An old woman with chronic palmar dermatosis, rheumatism, and nail changes

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ABSTRACT

Psoriasis is a chronic inflammatory condition with variable changes on the skin and nails, sometimes associated with osteoarticular manifestations characterizing the psoriatic arthritis. This arthritis may precede, follow, or be concomitant with the skin lesions of psoriasis. Unsuspected psoriatic arthritis may be misdiagnosed by other seronegative spondyloarthritis, mainly in primary care attention, and ominous outcomes are related to late and inadequate management. Therefore, diagnostic exercises with base on significant clinical and radiological images might contribute to enhance the suspicion index about these challenging conditions.

Images in Medicine

This 71-year-old Brazilian woman was admitted because of asthenia, palpitations, progressive breathlessness, and paroxysmal nocturnal dyspnea in the last three months. She also complained of a constrictive precordial pain irradiating to dorsum, fatigue and morning hand stiffness. Seven days before admission the cardiac scintigraphy showed discrete contractility changes. Medical antecedents were *dermatosis* over than 10 years, and *rheumatism* nearly 8 years; and intermittently used deflazacort, non-steroidal anti-inflammatory drug (NSAID), and methotrexate with good clinical response. She denied occurrence of fever, anorexia, loss of weight, and urinary changes; but presented one episode of melena first attributed to acute mucosal lesions due to medicines. However, both upper digestive endoscopy and colonoscopy evaluations were unremarkable. Physical examination revealed body mass index: 28 kg/m^2; and vital signs were temperature: 36.5°C, blood pressure: 110/70 mmHg, heart rate: 78 beats/min, and respiratory rate: 16 breaths/min. There were bilateral ulnar deviation of the wrists, painful hypertrophic changes in the interphalangeal joints and in the right sternoclavicular joint, and pain in the Achilles tendons. Moreover, bilateral palmar patches with lamellar desquamation; pitting, transverse grooves, and some transverse over curvature were detected in hands nails (Figure 1). Laboratory determinations showed hemoglobin: 11.5 g/dL, hematocrit: 37.1%, leukocytes: 5198/mm^3, platelets: 105,000/mm^3, erythrocyte sedimentation rate: 41 mm/h, C-reactive protein: 0.4 mg/dL, rheumatoid factor: 11 IU/mL, anti-nuclear antibody (immunofluorescence on HEp-2 cells): negative, triglycerides: 93 mg/dL, total cholesterol: 170 mg/dL, high-density lipoprotein cholesterol: 43 mg/dL, low-density lipoprotein cholesterol: 108 mg/dL, iron: 66 mcg/dL, albumin: 3.9 g/dL, globulins: 2.7 (α1: 0.2, α2: 0.5, β1: 0.6, β2: 0.5, γ: 0.9) g/dL, vitamin D: 14.6 ng/mL, immunoglobulin (Ig) G: 978 mg/dL, IgM: 177.9 mg/dL, transferrin: 357 mg/dL, transferrin saturation: 15%, glycated hemoglobin: 5.6%, potassium: 3.7 mmol/L, urea: 18.3 mg/dL, creatinine: 0.65 mg/dL, alanine aminotransferase: 46.6 IU/L, aspartate aminotransferase: 57.2 IU/L, thyroid-stimulating hormone: 1.53 mcIU/mL, free T4: 0.9 ng/dL, serologic tests for HIV and viral hepatitis: negative. The bone scintigraphy study showed hypercaptation in her shoulders, elbows,

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Key words: Dermatosis; nail changes; rheumatism.

Conflict of interest: the authors declare no potential conflict of interest.

Received for publication: 23 November 2016.
Revision received: 27 January 2017.
Accepted for publication: 21 February 2017.

Italian Journal of Medicine 2017; 11:409-412
doi:10.4081/itjm.2017.813

wrists, hands, feet, ankles, and right sternoclavicular joint; whereas the spinal column and the sacroiliac joints were spared. Plain radiography showed reduced interphalangeal spaces mainly distal and metacarpophalangeal, subchondral sclerosis, cysts, diffuse osteophytosis, and bilateral periostitis in the third and fourth fingers, and demineralization; similar findings were seen in the feet (Figure 2).

What is your diagnosis?

Psoriatic arthritis

Clinical, laboratory and imaging data of this woman were consistent with psoriatic arthritis (PsA). Manifestations were symmetric polyarthritis in more than five joints (fingers, toes, wrists, ankles, knees, elbows and shoulders), with lesions mimicking rheumatoid arthritis.[1-4] There were also right sternoclavicular arthritis and enthesitis of Achilles tendons.[4] Psoriasis can significantly affect the functional, psychological and social well-being of the patients, causing at least moderate effect on the quality of life in 43.2% of individuals.[3,5]

Psoriasis is a chronic inflammatory condition with an estimated prevalence of 0.7 to 8.5%, which often affects extensor areas of the limbs, scalp, umbilicus and lumbar regions.[1-5] The major risk factor of susceptibility to the early onset psoriasis is HLA-Cw6 on chromosome 6; and the cytokines involved in the etiopathogenesis of psoriatic cutaneous alterations are tumor necrosis factor (TNF)-α, interferon (IFN)-γ, interleukin (IL)-2, IL-17A, IL-17F, IL-22, IL-26, IL-23, IL-20, and IL-15.[1,3] Nails changes occur in up to 90% of psoriatic patients and are more common and severe in individuals with joint involvement, affecting: i) nail matrix (pitting, leukonychia, red spots of the lunula, transverse grooves (Beau's lines)), and crumbling of the nail plate; and ii) nail bed (oil-drop discoloration, splinter hemorrhages, subungual hyperkeratosis, and onycholysis.[2,3]

PsA may develop in up to 30-42% of people with psoriasis, equally in both genders and appearing between 30 and 50 years of age, whose estimated prevalence is 0.16-1.9%.[1,2,4] Classical features of PsA are swelling and pain in peripheral joints, enthesitis and dactylitis, which more often appear approximately one decade after the onset of psoriasis.[2,4] However, PsA may precede (15-21%) or develop concurrently (7-15%) with the skin manifestations.[2,4,6] The main genetic factors involved in PsA are HLA-Cw*0602, IL-23R, and IL-12B; while the cytokines that play significant role include TNF-α, IFN-γ, IL-2, IL-1β, IL-10, IL-22, IL-23.[1] Worthy of note, there is an overlap between the genes related to PsA and those of psoriasis; moreover, the upregulation of the TNF pathway was similar if compared in both conditions.[1] The four major clinical phenotypes of PsA are synovial, entheseal, axial, and mutilans.[1] Clinically, patients with PsA present: i) asymmetric oligoarthritis; ii) symmetric polyarthritis;

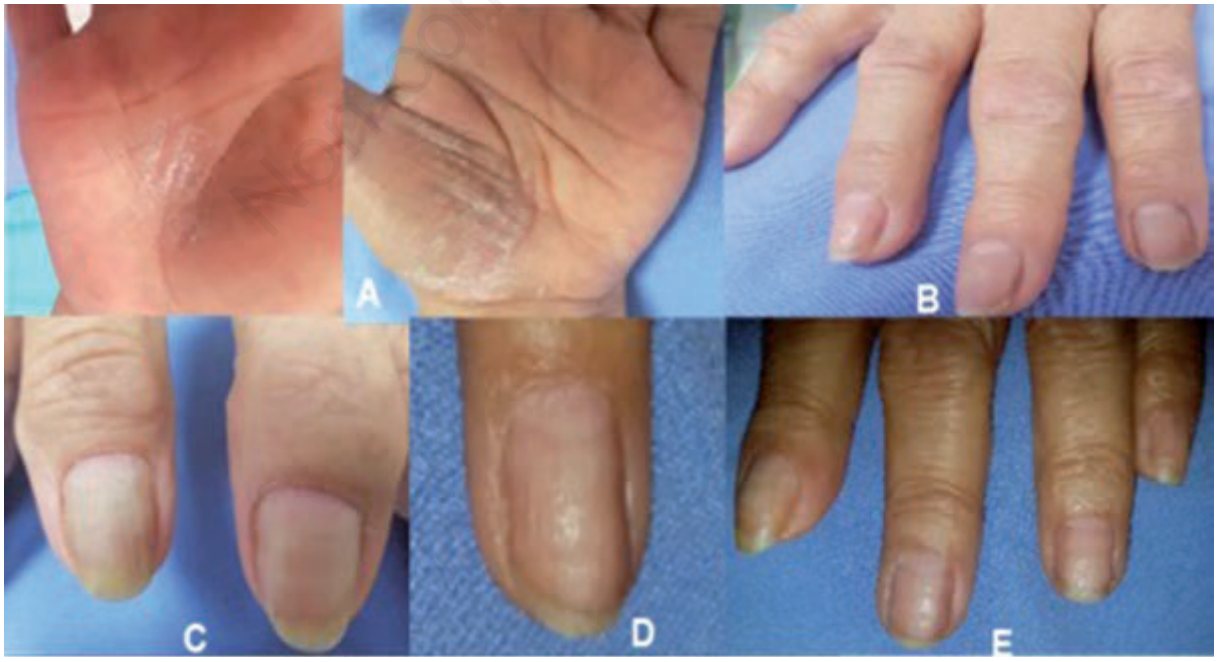

Figure 1. A) Symmetric patches of thick scaly skin localized on the palmar regions; B and C) Hypertrophic changes in the interphalangeal joints, mainly in the third, fourth and fifth right fingers, and in third left finger; D and E) Pitting and transverse grooves in the finger nails.

iii) arthritis mutilans; iv) distal interphalangeal arthritis; and v) axial spinal involvement.[4] Being a seronegative spondyloarthropathy, PsA must be distinguished from ankylosing spondylitis, reactive spondyloarthritis, enteropathic and undifferentiated spondyloarthritis.[4,6,7] Some patients complain of fatigue and morning stiffness that might suggest rheumatoid arthritis;[4] and these challenging symptoms were observed in the Brazilian old woman herein described.

The present diagnosis of PsA was established after almost a decade of clinical course. Although it was not done in the case herein reported, one should highlight the role of articular ultrasound evaluation mainly in the initial phases of PsA. The ultrasound images may detect early involvement of joints and tendons; moreover, some specific ultrasonographic patterns of PsA have been used in the differential diagnosis between PsA and rheumatoid arthritis.[8,9] Without regularity, she had used deflazacort, NSAID, and methotrexate with improvement of symptoms. Notwithstanding, the role of prevention and control of risk factors of severe forms of disease and associated comorbidities should be emphasized in this group of patients.[1,5] Smoking, alcohol abuse, obesity, anxiety and depression, must be all targeted for follow-up.[1,5] Control of psoriasis and PsA involves topical and systemic tools including: phototherapy, photodynamic and laser therapy, NSAID, corticosteroids, calcipotriol, tacrolimus, tazarotene, methotrexate, cyclosporine, acitretin, apremilast, and TNF-α, IL-17, and IL-23 inhibitors.[1,3,5]

Pro-inflammatory cytokines and leptin also play a significant role in atherosclerosis,[7] and recent studies found higher cardiovascular risks in people with psoriasis and PsA;[1,5,7] and administration of anti-inflammatory drugs or TNF-α inhibitor can reduce the risk markers.[1] The occurrence of angina, myocardial infarction, and arterial hypertension; as well as the cardiovascular morbidity is more elevated in patients with PsA than in general population,[1,2,5] and comorbidities like diabetes mellitus, dyslipidemia, and depression should be assessed.[5] Moreover, microscopic inflammatory bowel lesions have been described in patients with PsA.[6] The patient presented with cardiovascular symptoms on admission, and an episode of melena; hence, the hypothesis of causal relationships with psoriasis was an additional concern. Neverthe-

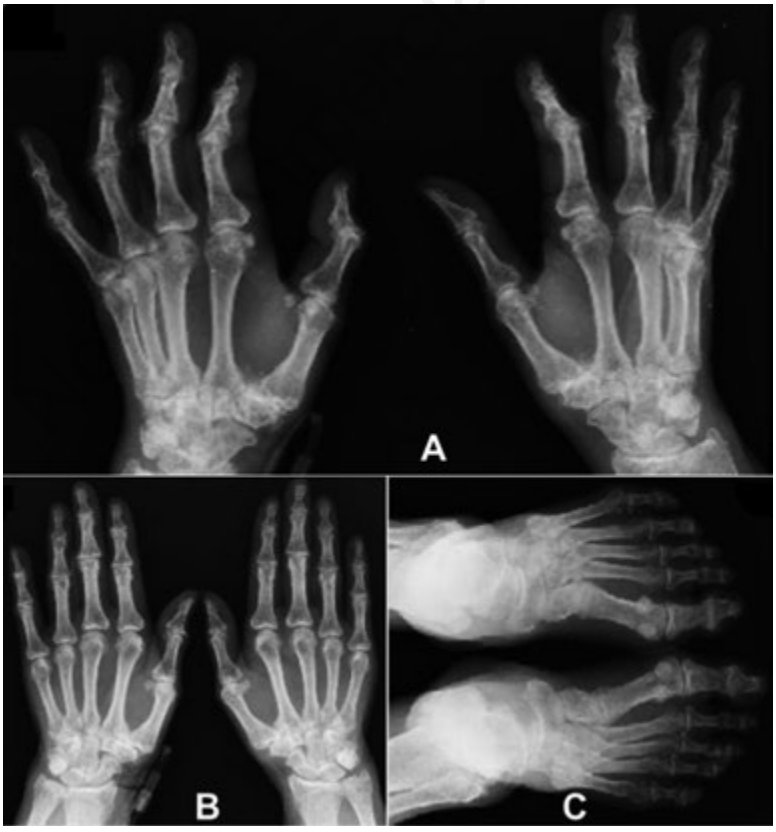

Figure 2. Plain radiography features of bones and joints from the upper (A, B) and lower (C) extremities. A) Reduced interphalangeal spaces mainly distal and metacarpophalangeal, subchondral sclerosis and cysts, diffuse osteophytosis, and bilateral fluffy periostitis in the third and fourth fingers and demineralization; and B) Reduction of interphalangeal spaces, subchondral sclerosis and cysts, diffuse osteophytosis, and normal metatarsophalangeal structures.

less, the possibility of casual association between these conditions was not discarded in the setting of the present report with unique purpose of diagnostic exercise based on images. Actually, consistent data about possible shared etiopathological phenomenon are lacking; but further research and well conducted case studies would contribute to better clarify this matter.[10]

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