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CASE REPORT OLGU SUNUMU

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An Unusual Presentation of Soft Tissue Mass in the Wrist of a Patient with Rheumatoid Arthritis

Romatoid Artritli Bir Hastanın El Bileğinde Olağan Dışı Yumuşak Doku Kitlesi Görünümü

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ABSTRACT Rheumatoid arthritis (RA) is a chronic autoimmune disease characterized by inflammation of the synovium, leading to joint destruction and various extraarticular manifestations. Symmetrical joint involvement is a hallmark of rheumatoid arthritis, whereas soft tissue lesions may frequently appear as extraarticular manifestations. These lesions can be due to infections, tendinopathies, ganglion cysts, synovitis, or nodules. Soft tissue lesions around the wrist joint can be challenging to differentiate in RA patients, and understanding the differential diagnosis is pivotal for accurate management. Furthermore, these lesions could be a sign of a flare-up. In this case report, we describe a large soft tissue mass found on the right wrist area of an elderly patient with RA and discuss the differential diagnosis for such a presentation.

Keywords: Soft tissue mass; tenosynovitis; rheumatoid arthritis; flare-up

ÖZET Romatoid artrit (RA), sinovyumun inflamasyonu ile karakterize, eklem harabiyeti ve çeşitli eklem dışı bulgulara yol açan kronik bir otoimmün hastalıktır. Simetrik eklem tutulumu romatoid artritin ayırt edici özelliği iken yumuşak doku lezyonları sıklıkla eklem dışı belirtiler olarak ortaya çıkabilir. Bu lezyonlar enfeksiyonlara, tendinopatilere, ganglion kistlerine, sinovite veya nodüllere bağlı olabilir. RA hastalarında el bileği eklemi çevresindeki yumuşak doku lezyonlarını ayırt etmek zor olabilir ve ayırıcı tanının anlaşılması doğru tedavi için çok önemlidir. Ayrıca bu lezyonlar bir alevlenmenin işareti de olabilir. Bu olgu sunumunda, yaşlı RA'lı bir hastanın sağ el bileği bölgesinde bulunan büyük yumuşak doku kitlesini tanımlayarak böyle bir tablonun ayırıcı tanısını tartıştık.

Anahtar Kelimeler: Yumuşak doku kitlesi; tenosinovit; romatoid artrit; alevlenme

Rheumatoid arthritis (RA) is the most common chronic autoimmune inflammatory arthropathy worldwide and is characterized by progressive damage to synovial joints and various extraarticular manifestations. RA affects 0.5%-1% of the general population and predominantly elderly females.[1-5] The clinical symptoms of symmetrical joint involvement include arthralgia, swelling, redness, and even motion impairment.[4] The metacarpophalangeal joints, the proximal interphalangeal joints, and the wrist

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joints are commonly involved. RA may also impact the knees, ankles, elbows, shoulders, metatarsophalangeal joints, cervical spine, and temporomandibular joints.[1,5]

Soft tissue lesions can be seen at the wrist of RA patients and are mostly due to rheumatoid nodules, synovitis, ganglion cysts, infections, or tendinopathies. The clinical presentation of these masses around the wrist joint can pose a diagnostic challenge to the clinician. Understanding the differential diagnosis is crucial for accurate diagnosis and appropriate management of soft tissue lesions in RA patients. Herein, we describe the RA case of a large soft tissue mass on the right wrist area and discuss the differential diagnosis**.**

CASE REPORT

A 76-year-old right-handed woman with a past medical history of RA was referred to the Department of Physical Medicine and Rehabilitation because of joint pain and an enlarging cutaneous lesion on the radial aspect of the right wrist which resembled a soft tissue infection. She had RA for 17 years and was on leflunomide therapy and on-demand non-steroidal anti-inflammatory drugs. Previous treatments included methotrexate and corticosteroids which were stopped due to side effects. She had suffered from this mass for a year and complained the size of the mass had increased in the last few months. As she was living in a rural area, she was devoid of regular rheumatology visits and follow-ups. She had received antibiotics with no significant response. History revealed hypertension and operated nodular thyroid disease as comorbid diseases. She denied any trauma or infection.

Physical examination revealed rheumatic joint deformities in the hands, wrist, elbows and foot. Range of motion was limited and painful at the affected joints. Neurological examination was normal. She had an erythematous painless and slightly mobile nodular mass (10x4.5 cm) involving the radial surface of the wrist. The temperature was slightly increased on the mass.

Laboratory tests including liver/kidney/thyroid function tests, uric acid levels, tumor markers were normal. We detected an increase in C-reactive protein (CRP) (2.46 mg/dL, reference range 0-5 mg/dL), erythrocyte sedimentation rate (ESR) (56 mm/hour) and platelet level (462000) while hemoglobin level (10.9 g/dL) was decreased.

Ultrasonographic (US) imaging showed hypertrophic tenosynovitis of the flexor carpi radialis (FCR) and revealed hypoechoic synovial pannus with doppler activity, which causes abnormal distention of the synovial sheath. The FCR was split in the distal end because of synovial proliferation and synovial pannus and fresh fluid pushed the median nerve at the carpal tunnel level (Figure 1). According to the US results, magnetic resonance imaging (MRI) was requested. Also, MRI showed hypertrophic tenosynovitis and synovial pannus of the FCR (Figure 2).

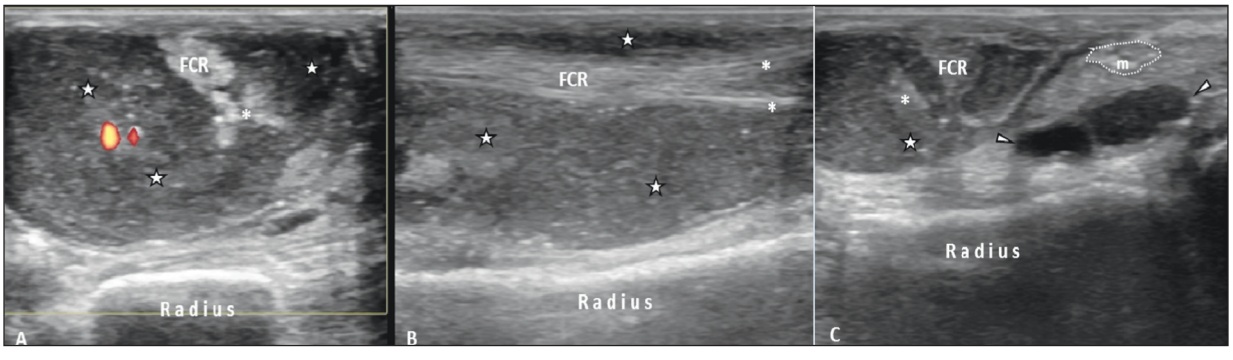

FIGURE 1: Hypertrophic tenosynovitis of the flexor carpi radialis (FCR). **A)** Short-axis and **B)** long-axis ultrasonographic images of the FCR reveal hypoechoic synovial pannus (stars) with doppler activity which causes abnormal distention of the synovial sheath. The FCR is split in distal end (asteriks) because of synovial proliferation. **C)** At the carpal tunnel level, synovial pannus and fresh fluid (arrowheads) push away the median nerve.
FCR: Flexor carpi radialis.

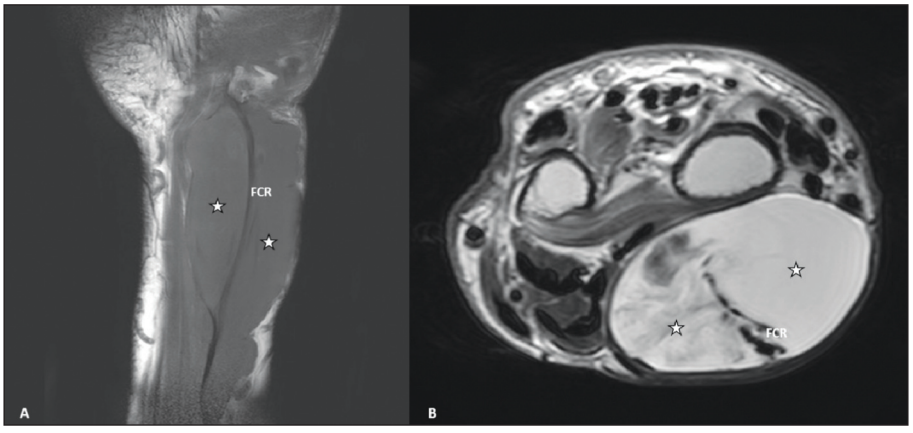

FIGURE 2: Hypertrophic tenosynovitis of the FCR in magnetic resonance imaging. **A** (coronal T1 image), **B** (axial T2 image) synovial pannus (stars). FCR: Flexor carpi radialis.

The disease activity score (DAS-28) revealed 6.1, which shows high disease activity. Oral methotrexate (15 mg/week) and oral corticosteroid (5 mg prednisolone/day) were added to leflunomide (20 mg/day) therapy. The control visit was planned for 3 weeks later. On her follow-up, the soft tissue mass was regressed, hyperemia and the slightly increased temperature were not present (Figure 3). Control US revealed decreased pannus activity and synovial proliferation. A written informed consent was obtained from the patient.

DISCUSSION

In this case report, we present a case of flexor tenosynovitis in an elderly woman, which manifested as a large soft tissue mass in her right wrist. The differential diagnosis of soft tissue masses in patients with RA is important. It can be difficult to distinguish between soft tissue abnormalities surrounding the wrist joint in RA patients.

Wrist soft tissue masses are common conditions usually caused by pseudotumor lesions, such as syn-

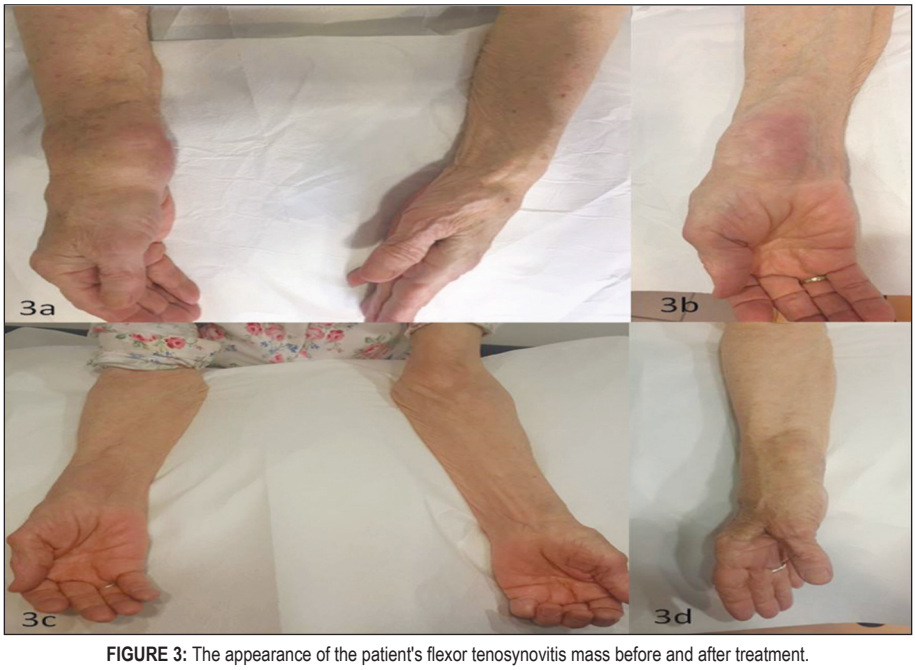

FIGURE 3: The appearance of the patient's flexor tenosynovitis mass before and after treatment.

ovial cysts or benign tumors. In contrast, malignant tumors, like soft-tissue sarcomas, are extremely rare in the wrist.[6-8] Ganglion cysts, a fluid-filled swelling overlying a joint or tendon sheath, are the most common soft tissue mass in the wrist. They are usually firm and round and have a rubbery consistency. The most common location of ganglion cysts is the dorsal aspect of the wrist arising from the scapholunate ligament or scapholunate articulation.[9]

In some cases, cutaneous manifestations related to RA, such as classical rheumatoid nodules, rheumatoid nodulosis, interstitial granulomatous dermatitis with arthritis, as well as palisaded neutrophilic and granulomatous dermatitis can manifest as bumps in the soft tissues around the joints. Granulomas are clusters of immune cells like macrophages, giant cells, and T lymphocytes, formed in response to chronic inflammation. In RA, granulomas form when the immune system attacks not only the synovial tissue in joints but also other tissues, leading to nodular or granulomatous inflammation.[10-12] Subcutaneous rheumatoid nodules can be seen in the wrists, and more commonly occur along the dorsal and medial aspects. They are frequently asymptomatic, in addition, they are firm and not mobile on palpation.[2,5] Infection of the skin and subcutaneous tissues was not considered in clinical diagnosis because of findings such as absence of apparent erythema, warmth and pain, presence of a mild increase of acute-phase reactants.

Gout is thought to be uncommon in individuals with RA, yet a significant number of RA patients may exhibit periarticular monosodium urate crystal deposits.[13-18] Gouty tophi deposition of the flexor tendon sheath may rarely lead to soft tissue mass in the wrist and can even be a rare cause of carpal tunnel syndrome.[19-21] In our patient, as the uric acid levels were normal and the US and MRI findings were not compatible with tophi, gout was not considered to coexist with RA.

Synovitis of the joints of the hands and wrist is a characteristic abnormality in patients with RA. Tendon disease, including tenosynovitis, tendinopathy and tendon ruptures are also well-recognized findings in this condition, occurring frequently in both the hands and the wrist with a reported incidence in RA patients of approximately 45%.[5,22,23] Tendon and bursal involvement are frequent and often clinically dominant in the early disease.[1,24] Synovitis, defined as inflammation of the lining of the joints, can easily be palpable in the wrist joints. The RA synovitis has a soft “doughy” feeling. Other changes of inflammation such as erythema and warmth may or may not be present, although tenderness is usually present.[5,24] Tenosynovitis, inflammation in the lining of the tendon sheaths, may be due to a traumatic episode, repetitive use, inflammatory arthritis infectious etiology, or idiopathic.[24,25] Tenosynovitis is also frequently found in patients with active, long-standing RA and predisposes to the risk of tendon rupture if present for a long time.[25] Flexor tenosynovitis is more common than extensor tenosynovitis in early arthritis.[24]

In the study of Mangnus et al., it was reported that tenosynovitis rarely occurs in the wrist, except for the extensor carpi ulnaris tendon, in patients aged 40 years and over.[25,26] Another study indicated that tenosynovitis had the strongest association with progression to RA in longitudinal analyses, although tenosynovitis was less frequent than synovitis.[27] A previous study revealed positive significant correlations between tenosynovitis and DAS-28, ESR and CRP were also detected.[28] The clinical management of RA has traditionally been supported by biochemical and radiographic findings. Nevertheless, imaging modalities like US and MRI have improved the possibility for better management of RA patients, due to higher sensitivity and specificity for detecting ongoing inflammation.[29] A multicenter study has reported that power doppler positivity in tendons and joints, was an independent risk factor of flare in patients with RA in clinical remission and tenosynovitis detected by US might be the best imaging predictor for flares.[29,30]

In our case, the flexor tenosynovitis presented as a large soft tissue mass in the right wrist, which appeared with increased disease activity in an elderly woman. It regressed after modification of medical treatments and was confirmed by US. The patient did not accept surgical approaches or aspiration, so only medical treatments were modified to reach low disease activity.

In conclusion, understanding the differential diagnosis is critical for accurate diagnosis and proper management of soft tissue lesions in RA patients. Tenosynovitis must be taken into consideration in the differential diagnosis of large soft tissue masses in the wrist area of patients with RA. The tenosynovitis of the hand and wrist may represent the increased disease activity and progression. The reduction in disease activity regresses the flare-up of flexor tenosynovitis. US may be used as an outcome measure for monitoring the treatment of tenosynovitis.

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