

A Case Study on Efficacy of Ayurvedic Medicines for Expulsion of Renal Stones

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ABSTRACT

Renal stone disease is a prevalent health concern today. Patients suffering from renal calculi often hesitate to undergo surgery unless absolutely necessary, seeking non-invasive medical management through Allopathic, Homeopathic, or Ayurvedic systems. Lithotripsy is a common surgical intervention for recurrent kidney stones. In Ayurveda, renal stones are described as *Mutrashmari*, categorized under *Ashtamahagada*, and are considered a *Kaphapradhan Tridoshaja Vyadhi*.

This case study presents a 42-year-old female patient experiencing left-sided abdominal pain radiating to her back, along with burning and obstructed micturition. Advised to undergo lithotripsy at a private hospital, she opted against the invasive procedure and sought Ayurvedic treatment instead. The successful management and expulsion of her renal stone through Ayurvedic medicines underline their efficacy as a non-invasive alternative for treating renal calculi.

INTRODUCTION

Renal stone disease is one of the most common health conditions in our country, predominantly affecting males more than females and showing a recurrent nature. Key contributing factors include dehydration, hot and humid climates, high dietary salt intake, and excessive consumption of medications like calcium and vitamin D. The most common types of renal stones are composed of calcium oxalates, uric acid, struvite, and cysteine.

In Ayurveda, renal stones are correlated with *Ashmari*. The term *Ashmari* is derived from two words: *Ashma*, meaning "stone or gravel," and *Ari*, meaning "enemy." *Ashmari* is characterized by the formation of stones causing severe pain akin to that inflicted by an enemy. *Ashmari* is classified as one of the *Ashtamahagada* (eight grave diseases) by Sushruta due to its capacity to disrupt the urinary system significantly.

Ayurvedic texts extensively discuss the concept, classification, symptomatology, etiology, pathology, complications, and management of *Ashmari*. Ayurvedic formulations for managing *Mutrashmari* (renal stones) are cost-effective, free from major complications, and provide promising results. Management strategies include both medical and surgical approaches as described in Ayurveda.

Lifestyle modifications, including increased fluid consumption and dietary adjustments, play a pivotal role in preventing kidney stone recurrence. Fluid intake should primarily consist of water, as even a slight reduction in urinary oxalate can significantly decrease calcium oxalate stone formation. Foods rich in oxalate should be avoided to minimize recurrence risk.

In this context, Ayurvedic interventions such as *Gokshuradi Guggulu*, *Varunadi Kashaya*, and a combination of Ayurvedic syrup formulations with *Trivikram Rasa* have shown good results. These formulations possess anti-inflammatory, diuretic, antibacterial, and lithotriptic properties that help reduce pain intensity, alleviate dysuria, and ease burning micturition, providing effective relief for patients with renal stones.

CASE STUDY

A 42 yrs. old female patient came in OPD with complaint of pain in left side of abdomen radiating to back, burning and obstructed micturition.

History of present illness

According to the patient, she was quite asymptomatic 3 days back. Then she suddenly developed pain in left side of lower abdomen which was associated with obstructed and burning micturition.

On enquiry, patient told that pain was acute in onset, continuous and pricking in nature radiating to back on same side. Pain got aggravated even on a small movement and there was no specific relieving factor. She also complained of burning and obstructed micturition. There was no association of nausea and vomiting. She gave no history of fever, loose stools, hematuria, hematemesis and malena.

For these complaints she took opinion from modern medicine and was diagnosed as having kidney stone. For that analgesics were given for symptomatic relief and advised for lithotripsy which was denied by the patient. With these complaints, she came to R.G.G.P.G Ayurvedic college and hospital Paprola.

Past History

There was no history of Hypertension, Diabetic Mellitus, IHD, TB, BT and any surgical intervention.

General Examination

General Condition – Stable

PR – 76/min

BP- 110/78 mm of Hg

SPO₂ – 98% at room air

RR- 20/min

Pallor- Not present

Icterus- Not present

Systemic Examination

Respiratory System – NAD

CVS – NAD

CNS- NAD

GIT – No organ palpable

USG Report on 07/11/2021

Bilateral renal calculi with left ureteric calculus with mild hydronephrosis

Right kidney- Showing Presence of multiple calculi-5mm in upper calyx, 3mm in middle calyx and 4.2, 4.4 mm near lower calyx

Left kidney- Shows presence of mild hydronephrosis with a calculus of size 9.4 mm in lower 1/3rd of ureter and also contains 2 calculi of size 4.9 mm near middle calyx and 5.5 mm near lower calyx.

Materials and methods

Patient treatment plan was prescribed (table 1)

Sr. No	Intervention	Dose	Time	Anupana	Duration
1	<i>Gokshuradi Guggula</i>	250mg BD	After meal	Water	One month
2	<i>Varunadi Kashaya</i>	40 ml BD	After meal	Water	One month
3	<i>Trivikram Rasa+</i>	125mg B.D	After meal	Water	One month
4	Syp. Calcyl	10 ml TID	After meal	Water	One month

The detailed properties of the drugs used are as follows

- **Varunadi Kashaya:**
- Composition: *Varuna*, *Gokshura*, *Shunthi*, and *Yavakshara*.
- Properties: *Chedana* (splitting), *Bhedana* (breaking), *Lekhana* (scraping), *Tridoshaghana* (balancing three doshas), *Mutrala* (diuretic), and *Krimighana* (antimicrobial).
- *Kapha-Vataghana* properties help break the pathogenesis of *Ashmari* and facilitate stone expulsion.
- **Gokshuradi Guggulu:**
- Composition: *Gokshura*, *Guggulu*, *Triphala*, *Trikatu*, and *Musta*.
- Properties: *Gokshura* is *Ashmarighna* (lithotriptic) and *Mutrala* (diuretic). *Guggulu* is *Vatashamaka* and promotes stone fragmentation (*Ashmaribhedana*). Other ingredients provide antiseptic, carminative, and antispasmodic effects.
- **Trivikram Rasa:**
- Composition: *Tamra Bhasma* (copper calx), *Aja Ksheera* (goat milk), *Parada* (purified mercury), *Shuddha Gandhaka* (purified sulfur), and *Nirgundi*.
- Properties: Diuretic, antibacterial, and lithotriptic effects.
- **Syrup Calcyl:**
- Supports stone disintegration and enhances urinary flow.

Assessment of patient

Assessment of overall therapy was based on improvement in subjective and objective parameters.

Objective parameter : USG of whole abdomen especially KUB region was done before and after the intervention.

Subjective parameter : Assessment was done before and after the intervention based on grading system of symptoms as follows :

- Complete remission : 100% relief in chief complaints and absence of renal calculi in USG of KUB region.
- Marked improvement : 75- 100% relief in chief complaints and decrease in size of renal calculi
- Moderate improvement : 50-75% relief in chief complaints and decrease in size of renal calculi
- Mild improvement : 25- 50% relief in chief complaints and decrease in size of renal calculi
- No improvement : < 25% relief in chief complaints with no change in size of renal calculi

RESULTS

Subjective parameters:

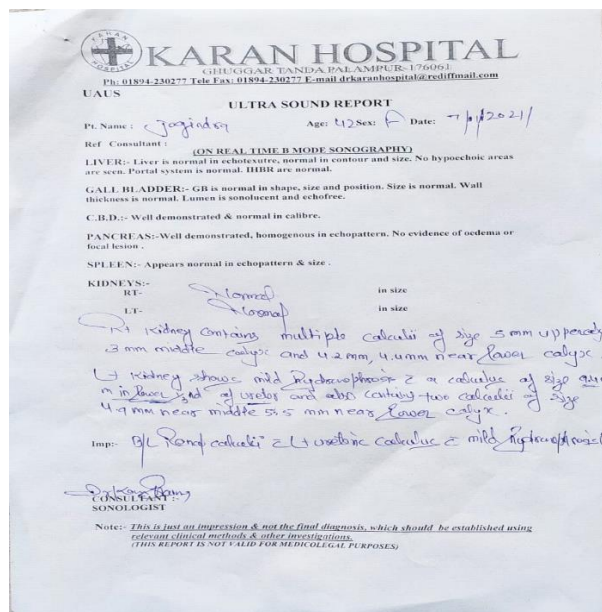
Sr. No	Symptoms	Before treatment	After 15 days	After month
1	Abdominal pain	++++	++	-
2	Burning micturition	+++	++	-
3	Obstructed micturition	++	+	-
4	Renal tenderness	++++	++	-

Objective parameters :

Investigations

Date	07/11/2021	29/11/2021
USG Abdomen	Right kidney contains multiple calculi of size 5mm upper calyx, 3mm middle calyx, 4.2, 4.4 near lower calyx Left kidney shows mild hydronephrosis with 9.4mm calculi in ureter and 4.9mm near middle, 5.5 mm near lower calyx	Right kidney contains calculi 5mm uppercalyx, 4mm mid calyx and 3mm, 4mm, 6mm at lower calyx. Left kidney shows no calculi with no hydronephrosis.
Urine routine and microscopy	Pus cells – 4-5/hpf Epithelial cells- 1-2/hpf	Pus cells- 2-3/hpf Epithelial cells- nil/hpf

Report of USG Whole Abdomen before the treatment



Report of USG Whole Abdomen after treatment

Sushil Diagnostic Centre

PATIENT NAME	:	JOCINDRA DEVI
AGE/SEX	:	42 YRS/F
DATE	:	29/11/2021

ULTRASOUND KUB

RIGHT KIDNEY:- Right kidney measures 9.0x4.5 cm in size. Right kidney is normal in size, outline, position and echo texture. Parenchymal thickness is maintained. CMD well maintained. It shows p/o calculi measuring 5mm at upper pole calyx and 4mm at mid pole calyx and 3mm, 4mm and 6mm at lower pole calyx. No hydronephrosis is seen.

LEFT KIDNEY :- Left kidney measures 8.7x3.5 cm in size. Left kidney is normal in size, outline, position and echo texture. Parenchymal thickness is maintained. CMD well maintained. No calculus visualized. No hydronephrosis is seen.

URINARY BLADDER:- Urinary Bladder is suboptimally distended, normal in wall thickness and lumen is echo free. No e/o focal wall thickening/mural calcification is seen. No calculus /mass lesion seen.

IMPRESSION: -
-Right renal calculi

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Note:- This is just an impression and not the final diagnosis, which should be established using relevant clinical methods and other investigations.

(THIS REPORT IS NOT VALID FOR MLC)

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Picture of the expelled stone



DISCUSSION

Renal stone disease ranks as the third most common condition of the urinary tract, following urinary tract infections (UTI) and benign prostatic hyperplasia (BPH). It predominantly affects individuals

during their most productive years of life, causing pain, loss of working time, significant medical expenses, hospitalization, and, in severe cases, renal failure.

If the ureteric calculus remains untreated there are chances of complications like sepsis, trauma, obstruction in urine flow and intense pain due to obstruction by the stone of large size. This case was treated for one month based on the generally agreed concept that the ureteric stones less than 10mm in size can be passed by using Medical Expulsive therapy in the absence of any complication like sepsis or the patient with solitary kidney. The stones that are going to pass will do so within 4- 6 weeks. As per a study the chances of passing out the stone of size 9 mm are only 3% ⁹, and it will take more than 23 days.¹⁰

The description of *Ashmari* (renal stones) is a notable contribution of *Acharya Sushruta*, who classified it as one of the *Ashtamahagada* (eight grave diseases) in his classical text (*Su.Su. 33/4*). While the exact cause of the disease remains uncertain in modern medicine, Ayurveda attributes the formation of *Mutrashmari* primarily to an aggravated *Kapha Dosha*. Increased *Kapha* mixes with *Mutra* (urine) and accumulates in the urinary system (*basti*, referring to the kidneys, ureters, and bladder), obstructing the urinary tract and leading to stone formation.

In modern urology, the mechanism of stone formation remains unclear; however, factors such as age, sex, irregular dietary habits, metabolic disorders, sedentary lifestyles, occupational hazards, hydration status, and nutritional deficiencies are recognized as potential contributors.

In the present case study the 42-year-old female who presented with pain, burning micturition, and obstructed urination and her initial abdominal ultrasound (USG) revealed:

- **Right kidney:** Multiple calculi measuring 5 mm (upper calyx), 3 mm (middle calyx), and 4.2 mm & 4.4 mm (near the lower calyx).
- **Left kidney:** A 9.4 mm calculus in the ureter, with two calculi of sizes 4.9 mm (middle calyx) and 5.5 mm (lower calyx), accompanied by mild hydronephrosis.

The patient was informed about the disease prognosis, the possible complications of stuck stone stricture/injury to urethra and consent was obtained for Ayurvedic treatment. A combination of Ayurvedic formulations, including *Varunadi Kashaya*, *Gokshuradi Guggulu*, *Trivikram Rasa*, and *Syrup Calcyl*, was administered. The goal was to improve stone expulsion, alleviate pain, and relieve urinary symptoms.

After one month of intervention the USG was repeated and it showed no evidence of left renal or ureteric calculi, with the hydronephrosis resolved. The right kidney revealed calculi reduced to 5 mm (upper calyx), 4 mm (mid-pole calyx), and 3 mm, 4 mm, and 6 mm (near the lower pole calyx). The patient reported significant improvement in pain, burning micturition, and obstructed urination.

The treatment consisted of a combination therapy having herbs and minerals possessing *Chedana* (splitting), *Bhedana* (breaking), *Lekhana* (scraping), *mutrala* (Diuretic) and *krimighana* (Anti microbial), *vatashamaka*, *ashmaribhedana* anti spasmotic, anti inflammatory properties. These properties lead to reduction in pain, burning sensation, obstruction in urine flow and cuses stone to break/reduce in size and ultimately its expulsion.

Conclusion

This case demonstrates the effectiveness of Ayurvedic formulations in managing and expelling renal calculi. The intervention not only reduced the size and number of stones but also alleviated associated symptoms, providing a holistic and cost-effective alternative to invasive procedures. There is also need

of doing a proper randomized controlled trials on this regimen so as to assess the efficacy of this treatment regimen and also its effect on various types of renal calculi.

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