Oxalate deposition in tissues

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An 11-year-old boy was found to have primary hyperoxaluria type I (urine oxalate 828 mg/l, N 140–420 mg/l). His mother had kidney stones and the parents were second degree relatives. After 18 months of dialysis, femoral neck fracture occurred, which was assumed to be related to renal osteodystrophy. During the surgical procedure to fix the fracture site internally, biopsies were taken which showed fibrosis and histiocytic reaction with multinucleated foreign body macrophages (Figure 1). Under polarized light microscopy birefringent oxalate crystals were detected (Figure 2).

In oxalosis, oxalate deposits are mainly found in the heart and in smooth muscle cells of vessels and other organs [1,2]. Bone involvement in our patient presumably started in the rich vascular network of the bone marrow and finally, with a component of renal osteodystrophy, led to a pathological fracture. Severe oxalate bone disease appears to be the...
consequence of the granulomatous reaction induced by oxalate deposition.

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References


Fig. 2. Under polarized light prominent crystalline material deposition can be seen leading to a diagnosis of oxalate deposition bone disease (haematoxylin and eosin, ×100).