Rheumatology

Monoarticular rheumatoid arthritis of the wrist: a rare entity
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Abstract
Introduction
Monoarticular presentation of rheumatoid arthritis is infrequent and it usually occurs in the hip and knee joints. We report such a case in a 70-year-old male with monoarticular rheumatoid arthritis of the left wrist.

Case report
A 70-year-old male patient presented with pain and restriction of movements of his left wrist. Radiographs showed lytic lesions in distal radius and carpal bones, concentric reduction of wrist joint space and periarticular osteoporosis. Erythrocyte sedimentation rate and C-reactive protein were elevated. Rheumatoid factor was negative. Uric acid levels were normal. Joint aspirate culture was negative. Anti-citrullinated cyclic peptide was strongly positive. Following treatment using disease-modifying anti-rheumatic drugs, patient improved significantly.

Conclusion
Our case did not have the classical features of rheumatoid arthritis. Monoarticular presentation of rheumatoid arthritis is rare, of which isolated wrist involvement is even rarer. Rheumatoid arthritis should be considered in the differential diagnoses of monoarticular arthritis, and anti-citrullinated cyclic peptide should be used more frequently to diagnose rheumatoid arthritis in doubtful cases.

Introduction
Rheumatoid arthritis (RA) has varied clinical presentation, but an insidious onset of pain with symmetric swelling of small joints of the hand is the most frequent finding. The patterns of presentation include palindromic onset, monoarthritis, extra-articular synovitis (tenosynovitis, bursitis), polymyalgia-like onset and general symptoms. Monoarticular RA is an infrequent clinical presentation and it usually occurs in the hips and knees. We report a case of monoarticular RA of the wrist in a 70-year-old male patient. The purpose of this case report is to keep RA in the differential diagnosis of monoarthritis and to use anti-citrullinated cyclic peptide (CCP) assay more regularly to diagnose RA.

Case report
A 70-year-old male patient presented to our outpatient clinic with complaints of pain in the left wrist during the previous 6 months and restriction of wrist movements for 4 months. There was no history of fever or trauma to that wrist. There was no involvement of other large joints in the body or pain or restriction of movements in the small joints of both hands. He denied history of weight loss or cough with sputum and there was no contact with tuberculosis. On examination, he had diffuse swelling of his left wrist. There was no warmth. Joint-line tenderness was present. Dorsiflexion and palmar flexion were restricted to 40 degrees and 20 degrees, respectively. Abduction and adduction were restricted by 10 degrees when compared with the right wrist. His metacarpophalangeal and proximal interphalangeal joints were normal. His spine was clinically uninvolved. No skin lesions were detected.

Radiographs of the left wrist and hand revealed lytic lesions in the distal radius and the carpal bones. There was subchondral sclerosis at the distal radius with concentric reduction in wrist joint space (Figure 1). Periarticular osteoporosis was evident. Routine blood investigations

Figure 1: Subchondral sclerosis at the distal radius with concentric reduction in wrist joint space.

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Figure 2: Lytic lesions in distal radius and carpal bones with synovial thickening.

Discussion

The causes for monoarthritis are many, the commonest being infection, trauma, crystal deposition disorders (gout and pseudogout), psoriasis, RA and neoplasm (pigmented villonodular synovitis). The onset of most of these conditions is often acute and dramatic with fever, pain and swelling of the joint. A good history and careful clinical examination with appropriate diagnostic evaluation can narrow down the differential diagnoses considerably. RA affects 1% of the world population. RA is characterized by chronic inflammation of synovial joints with progressive erosions and joint destruction. Any joint can be involved in RA (even the cricoarytenoid joint), but the preferential sites are the proximal interphalangeal and the metacarpophalangeal joints of the hand as well as the metatarsophalangeal joints of the foot, the knee and the joints of the upper limb. Symmetrical joint involvement is the hallmark of RA. Morning stiffness and hand involvement is the typical early manifestation of RA. Monoarthritis due to RA is quite rare and often involves the hips and the knees.

RF anIgM antibody directed against the constant portion of IgG antibody is present in 70% to 80% of patients with RA. RF is also seen in patients with hepatitis C, systemic lupus erythematosus, Sjogren's syndrome, infectious mononucleosis and 10% of healthy individuals. RF is absent in 15% to 20% of patients with RA. Anti-CCP is useful in differentiating RA from other disorders that may present with arthritis. Citrulline is an unusual autoantibody formed by post-translational modification of arginine residues. Autoantibodies to citrullinated proteins such as filaggrin and its circular form are found in RA. Synthetic CCP variants react with anti-filaggrin autoantibodies and serve as substrate for detecting anti-CCP antibodies serologically. The sensitivity of anti-CCP is about 74% and the specificity is 96% to 98%, as compared to RF whose sensitivity and specificity are 69.7% and 81%, respectively. Hence, anti-CCP assay is a more specific and powerful serologic marker for diagnosing RA.

In our patient, the classical features of RA were absent. Only his left wrist was involved for 6 months. A thorough history and clinical examination ruled out the common causes of monoarthritis, namely, trauma, infection and reactive arthritis. Radiology showed features of wrist arthritis with involvement of carpal bones. His joint aspirate was negative for crystals and bacteriological culture showed no growth. RF was negative, but anti-CCP was strongly positive. Symptomatic improvement was seen following DMARD treatment.

Conclusion

This case is peculiar, due to the following reasons: (i) the classical feature of RA involving the metacarpophalangeal and interphalangeal joints with the symptom of morning stiffness is absent in this case. (ii) Monoarticular RA is usually described in the hips and the knees, and wrist involvement is unusual. (iii) RF is absent in this case, but anti-CCP is strongly positive, pointing to the diagnosis of RA. (iv) RA usually involves females in their 30s and 40s, but our patient is a male aged 70. This case is a good clinical material for training orthopaedic surgeons to use anti-CCP more regularly in their practice to diagnose RA in unusual and doubtful cases.

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scenarios. Also anti-CCP helps in the early diagnosis of RA and to predict the erosive nature of the disease, so that the treatment can be initiated early to prevent deformities.

**Consent**

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal.

**References**