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Nephrocalcinosis – An Overview

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Once termed as 'Albright's Calcinosis', Nephrocalcinosis is a condition that is characterised by the deposition of calcium in the renal parenchyma and tubules. This term is used when there is deposition of either calcium oxalate or calcium phosphate [1]. While the term 'Oxalosis' refers exclusively to Calcium oxalate deposition, Nephrocalcinosis includes both calcium oxalate and calcium phosphate deposition in the renal parenchyma.

This form of renal calcification may occur at molecular, microscopic or at macroscopic level, resulting in a progressive deterioration of renal function [2]. Depending on the location, it may be either cortical or medullary Nephrocalcinosis.

A common reason for nephrocalcinosis is an increased urinary calcium excretion with or without hypercalemia [3]. However, any calcium deposition at the sites of focal renal injury cannot be included in this definition [4].

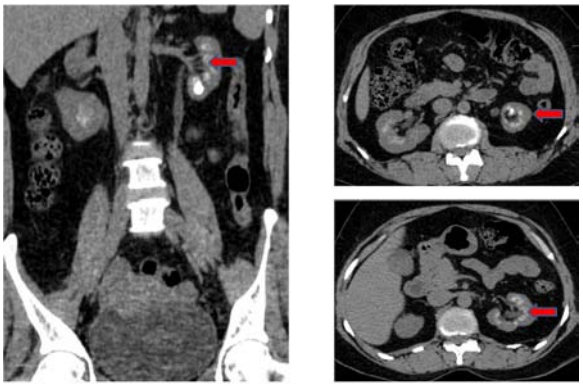

Figure 1: Shows an extensive calcification in the region of the Renal medulla.

In medullary nephrocalcinosis, small nodules of calcification are clustered in each pyramid, which grow and rupture through the papillary endothelium into the calyceal system and become urinary stones (Figure 1). The calcifications can sometimes grow and shed off from the papilla into the pelvi-calyceal system and for a urinary calculus (Figure 2).

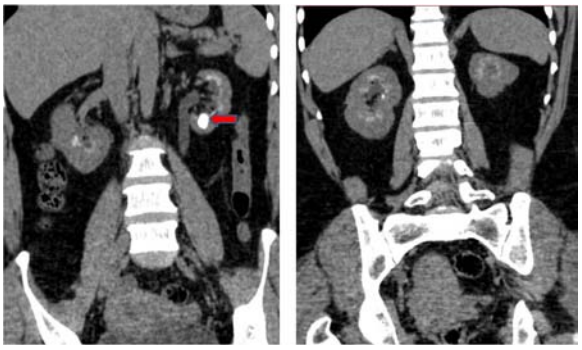

Figure 2: Shows a large calculus in the lower pole of the left kidney.

Primary hyperparathyroidism, Type 1 Renal tubular acidosis, Hypervitaminosis, Milk Alkali syndrome, Sarcoidosis, Medullary Sponge kidney are the common causes for Nephrocalcinosis. Of these, Primary hyperparathyroidism has been associated with a four-fold increased prevalence of asymptomatic renal stone disease [5].

Prognosis in these patients depends entirely on the aetiology of Nephrocalcinosis. One of the significant complications of this condition is a progressive renal failure. Early and appropriate treatment of reversible causes of renal failure like stones, infection and hypertension would lead to a significant improvement in overall clinical outcome.

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