

Progression from non-erosive to erosive form of hand osteoarthritis. A report of two cases

Sirs,

Hand osteoarthritis (HOA) is a common musculoskeletal disorder that affects the proximal (PIP) and distal (DIP) interphalangeal joints, and the carpometacarpal joint of the thumb (1). A minority of patients, mainly middle-aged women, may present the so-called erosive form (erosive HOA, EHOA). This form is diagnosed when, in addition to the fulfillment of the ACR clinical criteria, patients show radiographic features of erosions with "gull-wing" or "saw tooth" characteristic radiographic appearances (2). There are no clinical data as to whether erosive and non-EHOA are two different subsets of disease or two stages of the same disorder. Here we describe the radiographic progression in two patients from non-EHOA to EHOA. Neither patient had any family or personal history of psoriasis; inflammatory markers were normal; rheumatoid factor, anti nuclear and anti CCP antibodies were negative. Hand radiographs obtained from patients were graded according to the Kellgren and Lawrence (K-L) and Kallman methods (3, 4).

Case 1. A 55-year-old woman presented tenderness and hard tissue enlargement of some DIP and PIP joints. Hand x-ray performed in 2000 showed non-EHOA with a low radiological grading. In 2005, repeated radiographs of both hands showed a disease progression from non-erosive to an erosive disease and deteriorated radiological indexes. The last radiological follow-up (in 2007) evidenced further worsening of both scores (Fig. 1).

Case 2. A 57-year-old woman with an 11-year history of symptomatic HOA. Clinically, she presented Heberden's nodes. Hand x-rays performed in 1999, 2003 and 2007 showed a gradual disease progression with the appearance of typical features of

EHOA; radiological scores over time were the following: K-L of 30, 40 and 50; Kallman of 77, 98 and 120.

Up to now, inconsistent data have been reported on the evolution of non-EHOA. Harris *et al.* have surveyed the radiological deterioration of patients with HOA in a follow-up study over ten years, but they did not describe the appearance of erosions (5). Rovetta *et al.*, studied a population over two years affected by EHOA and described a significant worsening in the existing erosions (6).

Finally, Verbruggen *et al.* observed in a 3-year follow-up study, with radiographs taken every year, that 15.2% (7 of the 46 patients) of subjects with non-EHOA at study entry, progressed to the erosive phase. This data has allowed them to assume that EHOA represents an episode in the evolution of HOA, rather than a separate form of disease (7).

In recent years novel imaging techniques, especially MRI and ultrasound investigation, were demonstrated to be more sensitive in bone erosion detection than conventional radiology in rheumatoid arthritis patients (8).

As far as HOA is concerned, a higher sensitivity for bone erosions has been demonstrated only for MRI. Indeed, MRI has shown that erosions in HOA are a more common feature than previously thought utilizing conventional techniques (9).

With the follow-up study of our patients we confirmed the possibility of a transition from non-erosive to "classical" erosive form of HOA utilizing only conventional radiology.

A prospective study utilizing MRI or US (10) is warranted in order to evaluate whether MRI detected bone erosions precede the appearance of x-ray detectable central erosions.

Therefore, the use of more sensitive techniques will allow us to definitely determine whether EHOA is a discrete subset with specific risk factors and pathogenesis, or a more severe state of HOA which appears

in a proportion of patients, yet to be determined, either under genetic and/or environmental factors.

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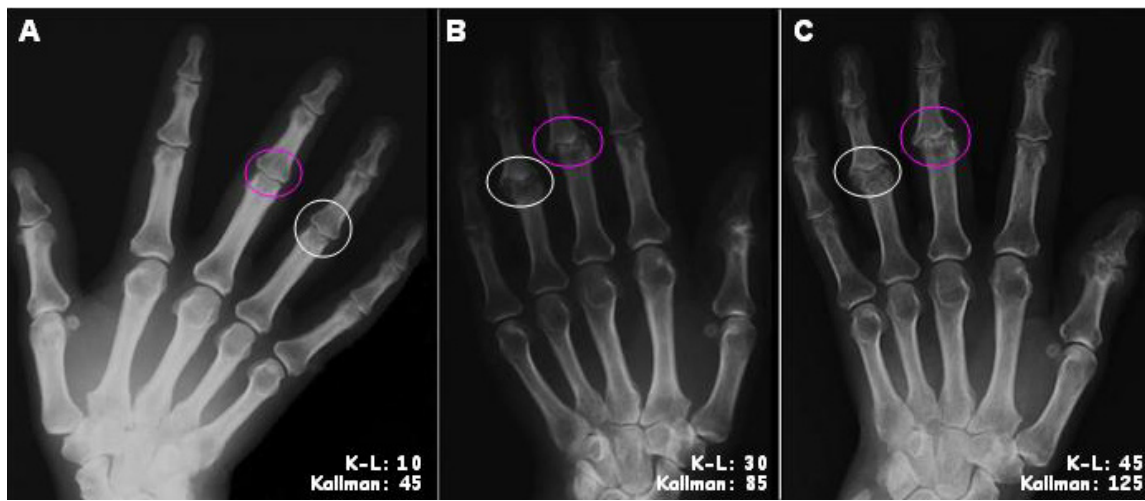


Fig. 1. Radiological progression from non-EHOA to EHOA of the third and fourth proximal interphalangeal joints of the right hand of case 1 and the correspondent Kellgren-Lawrence (K-L) and Kallman scores (A, 2000; B, 2005; C, 2007).