Vision of Nephrology

Clinical Image

Familial medullary nephrocalcinosis detected on X-ray in a diabetic female with lithuria, hypocalcemia, and hypomagnesemia

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Received: November 11th, 2025; **Accepted:** November 19th, 2025; **Published:** November 20th, 2025

Citation: Harish Prabhu, Madhuri H. Familial medullary nephrocalcinosis detected on X-ray in a diabetic female with lithuria, hypocalcemia, and hypomagnesemia. *Vis Nephrol.* 2025; 1(1): 001-002.

Keywords: Medullary Nephrocalcinosis; Hypocalcemia; Hypomagnesemia; Diabetes Mellitus; Lithuria

Introduction

We report the case of a 42-year-old obese female with type 2 diabetes mellitus, hypertension, and hypothyroidism who presented with abdominal pain and recurrent urinary tract infections. Laboratory evaluation revealed elevated serum creatinine (216 µmol/L), hypocalcemia, low serum magnesium, vitamin D deficiency, and lithuria on urinalysis. Serum phosphate and bicarbonate were within normal limits. A plain abdominal radiograph (KUB) demonstrated bilateral fine punctate calcifications in the renal medullary pyramids, consistent with medullary nephrocalcinosis. Notably, two of her sisters exhibited similar radiographic findings, suggesting a familial etiology. No evidence of metabolic acidosis or hyperparathyroidism was identified. The patient was managed conservatively with mineral supplementation, metabolic optimization, and prophylaxis for recurrent urinary tract infections.

Medullary nephrocalcinosis represents the deposition of calcium salts within the renal medulla, most often involving the interstitium and collecting tubules of the pyramids [1]. Radiologically, it typically presents as punctate or linear calcifications on plain X-ray, with CT being more sensitive in early stages [2]. Etiologies include hyperparathyroidism, distal renal tubular acidosis, medullary sponge kidney, chronic hypercalcemia, and inherited tubulopathies [3]. The condition may be asymptomatic or present with flank pain, hematuria, or recurrent urinary tract infections, and it can predispose to progressive renal impairment and stone formation [4]. Early recognition and evaluation of underlying causes are crucial to prevent long-term renal damage [5].

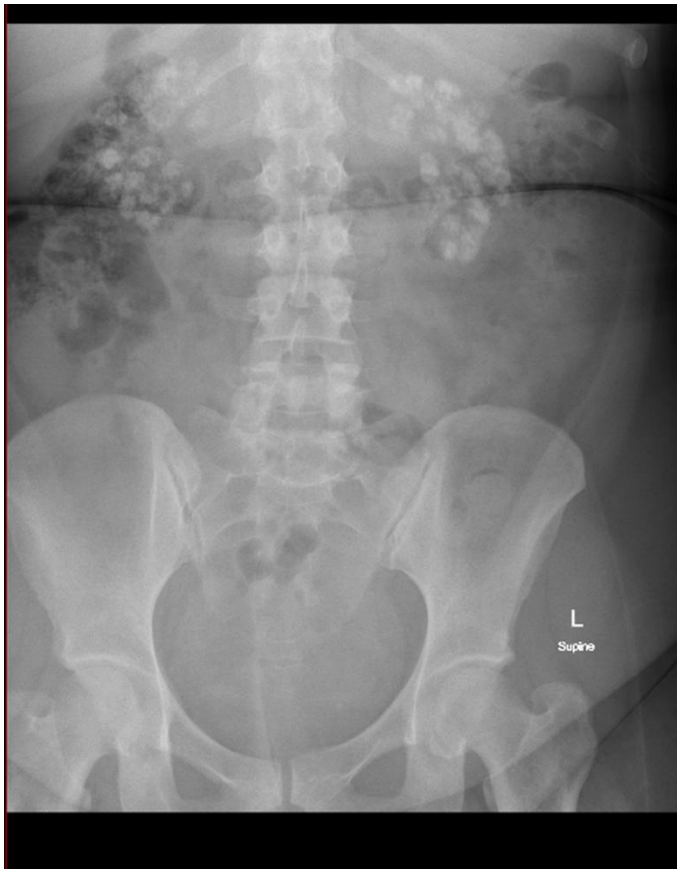

Figure 1: X Ray showing bilateral fine punctate calcification in Renal Medullary pyramids.

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