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Bone Marrow Oxalosis: Crystal Flowers in the Bone Marrow Garden

Mallik and Updesh Singh Sachdeva. Bone marrow oxalosis

Nabhajit Mallik, Man Updesh Singh Sachdeva

Postgraduate Institute of Medical Education and Research, Department of Hematology, Chandigarh, India

Man Updesh Singh Sachdeva, M.D., Postgraduate Institute of Medical Education and Research, Department of Hematology, Chandigarh, India
drmanupdeshpgi@yahoo.co.in
0091-9815802080

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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 x 10^9/L, and platelet count of 395 x 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 paratrabecular 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

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