Editorial

Older patients with rheumatoid arthritis in our orthopaedic practice

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Editorial

This editorial reviews the common orthopaedic manifestations of rheumatoid arthritis (RA) in older patients, without intervening in treatment strategies. These patients may experience either late sequelae of young-onset RA or an elderly-onset disease. Special emphasis is given to key differences from osteoarthritis (OA). The study also presents illustrative cases from our orthopaedic practice.

Orthopaedic manifestations of RA

The early phase of young-onset RA presents symptoms within six months, mainly affecting the small joints of the hands and feet. Once established, the disease is progressive and persistent. Early diagnosis and treatment are crucial in preventing permanent joint damage. Established RA impacts significantly mobility, daily activities, and quality of life. Severe joint destruction and deformity often appear in the hands, wrists, feet, and large joints, usually bilaterally and symmetrically. However, in the early phase or with asymmetrical joint damage, deformity may be worse on one side.

Differential radiographic diagnosis between RA and OA of the hip

In the hip, radiographic findings in RA should be differentiated from OA. RA causes subchondral erosions; OA causes subchondral sclerosis and cysts. Joint space narrowing in RA is concentric, but in OA, it occurs in the weight-bearing (superior) joint space. RA causes concentric degeneration, with or without protrusio acetabuli (PA). In OA, new bone formation and osteophytes appear, sometimes with lateral migration of the femoral head. As PA is a relevant complication that can arise in both RA and OA, a thorough understanding of its types and associations is important.

Protrusio acetabuli

PA is classified as primary (idiopathic or Otto pelvis) or secondary. It is typically bilateral in primary cases, systemic inflammatory diseases like RA, Paget's disease, severe OA, and osteoporosis/osteomalacia. Unilateral involvement may result from trauma, infection, fibrous dysplasia, or tumors. In OA and spondyloarthropathies with asymmetrical peripheral joint destruction, particularly psoriatic arthritis, PA may also present with unilateral involvement (Figure 1). PA and other skeletal complications appear with a higher frequency and severity among RA patients treated with corticosteroids.

Knee RA

Knee involvement in RA may initially present with recurrent joint effusions. The disease usually results in valgus (knock-knee) deformity and lateral structural collapse (Figure 2a). Unlike knee OA, the loss of joint space in RA is concentric, involving all three knee compartments. Additionally, the cruciate ligaments are not significantly affected in RA. In contrast, these ligaments, especially the anterior cruciate ligament, become substantially thinner or frayed in advanced OA. It should be noted that collagenases produced by the synovium and pannus in RA destroy type II collagen in articular cartilage, whereas type I collagen in ligaments is more resistant.

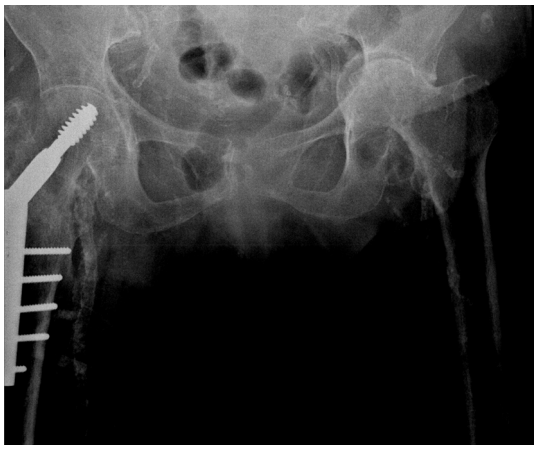

Figure 1 A 70-year-old woman diagnosed with psoriatic arthritis, a fixed right intertrochanteric fracture, and left acetabular protrusion. The radiograph showed unilateral medial displacement of the acetabulum and femoral head beyond the ilioischial (Köhler) line, as well as the presence of arterial atherosclerotic plaques. Both pathologies are linked to chronic systemic inflammation, resulting from immune-mediated mechanisms rather than isolated, localized lesions.

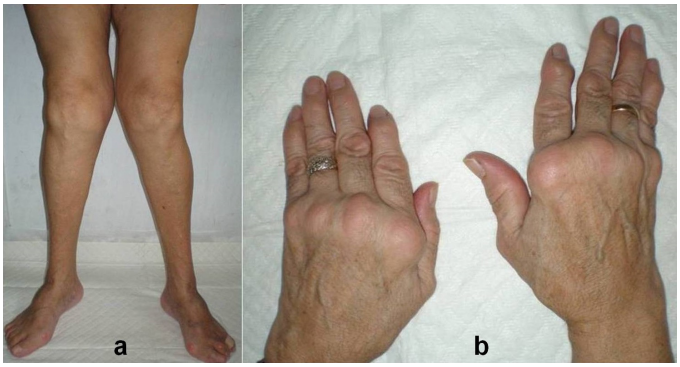

Figure 2 A 64-year-old woman with valgus knees (a) and bilateral ulnar deviation of the fingers. She reported young-onset RA with pain, stiffness, and swelling of the knuckles, along with chronic finger deformities (b).

Pain severity in RA and OA

A distinction should also be made regarding the severity of pain between RA and OA. In RA, hip or knee joint destruction and flexion contracture, due to severe inflammation-induced soft tissue fibrosis, are usually complicated by bone-on-bone contact. Bone grinding, causing crepitus, results in severe, unbearable pain that is usually much more pronounced than that experienced in OA.

Synovectomy in RA

The aim of synovectomy in RA is to remove the inflamed synovium and the invasive pannus. Pannus is characterized by its increased vascularization and higher permeability, which leads to the release of more collagenases, especially where it comes into contact with the articular cartilage. Removing the pannus protects the cartilage by blocking both physical invasion and the spread of collagenases through the joint fluid. The new synovial tissue that forms after the procedure is more fibrous and contains fewer blood vessels. Synovectomy is performed in patients who have little to moderate damage to bone or cartilage. It may also delay the need for total joint replacement.

Ankle and foot RA

The ankles and feet are involved in almost 90% of patients. Common findings include posterior tibial tendon dysfunction, subtalar joint involvement and erosions, secondary flatfoot deformity, fibular deviation of the toes, hallux valgus, and hammertoe deformity (Figure 3).

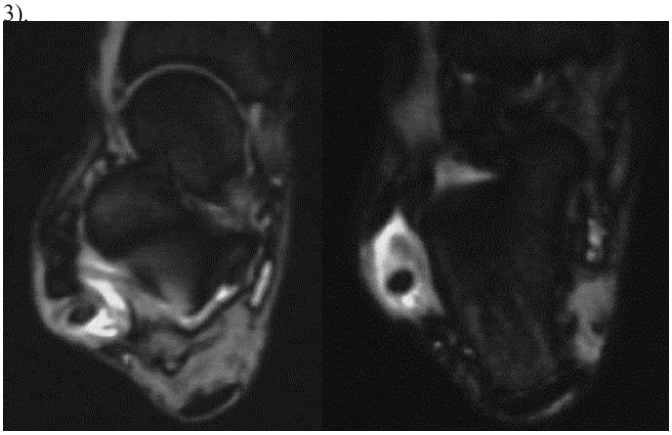

Figure 3 A 55-year-old man presented with extensive peroneal tenosynovitis along the lateral aspect of the ankle and heel. This condition may be the only early symptom of young-onset RA. It is usually associated with tibialis posterior tenosynovitis and may lead to significant disability.

Upper extremity RA

In the shoulder and elbow, common findings include joint effusion, a narrowed joint space, and erosions.

The hand and wrist are commonly affected early on, especially the proximal interphalangeal and metacarpophalangeal (knuckle) joints, as well as the ulnar styloid and the triquetrum. In contrast, the distal interphalangeal joints, where Heberden's nodes appear, are affected in OA. A late feature of RA is ulnar deviation, or drift, of the fingers. It results from the swollen, painful knuckles and leads to loss of hand function (Figure 2b, 4, 5a). If patients with hand polyarthritis do not meet the classification criteria for RA, other inflammatory and non-inflammatory diseases should be considered (Figure 6).

Figure 4 A 75-year-old woman presented with severe ulnar deviation of the left hand fingers. Swelling of the knuckles was associated with intrinsic muscle wasting on the left side. There was also mild bilateral radial deviation of the wrists, but no nail disorders. Although the patient was diagnosed with young-onset RA, unilateral ulnar deviation can also be a feature of psoriatic arthritis, which typically presents with asymmetrical joint involvement.

Figure 5 A 78-year-old man diagnosed with elderly-onset RA four years ago. Bilateral swelling of the knuckles and proximal interphalangeal joints was associated with wasting of the small muscles and contracture of the palmar aponeurosis (a). Rheumatoid bursitis, along with ultrasonographically diagnosed rheumatoid nodules, was evident in the posterior region of both elbows (b).

Differences between young- and elderly-onset RA

The clinical findings differ markedly between young- and elderly-onset RA. Elderly-onset RA typically affects patients aged 60 to 65, with an equal gender distribution, rather than predominantly females. Distinctive features include a higher incidence of acute onset, involvement of large joints, and a greater risk of systemic manifestations and comorbid geriatric syndromes. Additionally, there is an increased risk of rapid clinical and radiographic progression due to higher disease activity. Presentation can often mimic OA and polymyalgia rheumatica, with symptoms such as shoulder or hip stiffness and pain. Serological findings in elderly-onset RA may reveal high levels of inflammatory markers (erythrocyte sedimentation rate and C-reactive protein), a lower prevalence of rheumatoid factor

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(RF), and the presence of anti-cyclic citrullinated peptide antibodies (positive anti-CCP test). Notably, elevated erythrocyte sedimentation rates at disease onset and during flares can reach three-digit figures.

Figure 6 A 63-year-old woman presented with hand polyarthritis. Symmetrical swelling of the proximal interphalangeal, metacarpophalangeal, and wrist joints is a hallmark feature of RA. However, the associated leucopenia, positive antinuclear antibodies, and aggressive dementia strongly suggested systemic lupus erythematosus, specifically neuropsychiatric lupus.

Bursitis in RA

Bursitis, involving both the superficial (cutaneous) and deep (profundus) bursae, is a common extra-articular finding of RA that is often overlooked. We treat RA-related superficial bursitis in the same way as a non-RA lesion, which includes breaking the cyst after making multiple needle perforations in its wall. For lesions in the posterior elbow region (Figure 5b), we prefer to make a surgical incision in the bursa and insert a Penrose drain to facilitate drainage for an average of four to five days to allow for secondary healing.

Cutaneous findings in RA

In addition to joint findings, cutaneous manifestations are important extra-articular features that can be diagnostic of the disease. Among these, the most common are rheumatoid nodules, which are considered a poor prognostic marker and usually develop on pressure points and bony prominences (Figure 7). Importantly, these nodules are most frequently found in seropositive patients with chronic disease. They are composed of solid necrotic tissue, rather than pus. Surgical evacuation or removal is not required, as recurrence is a common occurrence. Notably, rheumatoid nodulosis is a rare, benign condition characterized by numerous subcutaneous nodules and the absence of significant erosive polyarthritis.

Other systemic findings in RA

Older patients with both young- and elderly-onset RA often report systemic fatigue, weight loss, and anemia. The latter may be associated with flare-ups. Furthermore, other extra-articular manifestations are detected more frequently in older patients with RA, including cardiovascular disease, infections, eye (Figure 8) and mouth symptoms, other skin findings, peripheral neuropathy, malignancies, and lung disease. Interstitial lung disease is the most common pulmonary complication of RA, especially in older males with severe symptoms. It is associated with increased mortality and reduced life expectancy due to the high risk of serious, recurring, and often fatal respiratory infections (Figure 9). Finally, RA in older patients may coexist with other chronic medical conditions, complicating management and care.

Figure 7 A rheumatoid nodule in a 65-year-old woman diagnosed with young-onset RA.

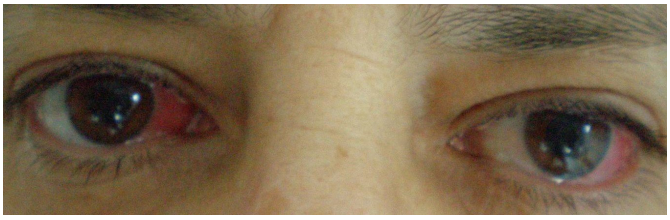

Figure 8 A 54-year-old woman treated with plaquenil (hydroxychloroquine) developed RA-related scleritis.

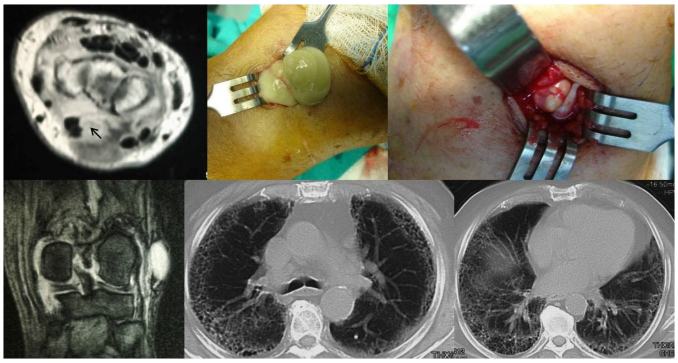

Figure 9 A 70-year-old man diagnosed with young-onset RA was admitted with an infected bursa over a rheumatoid nodule (arrow) on the dorsal aspect of his right wrist, which had displaced the extensor tendons. A nodule was also visible on the lateral side of his left knee. He was diagnosed with severe, aggressive RA. The infected bursa and the rheumatoid nodule of the wrist were surgically removed. Six months later, he was admitted with a respiratory infection, presenting with shortness of breath, a cough, and sputum production. High-resolution computed tomography of the chest showed multiple enlarged lymph nodes in the pretracheal, paratracheal, and aortopulmonary window regions. Thickening of the interlobular septa was also evident with a subpleural, peripheral, and basal distribution (reticulation). Interstitial subpleural emphysema cysts were also present. The 'stacked' appearance of cystic airspaces (honeycombing) confirmed severe progression of interstitial lung abnormalities.

Conclusion

Older orthopaedic surgeons have long relied on clinical and radiographic signs of RA for differentiation from OA and early diagnosis to improve outcomes. While artificial intelligence, sophisticated imaging, and modern treatment trends offer valuable

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support, these advances should enhance, rather than replace, established practices in older RA patients. In summary, this work aims to emphasize that these established practices should be consistently reminded of over time.

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Conflicts of interest

The author certifies that he has no commercial associations (such as consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the submitted article. The author received no financial support for this study.

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