

IMAGES IN CLINICAL RADIOLOGY



Amyloid arthropathy in a dialysis patient

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The patient was a 66-year-old man who had undergone hemodialysis for 20 years. He had suffered from right hip pain for several months. He could stand, but his walking endurance was poor. Plain radiograph of the right hip showed osteoporotic change. T1-weighted (Fig. A) and T1 inversion recovery MRI images (Fig. B) of bilateral hips showed low-signal-intensity thickened synovium (long arrows) causing osseous erosion at the 'bare areas' of bilateral proximal femur which is unprotected by articular cartilage. The femoral bone marrow lesions (short arrows), in contrast, are hyperintense signal on T1 inversion recovery image. Dialysis-related amyloidosis was the impression. Follow-up laboratory tests revealed elevated serum beta2 microglobulin levels (21.4 mg/L; reference range, 0.6 to ~2.4 mg/L). The patient's treatment was changed to four-hour dialysis, using high-flux cellulose-derived dialysis membranes, at a low blood-flow rate (200 mL/min) in order to remove greater quantities of beta2-microglobulin. The patient's walking endurance improved gradually.

Comment

The clinical prevalence of DRA in patients undergoing dialysis is zero after five years of dialysis, increasing to approximately 50% at 12 years and to almost 100% at 20 years (1). The typical MRI finding is a large erosion filled with mixed low- and high-signal-intensity material on fluid-sensitive sequence images and without blooming artifact on gradient echo images. The hip and shoulder are the most commonly affected joints. In our patient, the periarticular low-signal-intensity synovium is due to deposition of amyloid tissue, which is lack of blood circulation. The osseous high-signal-intensity lesions shown on T1 inversion recovery image may suggest inflammation with active hyperemia. If diagnosis and treatment are delayed, the cystic lesions, which contain amyloid, will enlarge with time, and may be associated with pathologic fracture of the femoral neck.

Competing interests

The authors state that they have no Conflict of Interest (COI).

Reference

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