

Acute Onset Polyarthritis with Pitting Edema: Is it RS3PE?

Dear Editor,

A 48-year-old female presented with pain and swelling in the bilateral proximal interphalangeal (PIP), metacarpophalangeal (MCP) and wrist joints for the past 20 days. It was acute in onset, severe in intensity to such an extent that she was unable to make a fist. It was associated with acute onset of diffuse painful swelling over the dorsum of hands. History of morning stiffness was present, lasting up to 1 hour, and eases only slightly with the consumption of painkillers prescribed by a local general practitioner.

On local examination, there was diffuse pitting and tender edema over both hands extending up to wrist, showing a 'boxing glove' appearance (Fig. 1A). A clinical provisional diagnosis of remitting seronegative symmetrical synovitis with pitting edema (RS3PE) was made.

On investigation, it was found that the patient's erythrocyte sedimentation rate (ESR) = 41 mm (>20 mm), C-reactive protein (CRP) = 24 (>5), rheumatoid factor (RF) = 85 (+ve) and anti-cyclic citrullinated peptide (anti-CCP) = 3.25 (-ve). X-ray of bilateral hands was normal without showing any evidence of erosions. Ultrasonography of hands reveals extensor tenosynovitis of bilateral hands. These gave a confused picture between rheumatoid arthritis (RA) and RS3PE. A diagnosis of RA was initially preferred, it being a more common disease and the patient had a positive RF.

The patient was managed with disease-modifying antirheumatic drug (DMARDs) and low-dose prednisolone (20 mg daily). After 10 days, all her symptoms were completely resolved (Fig. 1B) and she stopped taking her medications. For the past 6 months, she had been completely asymptomatic without taking any medication. She had been

continuously evaluated for any symptoms and signs of underlying malignancy and none have been reported so far.

Discussion

Ever since McCarty described the first case of RS3PE, clinicians have been puzzled over whether it should be considered as a syndrome or as a separate disease entity. McCarty's original diagnostic criteria¹ for RS3PE included seronegative symmetrical synovitis with pitting edema of hands, male predominance, old age, good response to corticosteroids and long-term remission after withdrawal of steroids. Since McCarty's original description, over 150 cases of RS3PE have been reported with its varied manifestations. The original diagnostic criteria have been challenged by unilateral,² female sex,³ young² and positive anti-CCP⁴ cases. The knowledge on the nature of RS3PE is still evolving and its clinical spectrum is still unpredictable.

RA is also known for its heterogeneous manifestations, remitting-relapsing clinical course and variable response to therapy. RF may be detected in 1% to 5% of the healthy population but anti-CCP antibodies, rather than RF, are more specific for the diagnosis of RA. Response to DMARDs takes 6 to 12 weeks to appear. Patients' response to glucocorticoids is faster but it is transient and does not provide a sustained response in RA patients. However, patients with RS3PE are known to respond to low-dose steroids with sustained remissions.⁵

The spectrum of RA and RS3PE has always overlapped. Even in McCarty's RS3PE series of 150 patients, 3 men were later classified to have definite RA.⁵ Various immunological

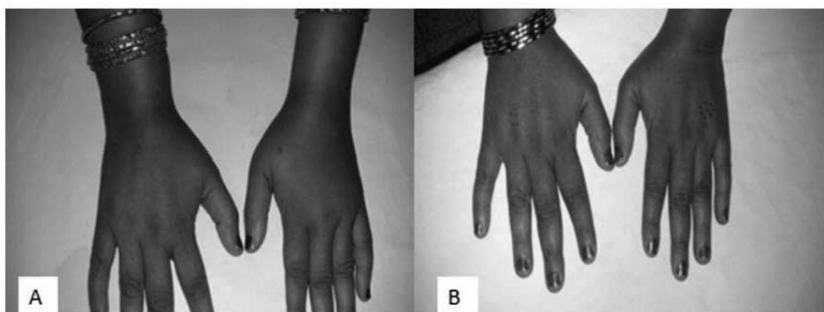


Fig. 1. Patient at initial presentation with edema in both hands (A). After 10 days, the swelling had completely subsided (B).

studies have underlined the similarities and differences between the immune-pathogenesis of both RA and RS3PE. While the role of interleukin-6 (IL-6) has been identified as equally important in both disease groups,^{3,6} vascular endothelial growth factor (VEGF) have been found to be more pronounced in the RS3PE than the RA group.⁷ Also, serum matrix metalloproteinase-3 (MMP-3) has been reported to be significantly elevated in RS3PE that is associated with underlying malignancy.⁸

Conclusion

RS3PE has always puzzled rheumatologists as it is a mimicker to RA. Although it is now recognised as a distinct clinical entity with definite clinical and radiological characteristics, the real nature of the disease is still unknown. In this present case, a positive RA factor in a patient with symmetrical polyarthritis with dramatic onset of pitting edema and who showed an excellent response to corticosteroids meant that a diagnosis of RS3PE was preferred over RA.

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