



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Clinical Spectrum of Pediatric Renal Stone Disease in Children Aged 1 Month to 18 Years in an Urban Referral Centre- a Descriptive Study from a Low & Middle Income Country.

Karthigeyan Thiagarajan¹, Shaik Malik¹, Kalaivani Ganesan², Nedunchelian K¹

¹Department of Pediatrics, Department Of Pediatrics, Mehta Multispeciality Hospitals India Pvt. Ltd, India., India

²Department of Pediatrics-Nephrology, Department Of Pediatric Nephrology, Mehta Multispeciality Hospitals India Pvt. Ltd, India., India

Objectives : To understand the clinical spectrum and epidemiology of renal stone disease in children aged between 1 month to 18 years. Renal stone disease is a medical condition that is caused by the presence of high concentration of mineral deposits leading to formation of stones in the kidneys and urinary tract. Ninety percent of stones contain calcium as a single major component. Risk factors include preterm birth, nephrotoxic drugs, malabsorption.

Methods : This descriptive study was done between January 2024 to April 2025, enrolled 50 children aged between 1 month to 18 years. Inclusion criteria - symptomatic or incidental renal stone; exclusion criteria - neonates and immobilised children. Data were taken from OPD/ IPD records. Assessments include Urinalysis, spot urine calcium/ creatinine ratio, serum electrolytes, renal function tests and USG KUB. All enrolled children underwent 24 hour urine metabolic workup (gold standard) - calcium, oxalate, citrate, uric acid . Analysis done using SPSS 22 (means $\pm$ SD, chi square test, $p < 0.05$). One year follow up was done to look for treatment compliance, response and recurrence.

Results : Mean age of presentation was 8.73 ± 5.19 years; peak age group 10-18 years; Male:Female ratio 2.57:1, with male predominance. Clinical presentations: Incidental finding (28%), Abdominal pain (26%), Febrile UTI (22%). Positive Family history was noted in 58%. 64% of cohorts were on Non vegetarian diet. Urinary metabolic workup showed hypercalciuria (52%), hypocitraturia (26%), hyperoxaluria (10%), Hyperuricosuria (2%). Biochemical evaluation showed hyperuricemia (20%), metabolic acidosis (20%), metabolic alkalosis (8%), hypercalcemia (4%). Thirteen children (26%) underwent surgical intervention.

Conclusions : In our study Hypercalciuria is the most common cause of renal stone disease, with diverse presentations. All children received adequate fluids, urinary alkalinisation, food restriction, with etiology specific management (Thiazides, Allopurinol, Pyridoxine) and few children required surgical intervention.

RSD Fig 1.png



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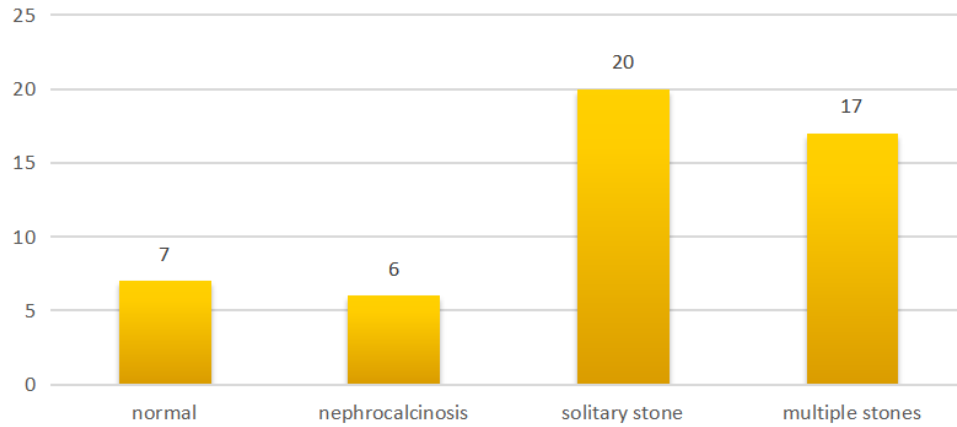
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RSD Fig 1.png

SURGICAL INTERVENTION

