Adult-onset Still's disease with ankylosis of the distal interphalangeal joints: beyond psoriatic arthritis

Sirs,

Adult-onset Still's disease (AOSD) is a systemic inflammatory disorder with unknown aetiology characterised by daily spiking fever, evanescent rash, arthritis, lymphadenopathy, hepatosplenomegaly, leukocytosis, increased inflammatory markers, and hyperferritinaemia. Unlike the well-recognised carpal ankylosis, radiographic involvement of the distal interphalangeal (DIP) joints has rarely been described in AOSD (1-6). We report a case of a 32-year-old woman with a well-characterised AOSD, who evolved with a difficult-to-control polycyclic clinical course and chronic arthritis, resulting in ankylosis of carpal bones and DIP joints.

The diagnosis of AOSD was based on the presence of typical manifestations: 4-week history of daily fever (up to 40ºC), polyarthritis, maculopapular evanescent eruption over her trunk, cervical and axillary lymphadenopathy, pleuritis, and hepatosplenomegaly. At the time of diagnosis, laboratory tests showed normochromic normocytic anaemia, neutrophilic leucocytosis (23.900/mm^3; reference:4.000-11.000), hyperferritinaemia (16.675 ng/mL; reference:15-150), increased erythrocyte sedimentation rate (77 mm; reference:2-12), and mildly elevated transaminases. Tests for HIV, hepatitis B/C, syphilis, rheumatoid factor, anti-citrullinated peptide antibodies, antinuclear antibodies, and blood cultures were negative.

She was initially treated with high-dose prednisone and methotrexate, with clinical and laboratory improvement. However, over 10 years of follow-up, she underwent several lines of treatment due to the chronicity of the joint condition, recurrence of systemic symptoms during steroid weaning, gastrointestinal intolerance to oral medications, and therapeutic failure to anti-TNF inhibitors. During the above-mentioned period, the patient was treated with glucocorticoids, methotrexate, cyclosporine, leflunomide, mycophenolate mofetil, infliximab, and adalimumab. Finally, it was possible to achieve disease remission and satisfactory weaning of glucocorticoids with monthly infusions of tocilizumab. Due to healthcare system considerations, the patient has not had access to tocilizumab since the disease onset, nor to interleukin 1 inhibitors.

Radiographs of the hands/wrists performed 10 years after the disease onset showed bilateral radiocarpal joint-space narrowing, ankylosis of mediocarpal and carpometacarpal joints in the right wrist, and juxta-articular new bone formation, particularly in the 2nd left proximal interphalangeal joint. In addition, ankylosis of several DIP joints with asymmetrical distribution was evident (5th left and 2nd, 3rd and 5th right DIPs), resembling a radiographic pattern of psoriatic arthritis (PsA) (Fig. 1).

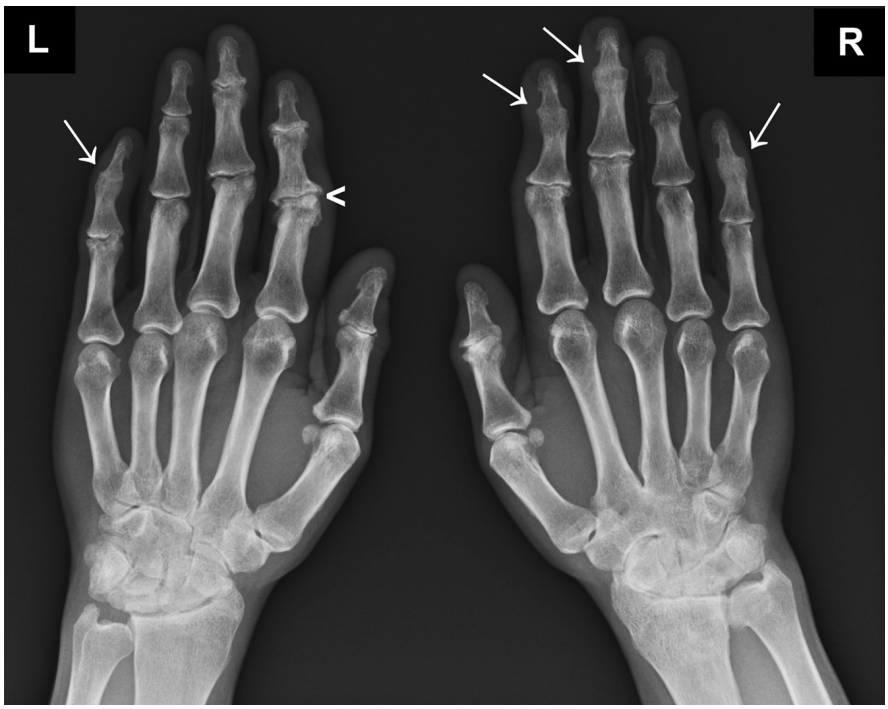

Fig. 1. Radiographs of the hands and wrists. Bilateral radiocarpal joint-space narrowing, ankylosis of mediocarpal and carpometacarpal joints in the right wrist, and juxta-articular new bone formation, particularly in the 2nd left proximal interphalangeal joint (arrowhead). Ankylosis of DIP joints with asymmetrical distribution (5th left and 2nd, 3rd and 5th right DIPs) (arrows). R: right; L: left.

Musculoskeletal involvement is a common feature of AOSD. Arthralgia or arthritis lasting ≥2 weeks are major criteria for the classification of AOSD, and generally concur with the typical fever spikes (7). About 35-57% of the patients may develop persistent synovitis with potential for carpal ankylosis, a well-known sequel of AOSD (2, 6, 8).

Severe and often asymmetric involvement of DIPs with ankylosis are highly suggestive features of PsA (9). However, the patient reported here had no personal/family history of psoriasis, dactylitis, and nail dystrophy. Although PsA may rarely precede the appearance of the skin disease, this seems unlikely for the present case, as the patient failed to respond to anti-TNFs approved for the treatment of PsA, but showed excellent response with an IL-6 inhibitor, which is not an established treatment for PsA (10).

Interestingly, a recent study reported eight patients with systemic juvenile idiopathic arthritis or AOSD who presented characteristics of spondyloarthritis (SpA) during their disease course (6). In the adult cohort (76 patients with AOSD), two patients fulfilled the ASAS criteria for axial SpA and three patients met the CASPAR criteria for PsA, of which two had DIP joints involvement. The authors argued in favour of a phenotype shift rather than an overlap, discussing the role of the IL-1β, IL-18 and IL-6 involved in the AOSD flares as contributing cytokines to the differentiation of Th17 cells, which are key in SpAs (6).

In summary, our case demonstrates the severe involvement of DIP joints following a PsA-like pattern in a patient with AOSD who did not fulfil the CASPAR criteria and who was responsive to IL-6 blockade.

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