷ A recent onset of Ashmarican be managed with oral medicines whereas large size and chronic calculi requires surgical treatment.⁸

Case Report:
A 23-year old Indian male student presented in the OPD of Regional Ayurveda Research Institute, Ranikhet in August 2018 with the complaints of pain in right side of abdomen, burning sensation and difficulty in micturition since last 15 days. Patient was asymptomatic before initiation of these complaints. He consulted the nearby Govt. Hospital where the doctor prescribed the Ultrasonography (whole abdomen) for the complaints in which multiple renal calculi were shown. He was put on conservative medical management by the Govt. hospital consultant for a week. But, the patient did not get any relief in his complaints even after one week. Followed by this, patient visited the OPD of Regional Ayurveda Research Institute (RARI), Ranikhet for the treatment. Patient had no history of Diabetes mellitus, Gout, Hyperparathyroidism or any other metabolic ailments.

Per abdomen examination elicited tenderness on right lumbar region of abdomen and around right renal angle. No other abnormality detected during general and systemic examination. His vitals were within the normal limits. Multiple renal calculi (largest being 6.9 mm) seen in right kidney in Ultrasonography report (Table 1 & Image 1). Calcium oxalate crystals were found in urine examination report. All other urine examination and hemogram reports were normal. On Ayurvedic parlance, the present case was diagnosed as Ashmaribased on the signs and symptoms described in classical texts.

Therapeutic Intervention:
Patient was prescribed the following Ayurvedic medicines on OPD basis:
1. Gokshuradiguggulu 500 mg three times a day with lukewarm water and
2. VarunadiKashaya 40 ml twice a day; both the medicines to be taken one hour after meals.

The formulations administered were dispensed from the OPD of Regional Ayurveda Research Institute, Ranikhet and procured from Indian Medicine Pharmaceutical Corporation Ltd., Mohan, Almora, Uttarakhand, India. Ingredients of these two formulations have been described at Table 2. Diet and lifestyle restrictions were also advised to the patient. Patient was advised to drink plenty of water, take less quantity of animal proteins like meat, egg, chicken, fish, dairy products, etc., oxalate-rich foods like spinach, beetroot, tomatoes, lady finger, apple juice, grapefruit, chocolate, cola drinks, etc., and avoid calcium supplements.
Follow-Up And Outcome:
Patient was advised to follow-up initially after 7 days and later after every fortnight. Burning micturition was relieved within 07 days. However, mild intensity pain in right side of abdomen was there on second follow-up visit (after 21 days of initiation of treatment). Pain was completely relieved on third follow-up visit (after 45 days of initiation of treatment) and no other complaints were told by the patient. Patient was advised to repeat Ultrasonography (whole abdomen) scan after fourth follow-up visit (one month after the 3rd follow-up visit); but the patient did not have the Ultrasonography scan as per the advice due to his busy schedule and continued the same treatment for one more month. Repeat Ultrasonography scan was done on 8th December, 2018 (Table 1 & Image 2) and did not revealed any renal calculus. His urine examination and Hemogram reports were within normal limits. Clinically also, he has complete relief in pain abdomen, burning micturition and dysuria. Patient was advised to strictly continue following diet and lifestyle restrictions to prevent re-occurrence of calculus and visit the OPD of the institute if any complaint recurs again. No adverse events occurred during the course of treatment and even after stopping the treatment. Also, no episode of recurrence occurs even after one year. Details of follow-up have been given in Table 3.

Table 1:- Ultrasonography, Hemogram and Urine Examination Report.

<table>
<thead>
<tr>
<th></th>
<th>6/8/2018</th>
<th>8/12/2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ultrasonography (Whole Abdomen)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple right Renal calculi</td>
<td></td>
<td>No calculi seen</td>
</tr>
<tr>
<td>largest being 6.9 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hemogram</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemoglobin (in gm%)</td>
<td>13.8</td>
<td>14.1</td>
</tr>
<tr>
<td>T.L.C. (per mm³)</td>
<td>7900</td>
<td>7600</td>
</tr>
<tr>
<td>D.L.C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutrophils – 65</td>
<td></td>
<td>Neutrophils – 62</td>
</tr>
<tr>
<td>Lymphocytes – 30</td>
<td></td>
<td>Lymphocytes – 32</td>
</tr>
<tr>
<td>Eosinophils – 3</td>
<td></td>
<td>Eosinophils – 5</td>
</tr>
<tr>
<td>Monocytes – 2</td>
<td></td>
<td>Monocytes – 1</td>
</tr>
<tr>
<td>Basophils - 0</td>
<td></td>
<td>Basophils - 0</td>
</tr>
<tr>
<td>E.S.R. (mm/1sthr)</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td><strong>Urine (Routine &amp; Microscopic) Examination</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Sugar</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Ketone bodies</td>
<td>Absent</td>
<td>Absent</td>
</tr>
<tr>
<td>Pus cells</td>
<td>2-3/hpf</td>
<td>Nil</td>
</tr>
<tr>
<td>R.B.C.</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Epithelial cells</td>
<td>1-2/hpf</td>
<td>1-2/hpf</td>
</tr>
<tr>
<td>Crystals</td>
<td>Calcium oxalate (+)</td>
<td>Nil</td>
</tr>
<tr>
<td>Casts</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Bacteria</td>
<td>Nil</td>
<td>Nil</td>
</tr>
</tbody>
</table>
Image 1:- Ultrasonography report before treatment.

Table 2:- Composition of Prescribed formulations.

<table>
<thead>
<tr>
<th>Medicines</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>GokshuradiGuggulu</td>
<td>Gokshur (<em>Tribulusterrestris</em>)</td>
</tr>
<tr>
<td></td>
<td>Guggulu(<em>Commiphoramukul</em>)</td>
</tr>
<tr>
<td></td>
<td>Shunthi (<em>Zingiberofficinale</em>)</td>
</tr>
<tr>
<td></td>
<td>Marich (<em>Piper nigrum</em>)</td>
</tr>
<tr>
<td></td>
<td>Pippali(<em>Piper longum</em>)</td>
</tr>
<tr>
<td></td>
<td>Haritaki (<em>Terminaliachebula</em>)</td>
</tr>
<tr>
<td></td>
<td>Vibhitak (<em>Terminaliabellerica</em>)</td>
</tr>
<tr>
<td></td>
<td>Amalaki (<em>Phyllanthusemblica</em>)</td>
</tr>
<tr>
<td></td>
<td>Musta (<em>Cyperusrotundus</em>)</td>
</tr>
<tr>
<td>VarunadiKwatha</td>
<td>Varuna (<em>Crataevanarvala</em>)</td>
</tr>
<tr>
<td></td>
<td>Pashanbhed (<em>Berginialigulata</em>)</td>
</tr>
<tr>
<td></td>
<td>Shunthi(<em>Zingiberofficinale</em>)</td>
</tr>
<tr>
<td></td>
<td>Gokshur (<em>Tribulusterrestris</em>)</td>
</tr>
</tbody>
</table>

Table 3:- Timeline of Events.

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th August 2018</td>
<td>Ultrasonography (whole abdomen) revealed multiple right renal calculi</td>
</tr>
</tbody>
</table>
16th August 2018  
First visit to OPD of RARI, Ranikhet and diagnosed as *Ashmari*
Prescribed Ayurvedic medicines, *Gokshuradigalgulu* and *VarunadiKashaya* on OPD basis along with diet and lifestyle modifications

24th August 2018  
1st Follow-up visit
Burning micturition was relieved but the pain in right side of abdomen was not completely relieved
Continued with the same oral medicines

17th September 2018  
2nd Follow-up visit
Pain in right side of abdomen got mild in intensity
Continued with the same oral medicines

10th October 2018  
3rd Follow-up visit
Pain in right side of abdomen was completely relieved with no other complaints
Continued with the same oral medicines

12th November 2018  
4th Follow-up visit
No Fresh complaints
Advised to repeat Ultrasonography (whole abdomen) scan

26th November 2018  
5th Follow-up visit
No Fresh complaints
Patient did not have the Ultrasonography scan as per the advice due to his busy schedule

8th December 2018  
Ultrasoundography scan did not revealed any renal calculus

10th December 2018  
6th Follow-up visit
No Fresh complaints
Advised to continue following diet and lifestyle restrictions to prevent re-occurrence and visit the OPD of the institute if any complaint recurs again.

**Discussion:**
AcharyaSusruta considered *Ashmari* as a grave disease and fatal as death itself.8 As per Ayurveda, the root cause of *Ashmari* is aggregation of *Kaphapradhanadosha* in *Mutravahasrotas* due to *Agnimandya* and *Ama* formation.9 The process of *Ashmari* formation takes place by the stagnation and super saturation of the urine and by crystallization of the crystalloids in the urine.10 The mechanism of renal calculus formation as per modern medical science is a complex process which results from various complex processes including supersaturation, nucleation, growth, aggregation, and retention of urinary stone constituents within tubular cells.5 Despite wide range of conventional medicine intervention options, 50% of patients suffer at least one recurrence, and 10-20% experience three or more further episodes of recurrence.11,12 If left untreated or poorly treated, urolithiasis could result in urinary tract infection, urinary obstruction, chronic kidney diseases, end-stage renal failure and hypertension.13,14,15

Ayurvedic drug management to disintegrate the pathogenesis of *Ashmari* include the drugs with following properties:

**Ashmari-bhedana:**
Disintegration, dissolution, expulsion, and to some extent prevention of urolithiasis like *Gokshura* (*Tribulusterrestris* Linn.), *Varuna*(*Crataevanurvala* Buch-Ham.), *Pashanbhedha* (*Bergeniaciliata* Sternb.), *Kulatha* (*Dolichosbiflorus* Linn.), *Punarnava* (*Boerhaviadiffusa* Linn.) etc.16-22

**Mutrala:**
Drugs which increase the production of urine and thus help in the expulsion of the urolithiasis like *Gokshura*, *Punarnava*, *Shvetaparpati*, *Trinapanchamula* etc.23-26

**Deepana-Pachana:**
Drugs to correct abnormalities in the digestion and metabolism (as the intermediary metabolites (*ama*) while being excreted through the urinary tract could precipitate and give rise to urolithiasis) like *Trikatu* [Combination of *Shunthi* (*Zingiberofficinale*), *Pippali* (*Piper longum*), *Maricha* (*Piper nigrum*)], *Triphala* [Combination of *Haritaki* (*Terminaliachebula*), *Vibhitak* (*Terminaliabellerica*), *Amalaki* (*Phyllanthusemblica*)], *Musta* (*Cyperusrotundus*) etc.

**Urine alkali**zer drugs like *Yavakshara* (ash of *Hordeumvulgare*), *Gokshura*, *Shveta parpati*.25,27
Vednasthapana & Shothahara:
Anti-inflammatory and analgesic drugs like Guggulu (Commiphoramukul Hook. Ex Stocks), Gokshura, Punarnava etc. 28-30

The constituents of both the prescribed medicines, Gokshuradiguggulu and VarunadiKashayahave ashamri-bhedana (lithotriptic), mutrala (diuretic), vednasthapana (analgesic), shothahara (anti-inflammatory), basti-shodhana (improve kidney functions) and deepana-pachana (correct digestion and metabolism) properties as mentioned above. By virtue of these medicinal properties, both the administered drugs have effectively disintegrated the pathogenesis of Ashmari and lead to expulsion of the Ashmari from the urinary tract in the present case.

The major limitation in this study is that it is a single patient study. However, based on the clinical outcome of this case study, a well-designed study for managing Ashmari with conservative Ayurvedic management can be developed with statistically significant sample size.

Conclusion:-
Gokshuradiguggulu and VarunadiKashaya effectively disintegrated the pathogenesis of Ashmari, provided complete relief in pain, burning micturition, dysuria and expulsion of Ashmari from the urinary tract in the present case. This case illustrates the effective conservative management of Ashmari with Ayurvedic medicines with no adverse events and no episode of recurrence even after one year.

Clinical Significance:-
As both the drugs are effective, easily available and inexpensive, they can be used in the management of Ashmari (Urolithiasis) in the initial stage when there are mild symptoms, small size of calculus with no high grade obstruction in the urinary tract.

Informed Consent:-
Informed written consent for reporting this case study was obtained from the patient.

Acknowledgments:-
Authors are thankful to Prof. (Vd.) K. S. Dhiman, Director General, CCRAS, Ministry of AYUSH, Govt. of India and Dr. N Srikanth, Deputy Director General, CCRAS, Ministry of AYUSH, Govt. of India for their constant support and valuable guidance.

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