

## A CASE STUDY OF GARBHINI MUTRASHMARI WITH SPECIAL REFERENCE TO RENAL CALCULI

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### ABSTRACT

The disease *mutrashmari* is one among the *Ashtamahagada*. In the explanation of *garbhini vyadhi*, *mutrashmari* has not been mentioned. *Acharya Kashyapa* has opined that the aetiopathology of the physical and psychological disorders that occurs in pregnant women are same as in normal individuals. Pathological factors involved like *doshas*, *dushyas* etc are same in both. *Mutrashmari* is a *kapha* dominant *tridoshaja vyadhi* occurring in any part of urinary tract. The vitiated *vata dosha* with *kapha dosha* in *mutravaha srotas* leads to this condition. Renal stones affect 5-15% of the world's population with recurrence rates of around 50%. Stones appear to be more common in multiparous women with 80-90% stones occurring in the second and third trimester. Ureteral stones are encountered twice as often as renal calculi and both the right and left side appear to be equally affected despite the greater dilatation of the right renal tract. A quarter has a history of previous stone disease. The medicines used in this case study are diuretic in nature and not harming the pregnant women and the fetus.

**Keywords:** *Mutrashmari*, ureteral stones, *mutravaha srotas*, multiparous

### INTRODUCTION

Pregnancy brings a new meaning to the concept of beauty. It is a period of immense joy coupled with excitement. The incidence of renal stones in pregnancy is quoted to be 1 in 1500 which is similar to non pregnant women. The word '*mutrashmari*' in which the word '*Ashma*' meaning stone is formed in the urinary system. It is *tridoshaja vyadhi* with predominant *kapha dosha*. *Ashmari* are structures like hard stone. A kidney stone also known as renal calculus or nephrolith, is a solid piece of material which is formed in the kidney from minerals in the urine.<sup>1</sup> Stone formation is a multifactorial process and

the incidence appears to be increasing among women. Overall the risk of stone formation during pregnancy does not appear to be increased. They are the common cause of non obstetric abdominal pain in pregnant women. Diagnosis and treatment of renal stones during pregnancy is a complex problem. It can be difficult to differentiate between physiological and pathological changes and diagnostic test and treatment options are limited because risks to the fetus from ionising radiation and interventional procedures need to be balanced with optimising clinical care for the mother.<sup>2</sup>Preganacy induced intra renal vasodilatation,

both afferent and efferent resistance decreases leads to increased effective renal plasma flow and glomerular filtration rate. There are some evidences that pregnant women may have fewer symptoms with stone passage because of urinary tract dilatation. So, with this intention Ayurvedic medications were used for the *ashmari bhedana* without causing any harm to the mother and the fetus.

**Aims and objectives:**

1. To understand the causes of *mutrashmari* in *garbhini*
2. To assess the efficacy of ayurvedic medicines in treating *mutrashmari* in *garbhini*.

**Case report:**

A 21 years old female Hindu patient with history of 4 months of amenorrhoea, housewife by occupation visited the OPD of GAMCH and RC, department of *prasooti tantra* and *stree roga* on 20/12/2018 with complaints of pain in the lower abdomen in the right iliac fossa with nausea and occasionally vomiting. Hence, anomaly scan was done which revealed three renal calculi. She consulted allopathic doctors for the second opinion she consulted our hospital.

**Past history:**

No h/o gestational diabetes mellitus/ PIH/Thyroid dysfunction.

Family history:

Nothing contributory

Menstrual / obstetric history:

Menarche: 13 years

Menstrual cycle: 3-4 days/28-30days cycle.

Married life: G<sub>3</sub>P<sub>1</sub>L<sub>1</sub>A<sub>1</sub>

A<sub>1</sub>- 2 ½ months-induced abortion

L<sub>1</sub>-2 ½ Years –lower segment caesarean section

LMP-23/8/18

EDD-30/5/19

POG- 15 Weeks 4 days

General examination:

Built-moderately

Nourishment- poorly

Temp: normal

RR: 18 Cycles /min

Pulse rate: 76 beats/ min

BP: 110/70mm HG

Height: 146 cms

Weight: 36 kg

Pallor: mild

Oedema/clubbing/cyanosis/icterus/lymphadenopathy-absent

Tongue – uncoated

*Asta vidha pariksha:*

*Nadi:* 76beats /min

*Mutra:* 2-3 times in a day and once in a night

*Mala:* Regular

*Jihwa:* *Alipta*

*Shabda:* *Prakruta*

*Sparsha:* *Prakruta*

*Druk:* *Prakruti*

*Aakruti:* *Madhyama*

Systemic examination:

CVS: S<sub>1</sub>S<sub>2</sub> heard no murmurs

CNS: Well oriented, conscious.

RS: Normal vesicular breathing, no added sounds

P/A: Inspection: Lower segment caesarean section scar noted

Palpation: Uterus ~16 weeks

FHS- 154-156bpm

*Dashavidha pariksha:*

*Prakruti:* *Vata-Pitta*

*Vikruti :* *Kapha –vata*

*Sara:* *Madhyama*

*Samhanana:* *Madhyama*

*Satmya:* *Sarvarasa satmya*

*Satva :* *Avara*

*Aahara shakti:* *Madhyama*

*Vayama shakti:* *Avara*

*Jarana shakti:* *Madhyama*

*Agni:* *Vishama*

Lab investigation:

Blood group: ‘O’+ve

Hb%:10gms

HIV: Negative

HbsAG: Negative

VDRL: Negative

RBS: 92mgs/dl

Urine examination: Pus cells: 4 -6 cells/cumm

RBC’s: 2 to 3 cells/cumm

USG: Anamoly scan done on 13/12/2018  
 Single intrauterine pregnancy of 16-17 weeks  
 Fetal heart rate: visualized  
 Fetal heart rate: 160bpm  
 Placenta: posterior  
 Amniotic fluid: normal  
 Cervical length: 3.5cms  
 Thin amniotic band seen extending from anterior to posterior uterine wall at the lower margin of the placenta  
 Maternal right kidney show two calculi measuring 4.5mm and 6.7mm in upper pole  
 Maternal left kidney show calculus measures 5.6mm in lower pole.  
 Treatment: The following medications were given for 30 days:  
*Chandraprabha vati* 1-0-1 (AF)  
*Madhiphala rasayana* 2tsf -0-2tsf (AF)

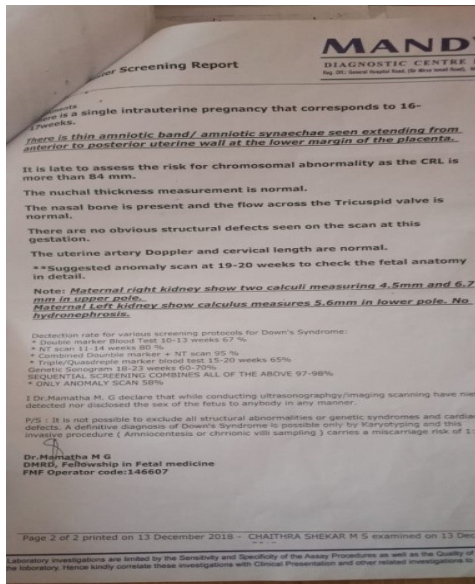
**Instruction to the patient:**

1. High liquid intake ,at least 3-4 litres of water
2. Intake of sugarcane juice, tender coconut water and butter milk
3. Complete and frequent emptying of bladder.
4. Advised to follow *masaanumasika garbhini paricharya* and avoid *garbhoupaghatakara bhava's*.

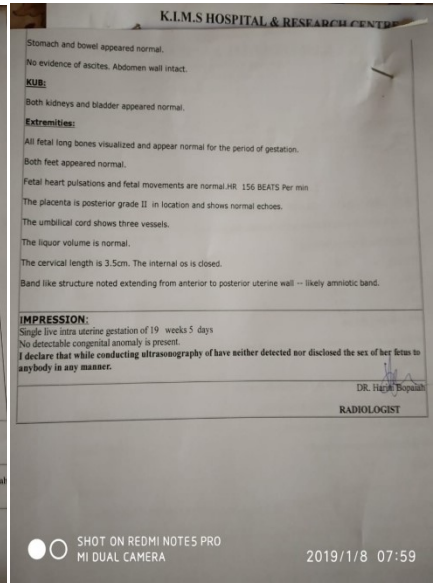
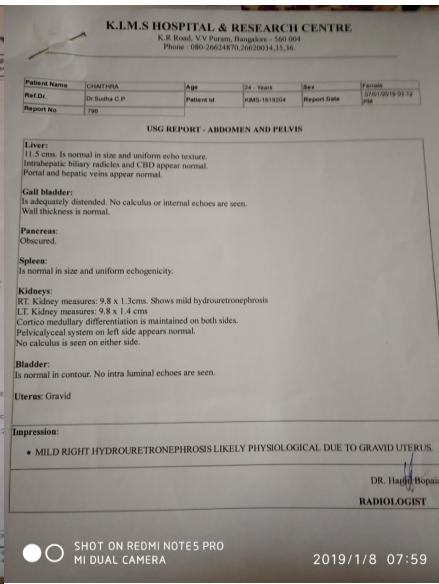
**Observation and Results:**

Urine examination done on 6/1/2019  
 Pus cells: nil  
 Rbc's: nil  
 Albumin and sugar: nil  
 Repeat ultrasonography of abdomen and pelvis done on 7/1/2019  
 Liver: 11.5cms, normal in size  
 Gall bladder: Adequately distended, no calculus.  
 Pancreas: Obscured  
 Spleen: Normal in size.  
 Kidneys: Right kidney: 9.8 x 1.3cms. Shows mild hydroureteronephrosis  
 Left kidney: 9.8 x1.4 cms.  
 Pelviccalyceal system on left side appears normal.  
 No calculus seen on either side.  
 Bladder: Normal in contour.  
 Uterus: Gravid  
 Impression: Mild right hydroureteronephrosis likely to be physiological due to gravid uterus.  
 A single fetus is seen in utero with variable presentation correspond to 19 weeks 5 days of pregnancy. No detectable congenital anomaly is present.

**Before treatment**



**After treatment**



## DISCUSSION

During pregnancy there is progressive anatomical, physiological and biochemical changes in the urinary system. They are dilatation of the ureters, renal pelvis and the calyces and the kidneys enlarge in length by 1cm. Renal plasma flow and the glomerular filtration rate both increase by over 50% during pregnancy leading to increased urinary excretion of calcium, uric acid, sodium and oxalate all of which are lithogenic. Increased GFR causes reduction in maternal plasma levels of creatinine, blood urea nitrogen and uric acid. Renal tubules fail to reabsorb glucose, uric acid, amino acids and water soluble vitamins completely. Calcium tubular reabsorption is also reduced due to suppression of parathyroid hormone. Ureters become atonic due to high progesterone level. Dilatation of the ureter above the pelvic brim with stasis, marked on the right side especially in primi gravidae. It is due to dextro rotation of the uterus presenting the right ureter against the pelvic brim and also due to pressure by the right ovarian vein which crosses the right ureter at right angle. There is marked hypertrophy of the muscle and the sheath of the ureter especially pelvic part due to oestrogen. There is elongation, kinking and outward displacement of the ureters. These changes and urinary stasis secondary to hydronephrosis, promote stone formation in pregnancy. It is also thought that this may be due to increased urinary excretion of inhibitors of stone formation such as citrate, magnesium and the glycoprotein nephrocalcin and due to the alkalinity of urine in pregnancy.

Stone formation is a consequence of complex physio-chemical processes which involves sequence of events in the formation of any urinary stone. There is first the saturation of urine, increased saturation, nucleation, crystal growth, crystal aggregation, crystal retention and stone formation. There is reduction in volume of urine due to saturation of *kapha dosha* in urine leads to *ashmari* formation. *Kapha dosha* is *samavayi karana* of *ashmari*. The predominant *kapha dosha* gets hard and develops in the form of *ashmari*. This is a gradual process. According to *acharya Sushruta* narrates that the manner in which even clean water collected in pot precipitates in the bottom after

sometime similarly the process of hardening of *ashmari* occurs with the *kshara* of *kapha dosha* present in *mutravaha srotas*.

Risk factors include a positive family history, dietary factors such as low intake of water or increased intake of animal protein and sodium, environment factors such as hot climate and under lying medical conditions such as hyperparathyroidism. Overall risk of stone formation is similar in pregnant and non pregnant women.

During pregnancy, flank pain is the most common presentation affecting 89-100% of women and haematuria is seen in 75-95% of cases. Renal stones in pregnancy had been associated with a significant risk of recurrent miscarriage, mild preeclampsia, chronic hypertension, gestational diabetes mellitus and caesarean deliveries or may also present as preterm labour because the dehydration from vomiting induced by colic release antidiuretic hormone and oxytocin<sup>5</sup>.

In the present study, *Chandraprabha vati* which is indicated especially in treating *mutrakruhra*, *mutraghata*, *ashmari*, as said in *Sharangadhara samhita* as *sarvaroga pranashini*. Also acts as *rasayana* and facilitates purification of micro channels due to *vata kaphahara properties*.<sup>3</sup> *Madiphala rasayana* is effective in treating nausea, vomiting, indigestion and loss of appetite. The beneficial actions of this formulations could be due to complex spectrum of actions including anti inflammatory, anti microbial, diuretic, anti spasmodic, litholytic and anti calcifying activities of its ingredients.

## CONCLUSION

*Mutrashmari* in *garbhini* is an uncommon medical issue. Oral administration of above formulation was found to prevent the urinary supersaturation of lithogenic substances. Ayurvedic formulations containing principal herbs useful in renal calculi were found safe in pregnancy. The findings showed beneficial effects of this formulation as revealed by the improvement of clinical symptoms, increased rate of stone expulsion rate and time required for expulsion as well as urine microscopy and

ultrasonography which correlate well with the findings. Sonography is usually selected to visualise stones, some renal stones may not be detected because of hydronephrosis. Again a repeat scan is advised after delivery.

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