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## Ultrasonographic Assessment of Early Bone Erosions in Addition to Soft-Tissue Changes in Rheumatoid Arthritis

*Romatoid Artritte Yumuşak Doku Değişikliklerine İlaveten Erken Erozyonların Ultrasonografik Değerlendirilmesi*

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### To the Editor;

A 55-year old male presented to the outpatient clinic with painful swelling and morning stiffness in both wrists and finger joints which had started 6 weeks ago. The morning stiffness in both hands and wrists lasted for up to 2 hours and improved with activity. Detailed questioning revealed no significant past medical history. On physical examination, there was deformity and swelling on the wrists and hands. Soft-tender swellings were determined in the metacarpophalangeal (MCP) and proximal interphalangeal joints of the second through fifth digits of both hands. The serum C-reactive protein (CRP) level, anti-CRP level and erythrocyte sedimentation rates (ESR) were increased (CRP=68 mg/L; ESR=87 mm/h; anti-CRP=364 UI/mL). Rheumatoid factor levels were within the normal ranges. The leukocyte count, hepatitis markers, anti-nuclear antibodies, anti-dsDNA were also normal. Antero-posterior hand and wrist radiographs showed soft tissue swelling without erosion (Figure 1a). Longitudinal (Figure 1b) and axial (Figure 1c) ultrasound (US) images showed effusion, and cortical bone erosion on the radial side of the 2<sup>nd</sup> MCP joint (arrow).



**Figure 1.** Anteroposterior hand&wrist radiograph showing soft-tissue swelling without erosion (A), longitudinal (B) and axial, (C) ultrasound image cortical bone erosion on radial side of the 2<sup>nd</sup> metacarpophalangeal joint (arrow)

Structural damage in rheumatoid arthritis begins at a very early stage of the disease. In daily clinical practice, although conventional radiography is the most common imaging tool adopted for detecting and scoring joint damage, it is not adequate to detect early bone erosions and soft-tissue changes (1). On the other hand, a number of reports have described the efficacy of magnetic resonance imaging (MRI) in demonstrating synovitis and bone changes with a greater sensitivity than conventional radiography (2). US, as a non-invasive technique, can detect sensitively small bone erosions (3). US might be considered as a valuable tool for early detection of bone erosion especially when MRI is not available or affordable. In addition, US seems to be more reliable when the disease is more active. US can be considered a reliable technique which detects more erosions than radiography, especially in early RA.

**Keywords:** Ultrasound, arthritis, early erosion

**Anahtar kelimeler:** Ultrason, artrit, erken erozyon

### Ethics

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Concept: Mustafa Turgut Yıldızgören, Design: Mustafa Turgut Yıldızgören, Data Collection or Processing: Kasım Osmanoğlu, Onur Veliöğlu, Analysis or Interpretation: Kasım Osmanoğlu, Onur Veliöğlu, Literature Search: Halil Öğüt, Onur Veliöğlu, Writing: Halil Öğüt.

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