

Amyloid Arthropathy: A Rare Mimic of Rheumatic Disease

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Amyloidosis is characterized by infiltrative deposition of amyloid into tissues¹. Deposition into articular and periarticular spaces can result in amyloid arthropathy and can mimic rheumatic conditions such as gout or rheumatoid arthritis².

A 79-year-old man with known type 2 diabetes, hypertension, chronic kidney disease (CKD) of unknown etiology, and monoclonal gammopathy of unknown significance, was admitted to hospital for worsening renal function with gross hematuria and creatinine 329 $\mu\text{mol/l}$ (estimated glomerular filtration rate 15 ml/min/1.73m^2). While admitted, he fell and injured his left wrist. A computed tomography (CT) scan was negative for fracture but demonstrated unexpected extensive subchondral cysts (Figure 1) initially thought to be consistent with the punched-out lesions seen in crystal arthropathies. However, the patient had no history of gout flares, and uric acid and dual energy CT were normal. Investigations for

other rheumatic conditions were negative (normal anticyclic citrullinated peptide antibodies, rheumatoid factor, C-reactive protein, and erythrocyte sedimentation rate), with otherwise normally presenting laboratory test results.

CKD evaluation demonstrated elevated κ light chains, which led to both bone marrow and renal biopsies that demonstrated positive staining with Congo red, consistent with amyloid light-chain (AL) amyloidosis (Figure 2).

Retrospective review of the wrist imaging in the context of AL amyloidosis revealed that the CT findings were most consistent with amyloid arthropathy. The typical radiographic features include juxtaarticular soft tissue swelling, periarticular osteoporosis, and subchondral cystic lesions with well-defined sclerotic and cortical margins, as seen in this case³. The arthropathy is progressive and commonly found in the shoulders, knees, and wrists⁴.

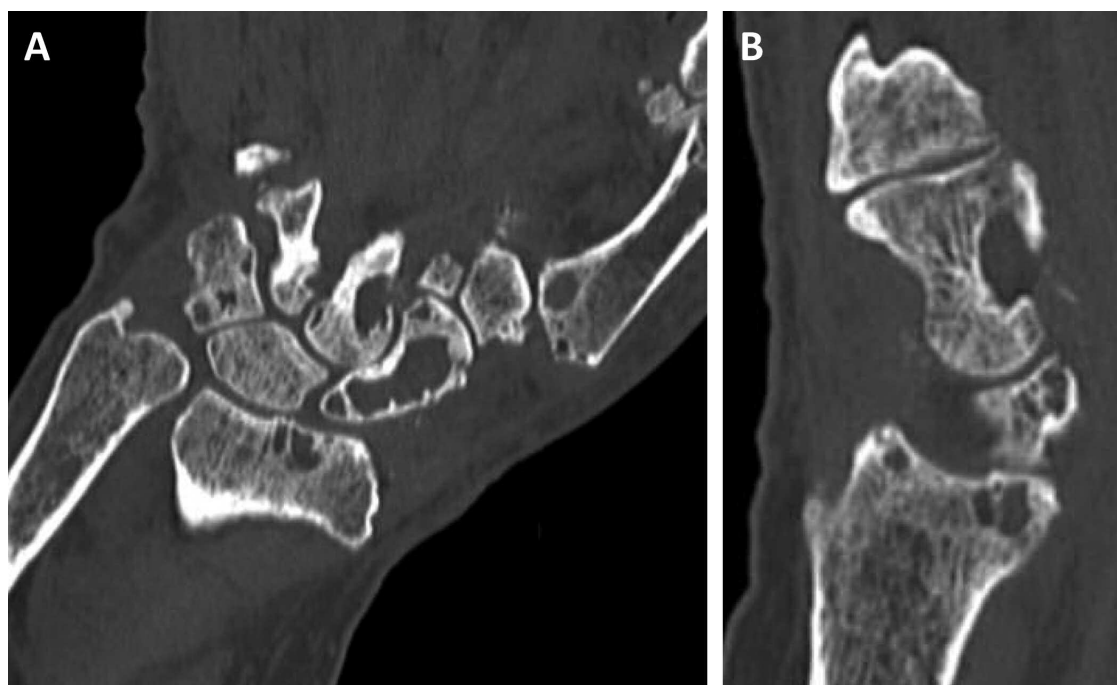


Figure 1. Computed tomography scan with (A) left wrist sagittal and (B) axial views. Extensive subchondral cyst formation throughout the carpus, distal radius, and carpometacarpal joints, most pronounced at the first carpometacarpal joint.

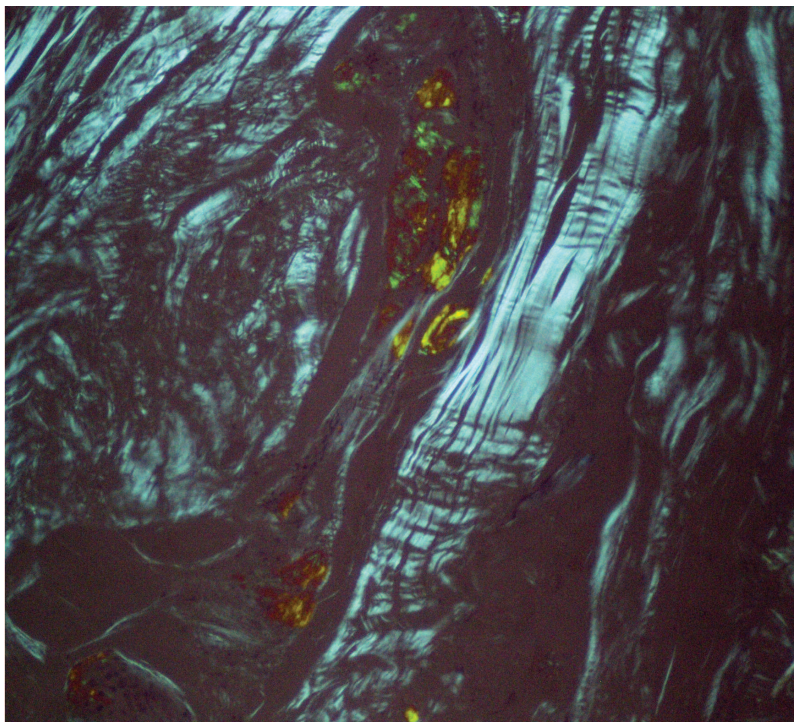


Figure 2. Congo red stain under polarizing light microscopy of the bone marrow trephine biopsy. Strongly positive apple green birefringence of amyloid deposits in a bone marrow vessel wall.

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