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Medullary Nephrocalcinosis as a Rare Complication of Hyperparathyroidism

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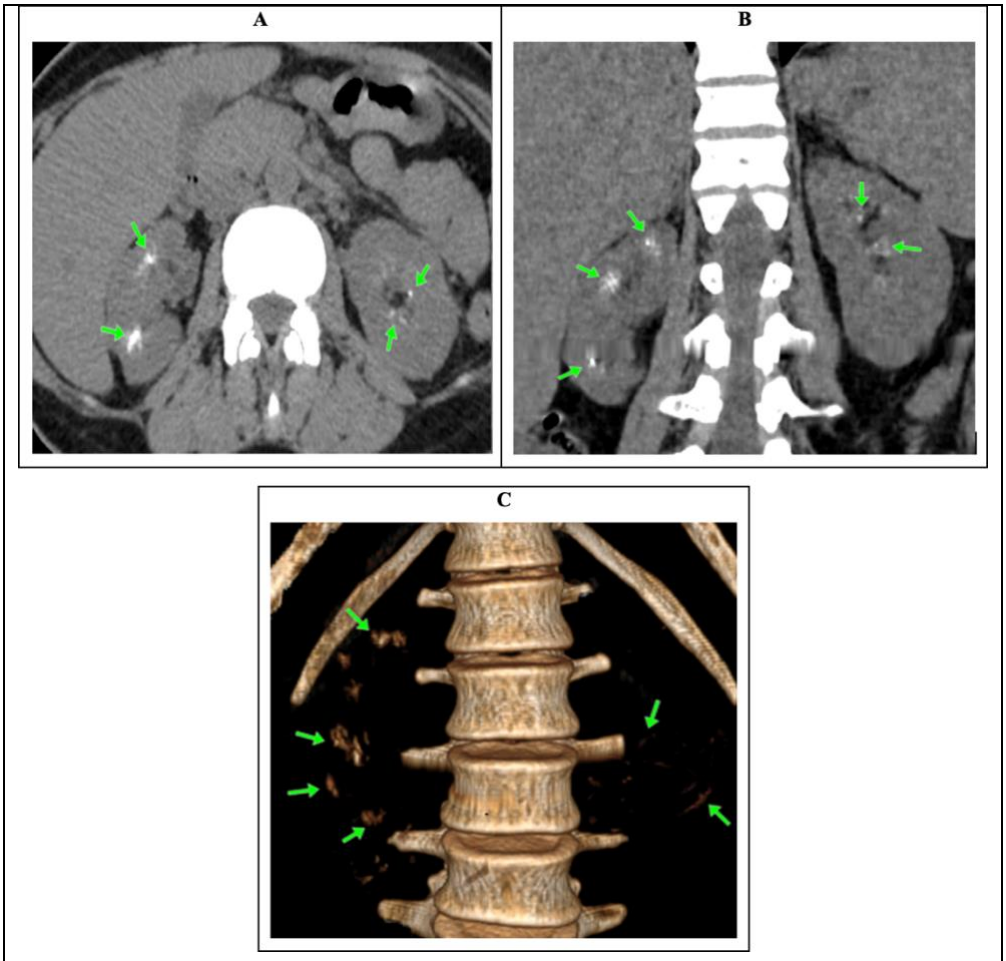

Figure 1: Abdominal CT scan without injection of contrast in parenchymal window (A and B) and volume reconstruction (C) showing bilateral renal medullary calcifications (green arrows) without involvement of the excretory tracts: this is medullary nephrocalcinosis.

Clinical Image

A 28-year-old woman recently diagnosed with primary hyperparathyroidism following parathyroid carcinoma. A thoracic-abdominal-pelvic CT scan performed as part of the extension work-up revealed medullary nephrocalcinosis manifested as calcifications of the renal medulla (Figure 1) without involvement of the excretory cavities.

Discussion

Nephrocalcinosis is a rare disorder caused by calcium deposits in the renal parenchyma. Medullary form is the most common, accounting for 90% of all nephrocalcinosis. Often asymptomatic and discovered by chance, sometimes non-specific symptoms such as haematuria, polyuro-polydipsic syndrome, dysuria, abdominal pain, urinary incontinence, urinary tract infections and isolated leucocyturia come to the fore [1]. Renal colic is rarely the first symptom, except in the case of primary hyperoxaluria or chronic hypercalciuria. Although nephrocalcinosis may be indicative of renal lithiasis, it should be distinguished from isolated renal calculi, which only affect the excretory tract without affecting the renal parenchyma. Renal function is generally normal at the onset, but slowly progressive renal failure may develop depending on the course of the nephropathy and the disease in cause [2]. Medical imaging plays a major role in the detection of nephrocalcinosis, and Ultrasound is the first-line examination, showing a reversal of cortico-medullary differentiation with abnormal hyperechogenicity of the pyramids [3]. Shadow cones are rarely visible except in extreme cases, such as oxaluria, or when it is associated with intracalcific calculi. If there is any doubt about the nature of the hyperechogenicity, a CT scan without injection is more specific in diagnosing nephrocalcinosis, confirming calcium deposition in the renal tubule. Several pathologies may be responsible for medullary nephrocalcinosis, including: hyperparadyroidism, renal tubular acidosis, sponge kidney, hypervitaminosis D, granulomatosis and papillary necrosis. There is no treatment to eliminate calcium deposits from the kidney, but the spread of calcifications can be slowed by acting on the causative pathology [2].

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