

## Scope for management of big ureteric stones using classical Ayurveda medicines - A Single Case Study

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### Abstract:

Big Ureteric calculi presenting with acute renal colic have always been a condition to be managed by newer endoscopic techniques like Ureteroscopy (URS) and Shock Wave Lithotripsy (SWL). Though open surgeries have been replaced by these newer sophisticated techniques, yet their affordability and future complications are a matter of concern. Complications of anaesthesia and the procedure drive the patients to subsequent OPDs. In patients with normal kidney functioning, big ureteric calculi could be managed medically. This is the case of a 40- year- old lady diagnosed with a case of two calculi in right kidney - a lower pole tiny calculus (2.2mm) and a mid-ureteric calculus (13mm) in right side causing moderate hydronephrosis with severe lower abdominal and flank pain. After conservative management with *Tila-Dhatrishara* and *Gokshurakashaya* for 06 weeks, her symptoms vanished, lower pole calculus expelled out, ureteric calculus size reduced considerably by 4mm and the degree of hydronephrosis reduced from moderate to mild.

**Key words:** Gokshura kashaya, Tila-Dhatri ksara, Ureteric calculus.

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**Introduction:**

Kidney stone disease is a major cause of morbidity since time immemorial. The incidence of the disease has been recorded in the history dating back to 1800BC. Since then, the prevalence and incidence of the disease has been markedly changed owing to the changing lifestyle, diet pattern, global warming and invent of more sensitive imaging. Among them, the Ureteric stones demands emergency management as stones impacted within ureter cause abrupt, severe, colicky pain in flanks and abdomen with radiation to the testicles or the vulvar region.

As per European Association of Urology (EAU), proximal ureteral stones > 10mm are to be actively removed by Uteroscopy (URS) or Shock Wave Lithotripsy (SWL).<sup>[1]</sup> Medical management is not at all a trend for ureteric stones nowadays. The Endourologic techniques like Uteroscopy (URS), Shock Wave Lithotripsy (SWL), Percutaneous Nephrolithotomy (PCNL) and Retrograde Intrarenal Surgery (RIRS) have revolutionized the whole treatment idea of stones but unfortunately, they pose a financial burden to the patients and also are not at all risk free. The risks being UTIs, injury to urethra-bladder or ureters, post-surgical stricture formation, complications from anaesthesia and so on.<sup>[2]</sup> Conservative management is always an attractive alternative to invasive procedures for many patients unless and until their kidney functioning is not compromised.

In *Ayurveda* *Susrutha Acharya* has described the various types of *Ashmari* and its management. Among them *ksharaprayoga* is a unique one as *kshara* is an *anusastra* performing the *sastrakarmas* like *chedana* (excising), *bhedana* (incising) and *lekhana* (scraping).<sup>[3]</sup> Also it has the property of *vishesakriyaavacharana* that makes its use internally.<sup>[4]</sup> These properties make its use worth for *ashmari nashana*.<sup>[5]</sup>

This is the case of a 40 -year- old lady diagnosed as a case of right mid ureteric

calculus with moderate hydroureteronephrosis. After administration of *Tila-Dhatri paneeyakshara* along with *Gokshurakashaya* for 06 weeks, pain ceased and there was reduction in size of stone.

**Case History:**

A 40-year-old female (house wife) presented to the OPD of *Shalyatantra* at Sir Sunderlal Hospital BHU with severe pain in right flank and right lower abdomen radiating anteriorly and to the back. The patient described the pain as sharp, colicky with spasms. She was in an agony and the pain aggravated in movements and on lying down. Assessing with Wong Baker Faces Pain Scale,<sup>[6]</sup> the intensity of pain when the patient was brought to hospital gave a 10/10 reading.

As per the patient, the pain started one day before while doing household works. The pain was devastating and she was taken to a nearby clinic where she got I/V Drotaverine and pain was relieved. Later at night pain started again along with chills, sweating and vomiting. Then she took a painkiller and got slight relief. Also according to patient, the urine flow was decreased and it showed blood stains. The patient had no known other medical conditions and was on no medications. She had no family history of kidney stones or gall stones.

**Physical Examinations:**

The BMI of the patient was 24.5 which showed a moderate built. Her BP was 150/90 mmHg, PR – 86 bpm, RR – 24 breaths /min and body temperature-37 degree celsius. Her abdomen was soft with diffuse tenderness on lower right quadrant. On palpation, there was mild CVA tenderness on right side.

There was a mild leucocytosis of 13,000/dl. Urine analysis showed urine pH of 4.9, elevated specific gravity, slight RBCs, pus cells and crystalluria. Blood urea and serum creatinine were in normal limits.

### Diagnostic Imaging:

An USG was taken which revealed single tiny calculi of 4mm with mild hydronephrotic changes in right kidney. As this was not matching with the clinical presentation of the patient, NCCT KUB was performed. It revealed a large Hyperdense calculus of diameter 13mm noted in distal ureter at level of lower endplate of L5 vertebra (Fig-1) with resultant moderate dilatation of Pelviccalyceal system & Ureter. Also a tiny concretion of diameter 2.2mm was noted in lower pole calyx (Fig- 2). Thus, it was confirmed as a case of right mid ureteric calculus causing moderate upstream Hydroureteronephrosis along with tiny renal concretion.

### Treatment given:

The patient was referred to Urology OPD as the topography and size of the calculus demanded surgical intervention like Uteroscopy (URS). Since the patient was not willing for an invasive procedure, conservative treatment was planned with the consent of the patient.

She was given *Tila- Dhatri Paneeya kshara* 500mg along with *Gokshura kashaya* 48ml twice daily after food. Dietary modifications for the disease were well explained. Salads made of cucumbers, carrots and adequate intake of water was advised. Over consumption of proteins, dark green leafy vegetables, spinach, tomatoes, beets, beans, dietary ascorbic acid, animal proteins,

### NCCT images:



Fig-1: NCCT KUB-axial (Before Treatment)-showing 13mm hyperdense right mid ureter calculus.

chocolates, black tea, softdrinks and salt were condemned. [7]

Weekly review was advised and the medicines were planned to be given for 6 weeks and then a repeat NCCT was planned. After seven days of medicine administration, patient was reviewed. She did not experience a worse pain like before and hardly needed any painkillers. Although she was advised to take antispasmodic tab *Drotaverine* in case of severe pain, she didn't take it as the pain was tolerable after intake of *kshara* and *kashaya*. In the first visit she gave a 2/10 score in assessing with Wong Baker Faces Pain scale. In the subsequent visits her confidence increased greatly and besides having getting rid of the pain (WBF score – 0/10), she also mentioned a feeling of lightness of the body. There was no complaint of blood mixed urine or burning micturition.

In the fourth week she noticed a heartburn few minutes after ingestion of the *kshara* capsule continuously for three days. So she was advised to take a teaspoon full of plain cow ghee in empty stomach every morning and it was relieved. After 6 weeks NCCT and urine routine microscopy were repeated. All parameters in urine routine microscopy were within normal limits. NCCT showed – A Hyperdense calculus of size 9.5mm noted in distal ureter at around PUJ, causing mild hydroureteronephrosis (fig- 3 & 4 After Treatment).



Fig-2: NCCT KUB –axial (Before Treatment)-showing 2.2 mm calculus in lower pole of right kidney.



Fig-3: Axial CT (After Treatment)- showing 9.5mm stone in right PUV

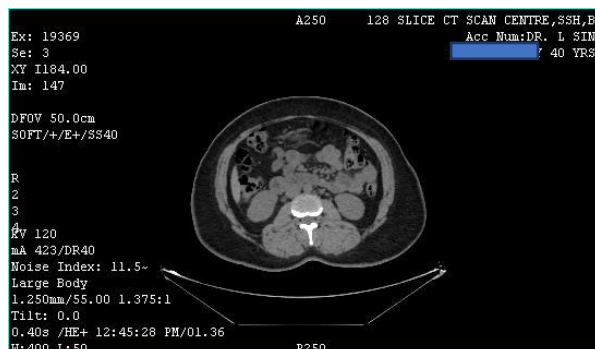


Fig-4: Axial CT (After Treatment)- showing normal axial view of lower pole of right kidney (previous calculus of 2.2mm not seen)

### Result and Discussion:

The dissolution of a large calculus conservatively usually takes time. The possibility of spontaneous expulsion of stone depends on several factors like diameter of stone, location, ureteral strictures etc. In this case after six weeks of conservative management, the mid ureteric stone, after passing the second ureteral constriction at the pelvic brim, came down to the distal ureter. A normal ureter has only 3-4mm diameter, so the constriction at the pelvic brim will be still too narrow to allow the passage of such a big stone. So this was something interesting about the case which gives a hope for managing big calculus conservatively. The size of the stone has reduced by 4mm in these six weeks. Also the tiny concretion of 2.2mm in lower pole of right kidney has disappeared in the repeat CT which confirm expulsion of tiny renal stone. This observation is also of good clinical value because lower pole calculi are the most difficult ones to be expelled owing to the anti-gravity principle behind their location. Due to the reduction in size, obstruction due to the ureteric calculus, the status of hydronephrosis has also changed from moderate to mild which is a functional reward for the kidney. Another main observation is the symptomatic relief of the patient.

The given medicine *Tila- Dhatrikashara* along with *Gokshurakashaya* is a classical

formulation taken from *Rasatarangini*.<sup>[8]</sup> It is mentioned as *Ashmari nasanamparam yoga*. *Susrutha acharya* mentions the use of *Kshara* along with *vastisodhanadravyas* in *Ashmariprakarana*. *Kshara* due to its properties like *chedana*, *bhedana*, *lekhana* acts in a way like a chemolyser. Plant ashes are rich in Potassium, Sodium and Magnesium salts which act as inhibitors of nucleation of stones.

The drugs *Gokshura* (*Tribulus terrestris*) *Tila* (*Sesamum indicum*) and *Amalaki* (*Embolica officinalis*) are already proven drugs for their anti-inflammatory, analgesic and diuretic properties. Studies show that the aqueous extract of *Tribulus terrestris* having high concentrations of Potassium ion elicited positive diuresis (Potassium sparing diuretic) which showed more than that of Furosemide. Also smooth muscle relaxation produced by *Gokshura* facilitates expulsion of stone. It inhibits nucleation and growth of calcium oxalate crystals.<sup>[9-10]</sup>

### Conclusion:

This case demonstrates medical management with *paneeyakshara* and *Gokshurakashaya* for a period of six weeks showed marked reduction in stone size, reduction in degree of Hydronephrosis, improvement of quality of life (QoL) of the patient and the downward displacement of stone crossing the

pelvic brim constriction. This single case study paves way towards the chances of practice of medical expulsive therapy in uncomplicated big ureteric calculi.

**Limitation of study:**

The pharmacological action of *Tila-Dhatrikshara* may be analyzed in further studies and used in more numbers of such cases.

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**Consent of patients:**

The written informed consent has been obtained from the patient for treatment and publication of data.

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