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

Kalsifikasyonları Tanımlamada ve Ayırt Etmede İki Yönlü Radyografi ve Ultrasonun 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 epycondylitis 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

ÖZET Radyografi, geçmişten günümüze kas-iskelet sisteminin değerlendirilmesinde temel bir görüntüleme yöntemi olarak önemini korumaktadır. Radyografinin tanısal değerini en üst düzeye çıkarmak için uygun hasta pozisyonlaması önemlidir. Kas-iskelet kalsifikasyonlarının multipl görünüm ve lokasyonları vardır. Her lokasyonun, minimum ileri araştırma gerekliliği ile spesifik bir kısa ayırıcı tanısı vardır. Bu durumun dirsek çevresinde nispeten nadir görülmesi yanlış tanıya neden olabilir veya kesin tanıyı geciktirebilir. Bu nadir kalsifik mediyal epikondilit vakası, kas-iskelet sistemi patolojilerini ararken neden her zaman 2 yönlü gözden geçirmemiz gerektiğini göstermektedir. Ayrıca tanıyı doğrulamak için ultrasonun rolüne de işaret ediyoruz.

Anahtar Kelimeler: Kalsifik mediyal epikondilit; kalsifikasyon; kemik 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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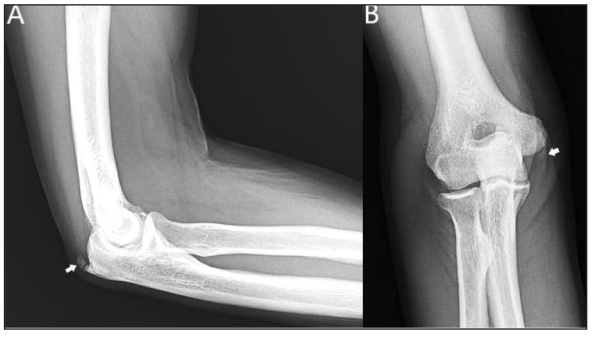

FIGURE 1: Lateral (A) and anteroposterior (B) radiographic images of the right elbow show amorphous calcified densities (arrows) in the soft tissue.

(Figure 2B). The articular cartilage has a smooth surface with normal thickness. From testing, reported symptoms and imaging findings, the patient was diagnosed with calcific medial epicondylitis. The patient was applied twice a week for 3 weeks, 5 sessions of extracorporeal shock wave therapy (1.8 bar, 10.0 Hz, 2000 beats). In addition he was given eccentric and stretching exercises to do daily for his right arm. After a month of treatment, the visual analogue scale score reduced from 5 to 0 and limited extension of elbow was improved.

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 endochondral, intramembranous, and chondroid ossification. Differentiation between calcifications and ossification is very important in making the correct diagnosis.

Calcifications normally appear as mineralized densities, whereas entheseal 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.

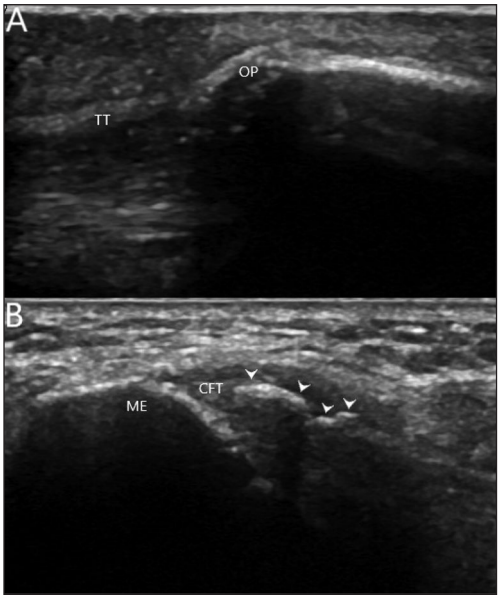

FIGURE 2: Diagnostic ultrasound results for the patient's left elbow. **A)** An inhomogeneous CFT with calcifications (arrowheads); **B)** Insertional triceps tendinopathy with adjacent bony irregularities, without spur formation.
CFT: Common flexor tendon; ME: Medial epicondyle; OP: Olecranon process; TT: Triceps tendon.

REFERENCES

1. Hudes K. Conservative management of a case of medial epicondylosis in a recreational squash player. J Can Chiropr Assoc. 2011;55:26-31. [Pubmed] [PMC]
2. Kimura H, Iwamoto T, Oki S, et al. Chronic calcific periarthritis of the elbow treated by cimetidine administration: Five cases. J Orthop Surg (Hong Kong). 2017;25:2309499017717193. [Crossref] [Pubmed]
3. Freire V, Moser TP, Lepage-Saucier M. Radiological identification and analysis of soft tissue musculoskeletal calcifications. Insights Imaging. 2018;9:477-92. [Crossref] [Pubmed] [PMC]