

Rheumatoid arthritis and tabetic arthropathy: physiopathological link or simple association?

Nassira Aradoini, Sofia Talbi, Romaric Angala, Jamila Es-Souiri, Fatima Ezzahra Abourazzak, Taoufik Harzy

Abstract

To the best of our knowledge, the association of rheumatoid arthritis and tabetic arthropathy has never been described before in the literature. We report here a first observation. We report the case of a 50-year-old man, treated for syphilitic arthritis evolving for 4 years, who presented with a table of rheumatoid arthritis. The diagnosis of rheumatoid arthritis was established according to the 2010 American College of Rheumatology/European League Against Rheumatism criteria (ACR/EULAR). The treatment was based on weekly injection of methotrexate and a symptomatic treatment by corticosteroid. The association of rheumatoid arthritis and tabetic arthropathy is rare, to our knowledge this is the first case reported. This case reminds us that a neuropathic arthropathy as tabetic arthropathy, although it is rare, can be associated in a sporadic or exceptional way with other rheumatic disease like rheumatoid arthritis. A physiopathological link between the both diseases remains to be proved.

Keywords: Tabetic arthropathy, rheumatoid arthritis, rheumatoid factor, anti-citrullinated protein antibody

Introduction

Tabetic arthropathy is a rare complication of neurosyphilis. It occurs with a painless destruction of joints, neurological deficits, and proprioceptive loss. Currently, it has become uncommon because of early treatment with penicillin. Rheumatoid arthritis (RA) is a chronic inflammatory disorder that typically affects the small joints in the hands and feet. RA affects the lining of joints causing a painful swelling that can eventually result in bone erosion and joint deformity. The association between both these diseases is extremely rare; to our knowledge, this is the first case reported.

Case Presentation

A 50-year-old man without a family history of autoimmune disease was treated for tabetic arthropathy of the ankles. The diagnosis was made on the basis of the following clinical, biological, and radiological criteria: painless swelling of the ankles and neurological deficits, syphilitic serology positive in the blood and cerebrospinal and synovial fluids, and destruction of the ankles at radiography (Figure 1). We implemented a 3-week penicillin G treatment protocol: 20 million U/day for a total of four courses. Physical therapy (immobilization and cessation of weight bearing) was prescribed, and serial four-fold cerebrospinal fluid examinations of the quantitative nontreponemal Venereal Disease Research Laboratory (VDRL) test declined within 6 months. Currently admitted for the fourth cure of penicillin, he presented with polyarthralgia, stiffness, swelling, and limited motion and function of many joints, especially the small joints in the hands and feet, and was without fever for 4 months. A clinical examination revealed synovitis of the right wrist without deformation and limitation of flexion of the metacarpophalangeal (MCP) and proximal interphalangeal joints. Laboratory results showed normal chemistry including renal and hepatic functions. Blood counts demonstrated a hemoglobin level of 10.1 g/dL, platelet count of 300,000/mm³, and white blood cell count of 8000/mm³ (78% neutrophils, 15% lymphocytes). The erythrocyte sedimentation rate (ESR) was 90 mm/h, and C-reactive protein (CRP) level was 80 mg/L. Urinalysis showed 1+ protein but no casts or cells. Blood and urine cultures were negative. An immunological test revealed a positive rheumatoid factor of 140 UI/mL and anti-citrullinated protein antibodies of 350 UI/mL. Antinuclear antibody tests, human immunodeficiency virus antibody test, hepatitis B virus antibody and hepatitis C antibody tests, Treponema pallidum hemagglutination assay, and VDRL test of the blood and cerebrospinal and synovial fluids were negative. Radiography of the hands was normal. Ultrasonography of the hands showed synovitis of the right wrist, erosion of the 2nd MCP of the left hand, and tenosynovitis of the left extensor carpi ulnaris tendon (Figure 2- 4). The diagnosis



Department of Rheumatology,
Hassan II University Hospital, Medical
School, Fez, Morocco

Address for Correspondence:
Nassira Aradoini, Department of
Rheumatology, Hassan II University
Hospital, Medical School, Fez,
Morocco

E-mail: naradoini@netcourrier.com
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Figure 1. Anteroposterior radiograph of the ankles and feet revealed swelling and severe destruction of the ankles

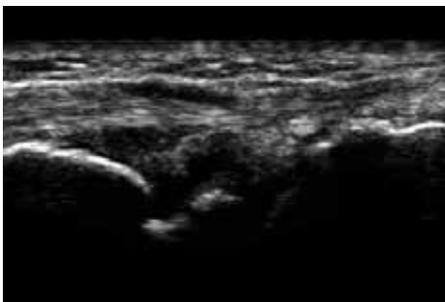


Figure 2. Ultrasonography of the right wrist showed synovitis

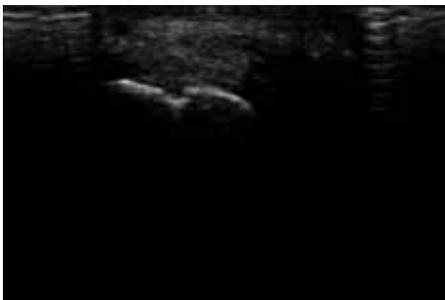


Figure 3. Ultrasonography of second metacarpophalangeal joint showed an erosion

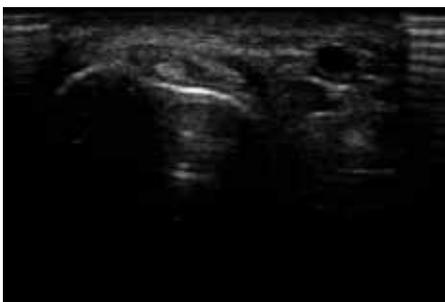


Figure 4. Tenosynovitis of the left extensor carpi ulnaris tendon

of early RA was made according to the 2010 American College of Rheumatology/European League Against Rheumatism criteria (1). The

treatment was an injection of methotrexate (0.3 mg/kg/week), and symptomatic treatment was a mini-bolus of methylprednisolone (250 mg) for 3 days, which was switched later to a low dosage of prednisone (0.15 mg/kg/day). After 3 months, the symptoms disappeared, ESR and CRP level become normal, and the prednisone was gradually stopped. Written informed consent was obtained from the patient for the publication of the case report.

Discussion

Tabetic arthropathy has become rare today (2). This diagnosis should be considered in patients presenting with painless and destructive arthropathy. Its most frequent locations in decreasing incidence are the knees, ankles, hips, and joints of the lumbar spine (3). The best treatment is the prevention and early treatment of primary syphilis by penicillin from 7 to 10 days of the administration of penicillin in the primary stage of infection and up to 30 days in the secondary and late stages of infection. For patients allergic to penicillin, administration of other antibiotics (ceftriaxone, tetracycline, doxycycline, or amoxicillin) is necessary (4). The typical interval between initial infection and syphilitic arthropathy is several years; in our case, the interval was 22 years. In literature, it is estimated at 3–15 years and depends on personal immunity (3, 5). The association between tabetic arthropathy and other rheumatic disease, especially RA, is rare; to our knowledge, this is the first case reported. RA is a chronic inflammatory disease. The causal direction remains uncertain, but recent discoveries suggest that gum inflammation and in particular, infection with organisms such as *Porphyromonas gingivalis* are important in the pathophysiology of RA development (6, 7). The current hypothesis is that *P. gingivalis*-mediated citrullination of human peptides is responsible for the initial breakdown in self-tolerance that leads to the development of RA-related autoimmunity (8). This is an intriguing concept, but it, as well as the role of multiple other infectious organisms and inflammation at other mucosal sites (including the respiratory tract, gut, and genitourinary tract) that have been implicated in the pathogenesis of RA, needs further exploration (9, 10). Our case lets us wonder if syphilis can mediate the citrullination of human peptides similar to *P. gingivalis* that leads to the development of RA. However, this assumption does not form a deduction given that this is the only case reported and that it can be a simple coincidence combining the two pathologies in the same patient.

In conclusion, tabetic arthropathy is a rare complication of neurosyphilis. Currently, it has become rare because of the early treatment of syphilis by penicillin. The association between tabetic arthropathy and RA is rare; to our knowledge, this is the first case reported. This case reminds us that a neuropathic arthropathy such as tabetic arthropathy can be associated in a sporadic or exceptional way to other rheumatic diseases such as RA. A physiopathological link between both diseases remains to be proved.

Ethics Committee Approval: N/A.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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