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IMAGES IN RHEUMATOLOGY

Musculoskeletal tuberculosis presenting as polyarthritis: a diagnostic challenge

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ABSTRACT

Background: Polyarthritis in the elderly encompasses a broad range of differential diagnoses, including rheumatic diseases, infections, and malignancy.

Case Description: A 72-year-old woman presented with a 2-year history of persistent, asymmetrical inflammatory polyarthralgias of the hands, initially showing partial response to low-dose prednisolone (5 mg/day). She progressed to polyarthritis involving the hands and wrists. She denied inflammatory back pain, psoriasis, uveitis, or gastrointestinal symptoms. Laboratory evaluation revealed iron-deficiency anemia, elevated inflammatory markers, and negative rheumatoid factor and anti-citrullinated protein antibodies. Screening for active and latent tuberculosis was negative. Imaging studies demonstrated radiocarpal joint space narrowing and tenosynovitis, with MRI confirming inflammatory changes. Seven months later, the patient developed painful nodular cutaneous lesions on the right forearm and wrist. Computed tomography revealed axillary lymphadenopathy, and lymph node biopsy confirmed *Mycobacterium tuberculosis* infection. Anti-tuberculous therapy led to resolution of cutaneous lesions, normalization of inflammatory markers, and improvement of articular symptoms. Residual functional limitation persisted, likely reflecting diagnostic delay.

Conclusion: This case highlights tuberculosis as an important differential diagnosis in elderly patients with seronegative polyarthritis, particularly in the presence of atypical features or inadequate response to corticosteroids.

Keywords: Differential diagnosis; Polyarthritis; Mycobacterium tuberculosis; Musculoskeletal tuberculosis; Wrist.

Tuberculosis (TB) remains an important infectious cause of musculoskeletal manifestations and may mimic inflammatory rheumatic conditions, leading to diagnostic delay and inappropriate treatment. Musculoskeletal involvement is rare, accounting for approximately 1–3% of all TB cases and around 10% of extrapulmonary disease[1,2], typically affecting the axial skeleton, with less frequent involvement of peripheral joints[1,3]. A 72-year-old woman was first observed in Rheumatology, reporting a 1-year history of persistent, asymmetrical inflammatory arthralgias involving the wrists (bilateral, more pronounced on the right), metacarpophalangeal, proximal and distal interphalangeal joints. Symptoms had an inflammatory pattern, with morning stiffness lasting approximately 1 hour. She had been treated with low-dose prednisolone (5 mg/day), with partial and non-sustained clinical response. She denied inflammatory back pain, skin lesions, or family history of psoriasis, and had no history of uveitis or gastrointestinal symptoms. Laboratory evaluation revealed iron-deficiency anemia, elevated inflammatory markers, and negative rheumatoid factor and anti-citrullinated protein antibodies. Screening for both active and latent tuberculosis was initially negative. Radiographs demonstrated bilateral radiocarpal joint space narrowing, and musculoskeletal ultrasound revealed tenosynovitis of the 5th and 6th extensor compartments of the right wrist. MRI confirmed inflammatory changes. She was restarted on prednisolone (5–10 mg/day), with limited improvement, maintaining polyarthritis and morning stiffness. Given the partial and non-sustained response, and the absence of a definitive diagnosis, further investigation was undertaken. Four months after the initial assessment, computed tomography revealed enlarged right axillary lymph nodes (maximum short axis 15 mm). Nine months after the initial assessment, and approximately five months after reintroduction of corticosteroid therapy, the patient developed two painful erythematous nodular lesions with central ulceration on the right forearm. Microbiological cultures from skin swabs were negative (Fig-

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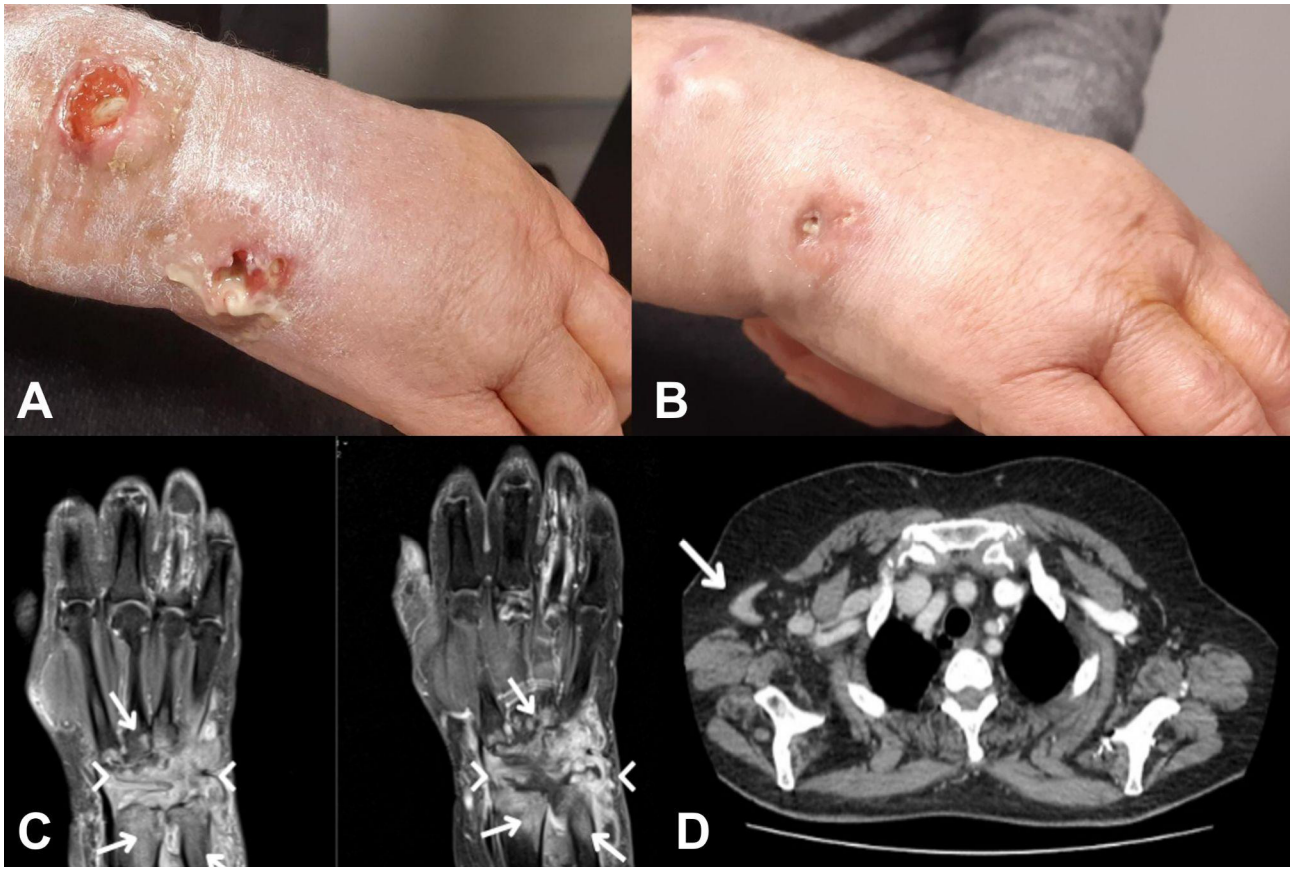

Figure 1. Clinical and imaging features of musculoskeletal tuberculosis
(A) Two painful erythematous nodular lesions with central ulceration on the right forearm, with active

ure 1A). Histopathological examination of the axillary lymph node revealed granulomatous lymphadenitis, without evident necrosis, with microbiological confirmation of *Mycobacterium tuberculosis* complex. Anti-tuberculous therapy was initiated with isoniazid (5 mg/kg/day), rifampicin (10 mg/kg/day), pyrazinamide (25 mg/kg/day), and ethambutol (15 mg/kg/day), followed by maintenance therapy with rifampicin and isoniazid, with a total duration of 15 months. Clinical evolution was favourable, with resolution of cutaneous lesions, normalization of inflammatory markers, and improvement of the articular symptoms. Corticosteroids were discontinued. Residual functional limitation persisted, particularly at the right wrist, likely reflecting diagnostic delay. The images illustrate cutaneous lesions, their resolution after treatment, inflammatory findings on MRI, and associated axillary lymphadenopathy.

This case highlights tuberculosis as an important and often overlooked differential diagnosis in elderly patients presenting with seronegative polyarthritis. Early recognition and appropriate treatment are essential to prevent irreversible joint damage and functional impairment.

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