

UROLITHIASIS TREATED BY SIDDHA MEDICINE: A CASE REPORT

Nikil Niva John Raja^{1*}, Hema Nandhini Devi Veluchamy², Sridevi Lakshmikanthan³ and Dr. Akila B.⁴

¹Research Associate (Siddha), Siddha Clinical Research Unit, Safdarjung Hospital campus, Central Council for Research in Siddha, Ministry of AYUSH, New Delhi, India.

²Junior Research Fellow (Siddha-Pharmacovigilance), Siddha Clinical Research unit, Safdarjung Hospital campus, Central Council for Research in Siddha, Ministry of AYUSH, New Delhi, India.

³Research Associate (Siddha), Siddha Clinical Research unit, Safdarjung Hospital campus, Central Council for Research in Siddha, Ministry of AYUSH, New Delhi, India.

⁴Research Officer (Siddha) and In-Charge, Siddha Clinical Research unit, Safdarjung Hospital campus, Central Council for Research in Siddha, Ministry of AYUSH, New Delhi, India.

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Corresponding Author: Nikil Niva John Raja

Research Associate (Siddha), Siddha Clinical Research Unit, Safdarjung Hospital campus, Central Council for Research in Siddha, Ministry of AYUSH, New Delhi, India. DOI: 10.5281/zenodo.11142334

ABSTRACT

Urolithiasis is a global problem, also known as kidney stones or nephrolithiasis, and has affected mankind since ancient times. It is characterized by renal colic (intense cramping pain), flank pain (pain present in the backside), haematuria (blood present in urine), urinary obstruction, urinary tract infections, Dysuria, hydronephrosis (dilation of the kidney), nausea, vomiting, and fever. In the Siddha system of medicine, Urolithiasis is correlated with *Kalladaipu*. In Siddha literature certain medicines are mentioned for the treatment of urolithiasis. In this case report, a 39-year-old male patient attend Siddha Clinical Research Unit, New Delhi with the complaints of back pain and pain forward to the lower abdomen region, burning micturition, nausea, groin pain, and low back pain present for the past one month. A patient successfully treated with the Siddha sastric medications. A mixture of Chooranam is a three Siddha sastric medicines which include *Elathy Chooranam* (100gm), *silasathu parpam* (10gm), *Nandukkal parpam* (10gm). This mixture *chooranam* 2 gm twice a day after a meal with warm water. *Nerunjil Kudineer* 60 ml with *Vengara parpam* 200 mg twice a day, administered before food. The patient completed this medication without any complications, and no ADR was reported. This case study observed, the siddha medicines have been shown to be highly effective in the treatment of urolithiasis.

KEYWORDS: Siddha Medicine, Kalladaipu, Nerunjil Kudineer, Nandukkal Parpam, silasathu parpam.

1. INTRODUCTION

The crystals of stones or uroliths present in the urinary tract are called urolithiasis. Urolithiasis is a global problem, also known as kidney stones or nephrolithiasis, and has affected mankind since ancient times.^[1] The prevalence of urinary

stones has significantly increased, but regional differences are observed, such as the incidence in Europe (5-9%), North America (7–13%), and Asia (1–5%). In India, the prevalence of urolithiasis was 7.9 percent (5.7 to 10.1 %).^[2] Many types of stones in urolithiasis. Calcium oxalate (75%–90%) is the most common element of calculi, followed by uric acid (5%–20%), calcium phosphate (6%–13%), and cystine (0.5%–1%).^[3] The clinical features of urolithiasis are renal colic (intense cramping pain), flank pain (pain present in the low backside), haematuria (blood present in the urine), obstructive uropathy (urinary tract disease), urinary tract infections, blockage of urine flow, and hydronephrosis (dilation of the kidney), nausea, vomiting, and fever. Its clinical features are depending on the location of the stone.^[4] In the Siddha system of medicine, Urolithiasis is correlated with *Kalladaipu*. *Kalladaipu* is also known as *Achmari*. According to the Siddha literature clinical features of *Kalladaipu* are Burning micturition, pain present in the lumbar region and pain radiating from loin to the groin region, pain present in tip of the penis, haematuria and small crystals present in urine. Many Siddha Sastriic preparations are described in Siddha literature for urolithiasis. Herein the details of the urolithiasis case, successfully treated with Siddha Sastri medications have been presented. This case study observed, the patient completely recovered from renal stone after six weeks of Siddha intervention, and other clinical features burning micturition, nausea, groin pain, and low back pain is completely recovered. In this case study, Siddha medicines have been shown to be effective in the management of urolithiasis.

2. Patient Information

14/01/2023 a 39-year male patient attend Siddha Clinical Research Unit, New Delhi with the complaints of back pain and pain forward to the lower abdomen region, burning micturition and occasionally dysuria and vomiting sensation present for the past one month. On examination of the abdomen, there was no organomegaly seen. Then, the patient was advised to take Ultrasonography of the Abdomen and Pelvis. On 16/01/2023, the scan report revealed that one calculus measuring 4 mm in the middle calyces of the right kidney and one calculus measuring 3 mm in the lower calyces of the left kidney and confirmed that it was Bilateral Calyceal Renal Calculi. The occupation of the patient was construction worker.

3. Clinical Findings

The patient had low back pain and pain forward to the lower abdomen region, burning micturition, and occasionally dysuria and vomiting sensation present for the past one month. Patient vitals were within normal limits. Ultrasonography of the Abdomen and Pelvis On 16/01/2023 report revealed the patient had Bilateral Calyceal Renal Calculi.

4. Diagnostic findings

According to the Siddha literature general characteristics of *Kalladaipu* (Urolithiasis) are *Iduppin pin puram vali* (low back pain), *Nheerpuzhai erithal* (burning micturition), *Saththi* (vomiting), *Nheerpuzhai nhoathal*- Dysuria, *Suram*-Fever, *Kurimunai Nhoathal*- Pain present in tip of the penis and *Sirunheeril karkal velipadal*- small crystals present in urine.^[5]

The patient had *Iduppin pinpuram vali* (low back pain), *Keelvayirru vali* (pain forward to lower abdomen region), *Nheerpuzhai erithal* (burning micturition), *Nheerpuzhai nhoathal* (Dysuria), *Saththi* (vomiting) in last one month.

The patient had no history of any other comorbidities. Also had no previous history of urolithiasis occurrence. Patient vitals were within normal limits.

Ultrasonography of the Abdomen and Pelvis On 16/01/2023 report revealed one calculus measuring 4 mm in the middle calyces of the right kidney and one calculus measuring 3 mm in the lower calyces of the left kidney and confirmed that it was Bilateral Calyceal Renal Calculi.

In Siddha: *Naadi- Piththavaatham*, *Naa- Normal*, *Niram- Normal*, *Sparisam- Affected* (Pain present in the low back region and lower abdomen region), *Mozhi- Normal*, *Vizhi- Normal*, *Malam- Normal*, *Moothiram- Affected* (Burning Micturition), *Thaegi- Vaathapiththam*.

Final Diagnosis: *Kalladaipu* (Urolithiasis)

Subjective parameters:

- Low back pain and pain forward to the lower abdomen region
- Burning micturition
- Vomiting (Table 1 represents the Method of Assessment in subjective parameters)

Table 1: Method of Assessment in subjective parameters:

Parameters	Grade			
	0	1	2	3
<i>Vali- Pain</i> (VAS scale)	No Pain	Mild	Moderate	Severe
<i>Nheerpuzhai erivu- Burning Micturition</i>	Absent	Mild	Moderate	Severe
<i>Saththi- vomiting</i>	Absent	Present	-	-
<i>Nheerpuzhai nhoathal- Dysuria</i>	Absent	Present	-	-
<i>Suram- Fever</i>	Absent	Present	-	-

Objective parameters

- USG Abdomen and Pelvis
- Blood Investigations: CBC, ESR, HB, Lipid profile, Renal Function Test, liver Function Test
- Urine Routine Examination

5. Treatment Schedule

In Siddha literature certain medicines are mentioned for the treatment of urolithiasis. They are ***Kudineer Chooranam***: *Maavilanga pattai Kudineer Chooranam*, *Sirupeelai Kudineer Chooranam*, *Nerunjil Kudineer Chooranam*, *Neermulli Kudineer Chooranam*. ***Chooranam***: *Elathy Chooranam*, *Amirthathi Chooranam*, *Sirupeelai Chooranam*. ***Mathirai (Tablets)***: *Kalludaikudori*, *salothaarimani*, *salamanjari*. ***Parpam***: *Viraalmeen thalaikal parpam*, *Palagarai parpam*, *sangu parpam*, *silasathu parpam*, *Nandukkal parpam*, *Vengara parpam*. ***Chunnam***: *Vediyuppu chunam*. ***Chendooram***: *Vediannabethi Chendooram*, *Vediyuppu Chendooram*, *Velli Chendooram*, *Rasa Chendooram*.^[5,6]

Following Siddha medicines have been selected for this case study according to Siddha Medicine guidelines prescribed by *Kalladaipu* (Urolithiasis).

A mixture of *Chooranam* is a three unique Siddha medicines which include *Elathy Chooranam* (100gm), *silasathu parpam* (10gm), *Nandukkal parpam* (10gm). Combination *Chooranam* 2 gm twice a day after a meal with warm water. *Nerunjil Kudineer* 60 ml with *Vengara parpam* 200 mg twice a day, administered before food. Method of *Kudineer* preparation: Five grams of coarse powdered *Nerunjil Kudineer Chooranam* was mixed with 240 ml of water, and the mixture was allowed to boil till the total volume of the preparation was reduced to one-fourth (60ml) and filtered. The patient was administered these Siddha medicines for 2 months.

The patient was recommended to visit the hospital once every seven days. and during each visit, all parameters were assessed and the prognosis was noted. The patient was advised to follow *Pathiyam* in this line of treatment.

Pathiyam: 1. Food Regimens to take more: red rice, *Mullangi* (*Raphanus sativus*), *Vaazhaithantu* (Banana tree stem), *sirukeerai* (*Amaranthus tricolor*), *pasarai keerai* (*Portulaca quadrifida*), *Puthina* (*Mentha arvensis*), *avarai* (*Lablab purpureus*), *pudalankai* (*Trichosanthes cucumerina*), *suraikai* (*Lagenaria siceraria*) and *seeraga water* (*Cuminum cyminum water*). 2. To Avoid: Excessive salt, Tomato, Cabbage, day sleep, excessive sexual intercourse, control urinary urgency, and high carbohydrate food.

6. Outcomes and follow-up

During this Siddha intervention, this medication was completed without any complications and no ADR was reported. Prognosis and symptoms are noted in each visit. It represents table no 2 and Table no 3. Before treatment, the patient had Iduppin *pinpuram vali* (low back pain), *Keelvayirru vali* (pain forward to lower abdomen region), *Nheerpuzhai erithal* (burning micturition), *Saththi* (vomiting) clinical features are noted. In a first follow-up visit, pain and burning micturition slightly reduced and dysuria and vomiting sensation stopped. In the second follow-up visit, mild lower abdominal pain was only present, and other clinical features are stopped. In 3rd follow-up visit, the patient recovered from all clinical features. After 30 days of treatment, the patient was advised to take the USG abdomen and pelvis. On 15/02/2023 USG Abdomen and Pelvis report showed no calculus seen in the right kidney and 2 mm calculus seen in the lower calyces of the left kidney. That showed a 4 mm calculus of the right kidney expelled out. As per the patient request due to cost effective of USG Abdomen and Pelvis study, patient was advised to take USG Abdomen and Pelvis in the 90th day of the treatment. On 05/05/2023 USG Abdomen and Pelvis, reports showed there was absolutely no calculus in the urinary tract. After 90 days of treatment, the patient was advised to follow *Pathiyam*. It represents Table 2, 3 and Figure 1).

Table 2: Subjective parameters according to signs and symptoms of Kalladaipu (Urolithiasis).

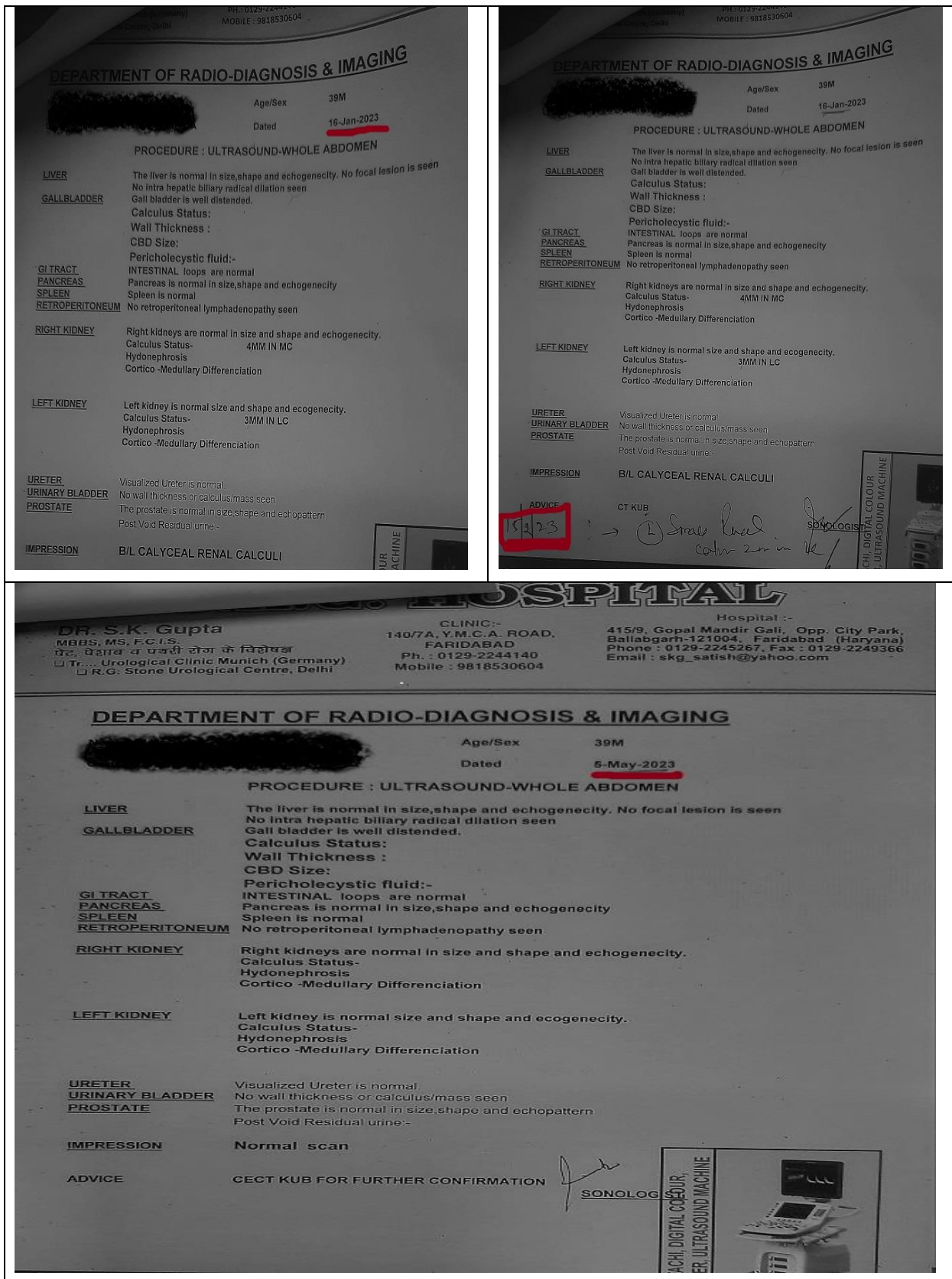
Subjective parameters	Before treatment Day 0 (1 st visit)	Day 7 (1 st follow-up visit)	Day 14 (2 nd follow-up visit)	Day 21 (3 rd follow-up visit)	Day 30 (4 th follow-up visit)	Day 60	Day 90
<i>Vali</i> - Pain (VAS scale)	2	1	1	0	0	0	0
<i>Nheerpuzhai erivu</i> - Burning Micturition	2	1	0	0	0	0	0
<i>Saththi</i> - vomiting	1	0	0	0	0	0	0
<i>Nheerpuzhai nhoathal</i> - Dysuria	1	0	0	0	0	0	0
<i>Suram</i> - Fever	0	0	0	0	0	0	0

Table 3: USG Reports.

Scanning Date	USG Report-Impression
16/01/2023	<ul style="list-style-type: none"> ✓ Right Kidney normal in size and shape and echogenicity. 4 mm calculus seen in middle calyces. ✓ Left Kidney normal in size and shape and echogenicity. 3 mm calculus seen in lower calyces. ✓ Impression: Bilateral Calyceal Renal Calculi
15/02/2023	<ul style="list-style-type: none"> ✓ Right Kidney normal in size and shape and echogenicity. No calculus seen ✓ Left Kidney normal in size and shape and echogenicity. 2 mm calculus seen in lower calyces ✓ Impression: Left Small Renal Calculi
05/05/2023	<ul style="list-style-type: none"> ✓ Right Kidney normal in size and shape and echogenicity. No calculus seen ✓ Left Kidney normal in size and shape and echogenicity. No calculus seen ✓ Impression: Normal study

Table 4: Biomarkers in Before Treatment and After Treatment.

Biomarkers	Before Treatment	After Treatment
Blood Investigations		
Neutrophils	54%	59%
Lymphocytes	29.9%	26%
Eosinophils	6%	02%
Monocytes	08%	03%
Basophils	00%	00%
Haemoglobin	14 g/dL	16 g/dL
RBC Count	4.60 millions/cu. mm	5.15 millions/cu. mm
Platelet count	2.75 lacs cells/ cmm	3.15 lacs cells/ cmm
ESR	12 mm/ hr	6 mm/ hr
Total WBC Count	7200 cells/ cu.mm	8300 cells/ cu.mm
Random Blood Sugar	104 mg/dl	102 mg/dl
T. Bilirubin	0.9 mg/dl	0.7 mg/dl
D. Bilirubin	0.3 mg/dl	0.2 mg/dl
In. Bilirubin	0.6 mg/dl	0.5 mg/dl
SGOT	28 U/L	21 U/L
SGPT	35 U/L	32 U/L
ALP	99 U/L	78 U/L
T. Protein	7.51 gm/dl	7.35 gm/dl
Globulin	2.91 gm/dl	2.6 gm/dl
Albumin	4.60 gm/dl	4.32 gm/dl
T. Cholesterol	182 mg/dL	165 mg/dL
Triglycerides	80 mg/dL	72 mg/dL
Serum Urea	16 mg/dL	14 mg/dL
Serum Creatinine	0.8 mg/dL	0.7 mg/dL
Serum Uric Acid	4.8 mg/dL	4.4 mg/dL
Urine Routine Analysis		
Appearance	Clear	Clear
Colour	Pale yellow	Pale yellow
pH	5.4	5.3
Specific Gravity	1.010	1.009
Glucose	Nil	Nil
Bile Salt	Absent	Absent
Bile Pigments	Absent	Absent
Urobilinogen	Normal	Normal
Protein	Nil	Nil
Urine Microscopic Examination		
Crystals	Absent	Absent
RBC'S/ Hpf	Absent	Absent
Pus Cells/ Hpf	2-3/hpf	1-2 /Hpf



Figures 1: USG Abdomen and Pelvis Results.

7. DISCUSSION

Stone formation is usually caused by inadequate urinary output, external bodies in the urinary tract, microbial infections, excess oxalate, and calcium diet, vitamin abnormalities such as vitamin A deficiency, excess vitamin D, and metabolic diseases such as hyperthyroidism, cystinuria, gout, intestinal disorders, etc. Food factors associated with stone formation include a low intake of liquids, a high intake of animal proteins, sodium, refined sugars, fructose, and a high intake of corn syrup, etc.^[7] Urolithiasis is characterized by the supersaturation of the urine from the crystals formed by the stone due to its high concentration and the accumulation and crystallization of these crystals within the parenchyma of the kidney, forming the renal calculi. Crystal nucleation and growth are the key factors in the production of all types of kidney stones. Painkillers such as diclofenac, ibuprofen, acetaminophen (paracetamol), or metamizole can be used to relieve the pain caused by stones. A stronger painkiller (opioid) can be considered for very severe pain. Depending on the diameter of the kidney stones (5–10 mm), certain medications (alpha-blockers) can help to relax the muscles and permit the stones to exit the body. Larger kidney stones need to be removed in most cases. In general, depending on the size and location of kidney stones, sound waves can be used to destroy the stones or they can be removed by endoscopy or a minor surgical procedure.^[8]

In the Siddha system of medicine, Urolithiasis is correlated with *Kalladaipu*. As per Siddha literature causes of *Kalladaippu* (Urolithiasis) are, unhealthy diet habits, inadequate intake of fluids, and lifestyle modifications that can lead to vitiated in Pitha humor. Vitiating *pitha* humor affects *Abanan Vayu (keezhnokku kaal)*. The downward expulsion of stool and urine, ejaculation of semen, and menstruation are the functions of *keezhnokku kaal*. It has a significant impact on urinary tracts and leads to reduced urinary outputs, and deposition of salts in the Urinary tract and it creates stones in the urinary tract. Siddha Literatures describes some drugs as lithotriptic and diuretics, which are successfully used in the treatment of urolithiasis.^[9] These therapeutic regimens are a mixture of Siddha Sastric medicines. *Elathy Chooranam* is a Siddha polyherbal formulation and it indicates to treat *Pitha* Diseases, *Kunmam* (Acid Peptic Diseases), *Saththi* (Vomiting), and Skin Diseases.^[10] *Elathy Chooranam* has diuretic (*Sirunheer perukki*), anti-hypertensive, and anti-oxidant properties.^[11] *Silasathu parpam* is a sastric herbomineral formulation and it indicates to treat *Kalladaipu* (Urolithiasis), *Sirunheernhaala Thaabitham* (Urinary Tract Infection), *Nheerpuzhai Erithal* (Burning micturition), Obesity and Male Sexual Problems. *Silasathu Parpam* has Diuretic, Lithotriptic (*Kattrugalakki*), Astringent, and Antihypertensive properties.^[12] *Nandukkal parpam* is a herbomineral Siddha formulation and it indicates to treat *Kalladaipu* (Urolithiasis), *Peruvayiru* (Ascites), *Vellai* (Leucorrhoea) and *Kaba Diseases*. A study carried out by Nalina sofia ae all showed *Nandukkal parpam* is effective and safe for the management of *Kalladaipu* (Urolithiasis).^[13] *Nandukkal parpam* has Anti-microbial and Diuretic properties.^[14] *Nerunjil Kudineer Chooranam* is a polyherbal siddha formulation and it indicates to treat *Nheeradaippu* (Urinary Obstruction), *Kalladaippu* (Urolithiasis), *Nheererichal* (Burning Micturition) and *Kaamalai* (jaundice). *Nerunjil Kudineer* has Nephroprotective^[15], anti-inflammatory, antinociceptive^[16], and anti-urolithiasis Properties.^[17] *Vengara parpam* is a Siddha herbomineral formulation and it is indicated to treat *Nheerpuzhai Erithal* (Burning Micturition), *Kalladaippu* (Urolithiasis), *Vellai* (Leucorrhoea), and *Pitha Diseases*. *Vengara Parpam* had antibacterial and lithotriptic properties.^[18]

These medications facilitate the regulation of vitiated pitha humor and Abanan Vayu and increase urinary output and disintegration of salts deposition in the urinary tract. The above Siddha Sastric medications are propitious Lithotriptic, diuretic and nephroprotective properties and it helps in the decomposition of stones and easily removed the stones from the urinary tract.

According to this case report, after Siddha intervention all clinical features are reduced in their third follow-up visit, and completely recovered from urolithiasis. 90th-day USG Report showed no recurrence of new stone formation.

8. CONCLUSION

In this case report, Siddha Medicines was shown to be very efficient and cost-effective for the treatment of urolithiasis. Further, a large sample of studies should be carried out in order to reveal the efficacy of Siddha treatment for urolithiasis.

9. Patient Perspective

The patient- A month ago sometimes while urinating I feel pain and burning sensation. After two days later, I got pain in my lower back region. Then I came to Siddha Clinical Research unit, Safdarjung Hospital, New Delhi. Doctor advised to take USG Abdomen and pelvis test and report shows, Stones in kidney. Then the doctor advised to take this siddha medicines for next 2 months. After one month of the treatment, my doctor asked me to repeat USG test. That report showed right kidney normal and left kidney have small stone. I continued my medicines for next one month. After 90 days test report showed no stones in kidney. Now I feel better.

10. Informed Consent

Written consent for publication of this case study was obtained from the patient.

11. Financial Support and Sponsorship

Nil

12. Conflict of Interest

Declared None.

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