



Review Article

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NEPHROLITHIASIS AND HOMOEOPATHY: A LITERATURE REVIEW

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ABSTRACT

Holistic approach of homoeopathy is its uniqueness which considers the whole man is diseased not only the individual part. Detailed case taking and individualisation helps to find the nearest similimum of each individual case, by which alone the cure is to be accomplished. Homoeopathy offers a gentle way toward the health of the entire individual.

Keywords: *Nephrolithiasis, Homoeopathy, Individualisation*

INTRODUCTION

Nephrolithiasis or urolithiasis is formation of urinary calculi at any level of the urinary tract. The term *renal calculus* is from the Latin *rēnēs*, meaning "kidneys", and *calculus*, meaning "pebble". Lithiasis (stone formation) in the kidneys is called nephrolithiasis, from *nephro-*, meaning kidney, + *-lith*, meaning stone, and *-iasis*, meaning disorder. A distinction between nephrolithiasis and urolithiasis can be made because not all urinary stones (uroliths) form in the kidney; they can also form in the bladder. But the distinction is often clinically irrelevant (with similar disease process and treatment either way) and the words are thus often used loosely as synonyms.

EPIDEMIOLOGY ⁽¹⁾

Urinary calculi are worldwide in distribution but are particularly common in some geographic locations such as in parts of the United States, South Africa, India and South-East Asia.

- **Incidence:** approximately 2% of the population experiences renal stone disease at sometime in their life. About half of people who have had a kidney stone will have another within ten years.
- **Gender:** Male - female ratio - 2:1.
- **Age:** The peak incidence is observed in 2nd to 3rd decades of life.

AETIOPATHOGENESIS ⁽²⁾

1. **Infection:** Organisms such as *Proteus*, *Pseudomonas*, *Klebsiella* produce recurrent UTI. These organisms produce urea, cause stasis of urine and precipitate stone formation. Nucleus of the stone may harbour these bacteriae.
2. **Hot climates** - cause increase in concentration of solutes, resulting in precipitation of calcium and formation of calcium oxalate stones.
3. **Dietary factors-**
 - Diet rich in red meat, fish, eggs can give rise to aciduria.
 - Diet rich in calcium-tomatoes, milk, spinach, rhubarb produce calcium oxalate stones.

- Diet lacking in vitamin A causes desquamation of renal epithelium which precipitates calcium, alters it and forms stones.

4. Metabolic causes –

- Hyperparathyroidism increases serum calcium levels resulting in hypercalcinosis and pelvic stones.
 - Gout increases uric acid levels and causes multiple uric acid stones.
5. **Immobilisation:** Paraplegic patients secrete large amounts of calcium in the urine resulting in calcium oxalate stones (they pass skeletons in urine).
6. **Decreased urinary citrate:** Citric acid (300-900 mg/24 hours) keeps the urinary pH low. When citric acid levels decrease, it promotes precipitation of urinary calcium. Citrate excretion is under hormonal control.
7. **Inadequate urinary drainage** as in cases of horseshoe kidney, unascended kidneys are more vulnerable for development of stones due to stasis.
8. **Randall's plaques:** Randall has suggested that initially a small erosion or an ulcer develops at the tip of renal papilla on which minute concretions or minor calcium particles get deposited and give rise to stone formation.

ICD – 10th version 2019 ⁽³⁾

- **Chapter-** Chapter XIV
- **Block-** (N00-N99)
- **Title- Diseases of the genitourinary system**
(N20-N23) Urolithiasis
 - N20 Calculus of kidney and ureter
 - ***N20.0 Calculus of kidney***
 - Nephrolithiasis NOS
 - Renal calculus or stone
 - Staghorn calculus
 - Stone in kidney

- ***N20.1 Calculus of ureter***
 - ***Ureteric stone***
- ***N20.2 Calculus of kidney with calculus of ureter***
- ***N20.9 Urinary calculus, unspecified***
- ***N21 Calculus of lower urinary tract***
 - ***N21.0 Calculus in bladder***
 - Calculus in diverticulum of bladder
 - Urinary bladder stone
 - ***N21.1 Calculus in urethra***
 - ***N21.8 Other lower urinary tract calculus***
 - ***N21.9 Calculus of lower urinary tract, unspecified***
- ***N22 Calculus of urinary tract in diseases classified elsewhere***
 - ***N22.0 Urinary calculus in schistosomiasis***
 - ***N22.8 Calculus of urinary tract in other diseases classified elsewhere***
- ***N23 Unspecified renal colic***

TYPES OF RENAL STONES ⁽²⁾

1. Oxalate Calculus (Calcium Oxalate)

The commonest type of stone, called as mulberry calculi. Irregular in shape, covered with sharp projections which tends to cause bleeding. Produces haematuria very early, resulting in deposition of blood over the stone giving a dark colour to it. Hard and single, occurs in infected urine. Can be visualized radiologically.

2. Phosphate Calculus (usually Calcium Phosphate or rarely as Magnesium Ammonium Phosphate or Struvite) Smooth, round, dirty white to yellow in colour. Commonly occurs in renal pelvis & tend to grow in alkaline urine especially when proteus organisms are present. As it enlarges in the pelvis, it grows & fills the major & minor calyces & slowly forms a Stag horn Calculus. This produces recurrent

urinary infections & haematuria. As they are large, they are usually easy to see on radiographs.

3. Uric Acid Calculus

Multiple, small, hexagonal, multifaceted. Colour varies from yellow to reddish brown. Occur in acidic urine. Pure urate stones are radiolucent, unless contaminated with calcium salts.

4. Cystine Calculus

They appear in the urinary tract of patients with a congenital error of metabolism that leads to cystinuria or due to decreased resorption of cystine from renal tubules. They are hexagonal, multiple, pink or yellow. Occur in acidic urine. Seen in young girls at puberty. They are radio opaque due to sulphur content.

5. Xanthine Calculus

Extremely rare. They are smooth and round, brick red in colour and show lamellation on cross section.

Table 1-Salient Features of Urinary Calculi (2)

SL No.	Type	Incidence	Etiology	Colour	Sensitivity	Pathogenesis
1.	Calcium stones	75%	Hypercalciuria with or without hyper-calcaemia; idiopathic	Black/dark brown	Radio-opaque	Super-saturation of ions in urine, alkaline pH of urine; low urinary volume, oxaluria and hyper-uricosuria
2.	Phosphate stones	15%	Urinary infection with urea-splitting organisms like Proteus	Dirty white	Radio-opaque	Alkaline urinary pH produced by ammonia from splitting of urea by bacterially produced urease

3.	Uric acid stones	6%	Hyperuricosuria with or without hyperuricaemia (e.g. in primary and secondary gout)	Yellow/reddish brown	Radioluc ent	Acidic urine (pH below 6) decreases the solubility of uric acid in urine and favours its precipitation
4.	Cystine stones	2%	Genetically-determined defect in cystine transport	Pink/yellow	Radio-opaque	Cystinuria containing least soluble cystine precipitates as cystine crystals
5.	Xanthine stones	< 2%	Inherited abnormalities of amino acid metabolism	Brick red	Radioluc ent	Xanthinuria

CLINICAL FEATURES ⁽²⁾

- **Renal pain:** Dull aching to pricking type of pain posteriorly in the renal angle formed by the sacrospinalis and 12th rib. Murphy's kidney punch test demonstrates tenderness at renal angle. The same pain may sometimes be felt anteriorly in the costal margin. Hence, it is described as costovertebral pain. Nausea and vomiting is due to intense sympathetic stimulation caused by stretching of renal capsule mediated by coeliac plexus.
- **Ureteric colic:** When the stone is impacted in the pelviureteric junction or anywhere in the ureter, it results in severe colicky pain originating at the loin and radiating to the groin, testicles, vulva and medial side of the thigh. This may be associated with strangury. The referred pain is due to irritation of the genitofemoral nerve.
- **Haematuria** is common with renal stone because the majority of stones are oxalate stones. The quantity of blood lost is small but it is fresh blood.

- **Recurrent UTI:** Fever with chills and rigors, burning micturition, pyuria may occur, along with increased frequency of micturition.
- **Guarding and rigidity** of the back and abdominal muscles during severe attack of pain.

COMPLICATIONS ⁽²⁾

1. Calculous hydronephrosis occurs due to back pressure producing renal enlargement. Stretching of the renal capsule results in pain. In such cases, an associated palpable kidney mass suggests hydronephrosis.
2. Calculous pyonephrosis: Infected hydronephrosis where in the kidney is converted into a bag of pus.
3. Renal failure: Bilateral staghorn stones may not be symptomatic until they present with uraemia and renal failure.
4. Squamous cell carcinoma: Long-standing stones increase the risk of carcinoma.

INVESTIGATIONS ⁽²⁾

1. **Radiography** – plain x-ray (KUB) helps to diagnose 90% of renal stones. It can be visualized as an opacity which overlies the urinary tract and keeps a relatively constant position during respiration. Enlarged renal shadow can also be made out.
2. **Intravenous Pyelography Or Excretory Urography** – This helps to locate the stone exactly in relation to kidney & ureter & to assess renal function. A radiolucent stone can be seen as a filling defect. Hydronephrosis can also be made out.
3. **Ultrasonography** – is the most valuable to diagnose the stone, its size & exact location. It also confirms the enlarged kidney.
4. **Urine Culture & Sensitivity** – Examination of urine for protein, R.B.C, W.B.C, micro organisms reveals abnormalities of urinary tract, infection etc.
5. **Investigation Of Renal Function** – Blood examination for urea, creatinine, creatinine clearance etc to rule out renal failure.
6. **Investigation To Determine Underlying Causes** – plasma calcium, phosphate, parathormone, plasma urate, 24 hour urine urate, cystine & oxalate & calcium.

7. **Stone Analysis** – analysis of any stone that has been passed.

TREATMENT (2)

In nonoperative treatment small stones less than 5 mm in size pass off with intake of copious amount of fluids and at times forced diuresis. Intravenous hydration followed by intravenous frusemide may help pass the stones spontaneously.

HOMOEOPATHIC MANAGEMENT (4)

1. Berberis Vulgaris

Renal colic < left side. Stitching, cutting pain from left kidney following course of ureter into bladder & urethra. Burning & soreness in region of kidneys. Pain in small of back, very sensitive to touch in renal region <when sitting & lying, from jar, fatigue. Numbness, stiffness & lameness with painful pressure in renal & lumbar regions. Bubbling sensation in kidneys. Urine greenish, blood red, with thick, slimy mucus, transparent, reddish or jelly like sediment. Rheumatic & gouty complaints with urinary diseases. < motion, any sudden jarring movement, walking, carriage riding.

2. Cantharides

Constant urging to urinate, passing but a few drops at a time, which is mixed with blood. Intolerable urging before, during & after urination. Violent paroxysms of cutting & burning in whole renal region. Violent tenesmus & strangury. Urine scalds him & is passed drop by drop. Membranous scales looking like bran in water. Urine jelly like, shredy. Pain raw, sore, burning in every part, internally & externally. Over sensitiveness of all parts. Drinking even small quantities of water increases pain in bladder.

3. Lycopodium

Renal colic, right sided. Pain shooting across lower abdomen from right to left. Pain in back relieved by urinating. Urine slow in coming, must strain. Retension. Polyuria during night. Red sand in urine. Uric acid diathesis. Child cries before urinating. Pains drawing, aching < 4-8 pm. Upper part of the body emaciated, lower part semidropsical. Ailments from fright, anger, mortification, reserved displeasure.

Avaricious, greedy, miserly, malicious, pussilanimous. Excessive accumulation of flatulence, lower abdomen. > warm food & drinks.

4. Sarsaparilla

Passage of small calculi or gravel, renal colic, stone in the bladder. Excruciating pains from right kidney downwards. Severe almost unbearable pain at conclusion of urination. Urine bloody, scanty, slimy, flaky, sandy, copious, passed without sensation, deposits white sand. Painful distension & tenderness in bladder, urine dribbles while sitting passes freely when standing. Air passes from urethra, child screams before & while passing urine.

5. Nux vomica

Renal colic, right sided. Pain extends to the right thigh & to the genitals. Frequent ineffectual urge for urination with dribbling of urine. Haematuria, strangury. While urinating, itching in urethra & pain in neck of bladder. Backache, must sit up or turn over in bed. Adapted to thin, irritable, zealous, nervous, literary, studious, responsible persons. Bad effects of coffee, tobacco, alcohol, highly spiced food, overeating, long continued mental exertion. Over sensitiveness to all external impressions. Frequent ineffectual urging for stool.

6. Ocimum canum

Renal colic, right sided. Uric acid diathesis. Red sand in urine. High acidity, formation of spike crystals of uric acid. Turbid, thick, purulent, bloody, brick dust red or yellow sediment. Odour of musk. Pain in ureters, cramps in kidneys.

7. Belladonna

Violent spasmodic pains in kidney region especially of the right side. Pain comes suddenly, last indefinitely & cease suddenly. Pains usually in short attacks. Redness of eyes & face, throbbing of brain & carotids. Abdomen tender, distended, < least jar, even of the bed, slight noise, light, lying down. > pressure, tight bandaging, wrapping up. Bilious lymphatic plethoric constitutions.

8. Colocynth

Pains on urinating over whole abdomen. Vesical catarrh, discharge like fresh white of egg. Red hard crystals. Renal colic < left side. Agonising pain in abdomen causing

patient to bend double, with restlessness, twisting & turning to obtain relief. > hard pressure. Pains < eating & drinking > warm application. Shooting pains like electric shocks. Complaints from anger, indignation, mortification.

9. **Pareira brava**

Renal colic, pain going down the thighs. Neuralgic pain in the anterior crural region. Constant urging, great straining. Can emit urine only when he goes on his knees, pressing head firmly against floor. Black, bloody, thick mucus urine. Dribbling after micturition. Urethritis, prostatitis.

10. **Benzoic Acid**

Excess of uric acid in urine. Urine high coloured, urinous odour highly intensified. Dark brown, highly offensive. Gonorrheal & syphilitic patients. Pain suddenly change their locality. Rheumatism & gout.

RENAL CALCULI IN KENT'S REPERTORY ⁽⁵⁾

URINE-SEDIMENT-renal calculi- Bell., **Benz-ac.**, *berb.*, **Calc.**, *canth.*, *coc-c.*, *coloc.*, *equis.*, *hydrang.*, **Lith.**, **Lyc.**, *mill.*, *oci.*, **Pareir.**, *phos.*, **Sars.**, *sil.*

ACCORDING TO R.P.PATEL'S MIASMATIC REPERTORISATION ⁽⁶⁾

1. Chapter : BLADDER

- Pain :

Extending to kidney – Psora

Extending to spermatic cords- Psora

Extending to thighs – Psora

Extending to uterus – Psora

- Pain :

Burning, Urination before – Psora

Burning Urination during – Psora

Burning Urination after – Psora

- Retention of urine :

Retention Dribbling with – Psora sycosis

- Urination, Dysuria:

Aching in back with – Psora Sycosis

Painful child cries before urine starts – Psora Sycosis

Painful, close of urination - Psora Sycosis

2. Chapter : KIDNEY

- Pain extending to abdomen – Psora

To bladder – Psora

To thighs – Psora

To Testes – Psora

- Pain region of extending downwards – Psora

Thigh – Psora

Groin, anxious nausea with – Psora

3. Chapter : URETHRA

- Pain Burning urination before – Psora Sycosis

4. Chapter :URINE

- Bloody – Psora
- Sediments renal calculi
- Sediments sand gravel (small calculi) – Psora Sycosis

5. Chapter :BACK

- Pain

Lumbar region

Urination before - Psora

Urination during - Psora

Urination, after - Psora

Extending to abdomen around – Psora

Extending to thighs – Psora

RENAL CALCULI is having predominantly **PSOROSYCOTIC** miasmatic background.

PREVENTION ⁽⁷⁾

Preventative measures depend on the type of stones. Dietary recommendations to minimize the formation of kidney stones include

- Increasing total fluid intake to more than two liters per day of urine output
- Limiting cola, including sugar-sweetened soft drinks; to less than one liter per week.
- Limiting animal protein intake to no more than two meals daily.

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