Acro-Osteolysis of the Big Toe in a Patient with Psoriatic Arthritis

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A 49-year-old man with psoriasis was referred for pain at both first metatarsophalangeal (MTP) joints that had first developed at 20 years of age. Examination revealed swelled big toes and severe psoriatic onychodystrophy, but no axial involvement. Rheumatoid factor, anti-cyclic citrullinated peptide and antinuclear antibodies were normal. HLA evaluation revealed B13, Cw6, and B27 antigens. Foot radiograph showed bilateral acroosteolysis of terminal phalanx of big toe with normal MTP joint (Figure 1). Magnetic resonance imaging (MRI) demonstrated increased signal, consistent with edema, of the terminal phalanx of the right big toe and subtle edema of adjacent soft tissue (Figure 2).

Association of psoriatic onychopathy and big toe soft tissue thickening with exuberant osteoperiostitis of distal phalanx, known as onychopachydermoperiostitis, is well described[1,2]. It may be due to inflammation involving nailbed and subungueal dermis with spreading to the terminal phalanx through extensor tendon enthesis[1].

Destructive resorption of terminal phalanges (acroosteolysis) associated with both big toe swelling and psoriatic onychopathy is extremely rare and its pathogenesis is unclear[3]. Erosive changes in the feet of patients with psoriatic arthritis usually involves the interphalangeal and MTP joints and are associated with bone proliferation[4]. Acroosteolysis similar to that in our report has been described in disorders where ischemic damage or hyperparathyroidism secondary to vitamin D deficiency may represent pathogenic mechanisms[5]. However, neovascularization, secondary to inflammation, is an important component of the erosive nature of psoriatic arthritis, and the bone edema documented by MRI may suggest that chronic inflammation plays a key role in leading to this destructive lesion.

Figure 1. Radiographs of the feet showing resorption of the tuft of the distal phalanx of both big toes.

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Figure 2. Fat-suppressed T2-weighted MRI scan demonstrating increased signal, consistent with edema, of the terminal phalanx of the right big toe (arrow) together with subtle edema of adjacent soft tissue (arrowhead).