

A typical Depiction of Renal Nephrocalcinosis Reflecting the Superiority of Ultrasound to Computed Tomography

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Abstract

Nephrocalcinosis is defined by calcium phosphate or calcium oxalate deposits in the kidney parenchyma, particularly in tubular epithelial cells and interstitial tissue. It should be differentiated from nephrolithiasis where calcium salts deposits are located in the kidney and urinary tract. We report a case of a 5 years old child with history of hypoparathyroidism of recent discovery, and the clear upper hand that ultrasound had in the assessment of medullary nephrocalcinosis in patients with metabolic disorders.

Keywords: Nephrocalcinosis; Ultrasound; Children; Imaging modalities

Image Article

A renal calcifying disorder generally includes two entities: nephrocalcinosis and nephrolithiasis. In addition to their difference in location, nephrolithiasis may occur in healthy individuals while nephrocalcinosis suggests an underlying genetic or metabolic-endocrine disorder, such as hypoparathyroidism often detected as an incidental finding as reflected in our case, nephrocalcinosis may be classified according to the radiological type: medullary, cortical or diffuse. [1]

Unlike nephrolithiasis, nephrocalcinosis is asymptomatic, and may progress to renal insufficiency. Early diagnosis is important because therapeutic interventions may stabilize, slow or, rarely, reverse disease.



Figure 1: Transversal US image of the left kidney showing clear hyper echoic lesions on the medulla.

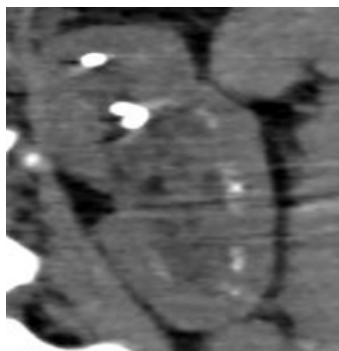


Figure 2: Coronal non enhanced CT image of the left kidney revealing lithiasis on the superior region of the kidney in addition to diffuse mild hyper density spread across the medulla.

Therefore surveillance in high-risk patients is a crucial component of management. Diagnostic imaging for nephrocalcinosis includes radiographs, computed tomography (CT), and ultrasonography (US). Radiographs are insensitive due to poor delineation of renal anatomy and confounding by bowel gas. CT offers superior contrast resolution and definition of anatomic structures and is the gold standard for nephrolithiasis ultrasound however offers a higher sensitivity in term of early diagnosis of mild and moderate nephrocalcinosis compared to the CT [2] (Figures 1 and 2).

References

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