The Importance of Two-View Radiography and Ultrasound in Identifying and Differentiating Calcifications

Kalsifikasyonları Tanılamada ve Ayırt Etmede İki Yönlü Radyografi ve Ultrasونon Önemi

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ABSTRACT Radiography maintain their importance as a basic imaging modality in the evaluation of the musculoskeletal system from past to present. To maximize the diagnostic value of radiography, proper patient positioning is essential. Musculoskeletal calcifications have multiple appearances and locations. Each location has a specific short differential diagnosis, with minimal further investigation necessary. The relatively rare occurrence of this condition around the elbow could lead to a misdiagnosis or delay the definitive diagnosis. This rare case of calcific medial epicondylitis demonstrates why we should always review two views when looking for musculoskeletal pathologies. We also point to the role of ultrasound to confirm diagnosis.

Keywords: Calcific medial epicondylitis; calcification; bony spur

A 58-year-old male presented with a mild medial elbow pain that had been worsening gradually over the past month. The pain was exacerbated with heavy lifting and forceful gripping. The patient did not have a history of obvious trauma before the onset of his symptoms. The physical examination revealed mild tenderness over the medial epicondyle and elbow extension is limited by 10 degrees. There were no laboratory abnormalities. Lateral radiographic view of the right elbow revealed a calcified soft tissue with a slight upward curve possessing a faint radiolucent line at the base, similar to an olecranon spur (Figure 1A). The anteroposterior radiograph shows an indistinct region of calcium deposition adjacent to the medial epicondyle (Figure 1B). Because of these suspicious images, ultrasonographic examination was performed. Sonographic imaging of the elbow revealed an area of tendinosis on the triceps tendon with bony irregularities (Figure 2A) and an inhomogeneous common flexor tendon with calcifications

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Calcifications normally appear as mineralized densities, whereas enthesal new bone formation shows an outer cortex and inner trabecular pattern.\(^3\) One should first differentiate a calcification from an ossification, then locate the calcification correctly. Because of this potential to misdiagnosis, we recommend practitioners consider at least two-view (usually an anteroposterior and a lateral views) radiographic studies and confirm with other imaging modalities as needed. Musculoskeletal sonography is an important complementary tool to radiography and is essential for clinicians who want to provide patients with state-of-the-art musculoskeletal imaging. In this manner, the differential diagnosis will be significantly narrowed and unnecessary investigations will be reduced.

Elbow pain may have numerous causes arising from intra-articular and surrounding structures.\(^1\) Calcific periarthritis as a cause of elbow pain is relatively rare. Less familiarity with this condition could lead to a misdiagnosis or delay the definitive diagnosis.\(^2\) Calcified tendinopathy is a chronic condition where deposits of calcium phosphate crystals accumulate in the midsubstance of the tendon fibers. The bony spurs are formed via a combination of enchondral, intramembranous, and chondroid ossification. Differentiation between calcifications and ossification is very important in making the correct diagnosis.

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