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Bone Marrow Oxalosis: Crystal Flowers in the Bone Marrow Garden

Mallik and Updesh Singh Sachdeva. Bone marrow oxalosis

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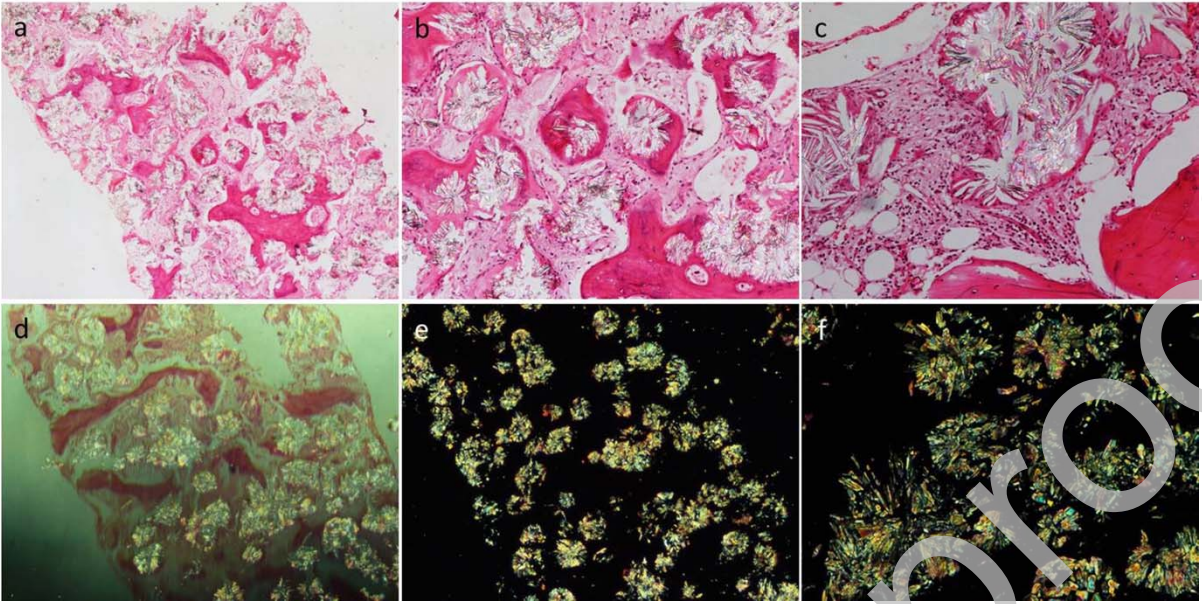
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A 20-year-old male, known case of chronic kidney disease, was diagnosed to have nephrolithiasis at the age of 8 months. Since then, he had recurrent renal stones leading to end stage renal disease and was planned for renal transplant. CT scan showed bilateral small kidneys, with right sided nephrolithiasis. Complete blood counts revealed hemoglobin level of 70 g/L, white cell count of $8.1 \times 10^9/L$, and platelet count of $395 \times 10^9/L$. Bilateral bone marrow biopsies were performed to investigate the cause of persistent anemia, and one of the cores showed replacement of bone marrow with extensive interstitial and paratrabeular deposition of crystals accompanied with fibrosis {Figures 1a(x100), 1b-c(x400)}. The crystals appeared translucent, rod-shaped and were arranged in a rosette-like pattern. They were birefringent under polarized light, consistent with calcium oxalate crystals {Figures 1d-e(x100), 1f(x400)}. Systemic oxalosis results in the deposition of calcium oxalate crystals mainly in the myocardium, cardiac conduction system, kidneys, bones or bone marrow [1]. This case demonstrates that although bone marrow examination may not be a routine modality for diagnosis of hyperoxaluria, it should definitely be considered in young patients with renal failure and childhood recurrent nephrolithiasis who present with cytopenias/refractory anaemia.

References

1. Sriram K, Kekre NS, Gopalakrishnan G. Primary hyperoxaluria and systemic oxalosis. Indian J Urol. 2007;23(1):79-80.



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