

## CASE REPORT

# REMITTING SERONEGATIVE SYMMETRICAL SYNOVITIS WITH PITTING OEDEMA

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Remitting seronegative symmetrical synovitis with pitting oedema (RS<sub>3</sub>PE) is a rare clinical entity often mimicking more common diseases like rheumatoid arthritis (RA) and polymyalgia rheumatica (PMR). Although the exact aetiology is not clear, yet it responds dramatically to low doses of steroids with excellent prognosis unlike RA and PMR. We report a case of 72 year old male agriculturist by profession presenting with acute polyarthritis and pitting oedema of both hands and feet as well as pretibial areas, diagnosed to be a case of RS<sub>3</sub> PE.

**Keywords:** Remitting, Seronegative, Synovitis, Elderly

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## INTRODUCTION

Remitting seronegative symmetrical synovitis with pitting oedema (RS<sub>3</sub>PE) is a distinct clinical entity and HLA B7 positive. It mimics more common diseases like rheumatoid arthritis (RA) and polymyalgia rheumatic (PMR) and differentiation can be established by distinct clinical, radiological and immunological characteristics. The definite diagnostic criteria of RS<sub>3</sub>PE include presence of seronegative acute polyarthritis, pitting oedema of hands and/or feet, old age, male dominance, excellent response to low dose steroids with long term remission. Hence it is a treatable condition, though rare.<sup>1</sup> Although it is a benign condition, sometimes it may present as paraneoplastic manifestations of malignant disorders like non-Hodgkin lymphoma, chronic lymphatic leukaemia, pancreatic carcinoma, lung cancer, breast cancer, prostate cancer, bladder cancer, endometrial carcinoma and gastric carcinoma.<sup>2-4</sup> It can be associated with polyarteritis nodosa, pneumonia and amyloidosis.<sup>5,6</sup> There is frequent association with knee synovitis and carpal tunnel syndrome.<sup>7</sup>

## CASE REPORT

A 72 year old male farmer presented to the hospital with chief complaints of severe pain involving wrist, metacarpophalangeal and interphalangeal joints of both hands for 23 days. He was unable to make a complete fist. Local examination of joints revealed inflammation of flexor tendon sheaths of hands and feet along with tenderness on palpation. There were multiple tender swellings over the dorsum of hand and wrist as well as pitting oedema over dorsum of hands, feet and pretibial areas. The axial skeleton and proximal joints of the limbs were spared. General physical examination and systemic examinations were unremarkable. Laboratory investigations showed: haemoglobin 11.7g/dl, total leukocyte count 9200/cu mm, platelets 2.30 lac/cu mm, and ESR

85mm at the end of 1<sup>st</sup> hour. Differential leukocyte count (DLC) was N<sub>65</sub>, L<sub>32</sub>, M<sub>2</sub>, E<sub>1</sub>. Other laboratory investigations were: total serum proteins 6 gm/dl, serum albumin 3.8 g/dl, CRP 30 mg/ml, blood sugar fasting 90 mg/dl, blood urea 46 mg/dl, and serum creatinine 1.1 mg/dl. Rheumatoid factor and antinuclear antibody were negative. X-ray chest, thyroid profile, urine examination and 2D Echo were normal. X-ray of the joints showed no evidence of erosion. Ultrasonography of hands, wrist and feet revealed evidence of tenosynovitis involving flexor and extensor tendons. HLA typing of the patient was not done due to financial constraints. In view of the above findings, a diagnosis of remitting seronegative symmetrical synovitis with pitting oedema was made. The patient was put on low dose of steroids i.e., prednisolone 20 mg/day with enteric coated aspirin 352 mg given thrice daily after meals along with antacid, calcium and vitamin D supplementation. He showed dramatic improvement with subsidence of joints pain and oedema along with improvement of hand grip strength within 3 weeks of start of therapy. He was discharged after 4 weeks with no residual disability and normal ESR. Further follow up did not reveal any relapse.

## DISCUSSION

MC Carty *et al* in the year 1985 first described RS<sub>3</sub> PE syndrome in 10 patients of which 8 were males and 2 females.<sup>6</sup> He along with other colleagues Hunter & Russell in the year 1990 added 13 more cases to establish the clinico-radiological pattern of the disease.<sup>8</sup> Now RS<sub>3</sub>PE is discussed as a distinct clinical entity showing male predominance (M:F=2:1) with involvement of big and small joints of hands associated with tenosynovitis especially of flexor tendons of hands and accompanied by pitting oedema of dorsum of hands although oedema of feet or pretibial areas may or may not be observed.<sup>9</sup> Kundu AK in his study<sup>10</sup> has reported 5 cases occurring in old age showing significant improvement with the use of low dose steroids without

any regional disability. RS<sub>3</sub>PE is characterized by acute onset of symmetric polysynovitis, pitting oedema of dorsum of hands and/or feet with negative rheumatoid factor and anti CCP along with positive inflammatory markers such as ESR and CRP.<sup>6</sup> Regarding aetiology of pitting oedema, it could be explained on the basis of marked extensor tenosynovitis as documented on MRI.<sup>11</sup> Agarwal *et al*<sup>12</sup> in their study have documented ultrasonography as a gold standard tool and most effective modality to diagnose tenosynovitis for evaluation of RS<sub>3</sub>PE and they have also shown that extensor synovitis is much more common than flexor tenosynovitis as reported in our case. Tenosynovitis of both flexor and extensor tendons at the wrist and extensor tendons of the feet is the hall mark of RS<sub>3</sub>PE as reported in the present case. Role of vascular endothelial growth factors has been postulated in the pathophysiology of RS<sub>3</sub>PE.<sup>12</sup> Response to steroids is excellent as in our case. If there is poor or no response, one should think of underlying paraneoplastic syndromes<sup>1,2</sup> since complete remission was observed in all cases after total resection of the tumour suggestive of para neoplastic syndrome. RS<sub>3</sub>PE mimics RA and PMR but differs from them in the clinical, radiological and immunological characteristics. PMR is more frequent in females, involves shoulder and pelvic girdle with associated systemic symptoms, pitting oedema is rare, HLA-DR4, frequent relapses and recurrences; and responds only to steroids.

Hence differential diagnosis includes seronegative rheumatoid arthritis, acute sarcoidosis, ankylosing spondylitis, psoriatic arthropathy, mixed connective tissue disease, reflex sympathetic dystrophy, chondrocalcinosis, and amyloid arthropathy.

## CONCLUSION

RS<sub>3</sub>PE is a distinct rare clinical entity with excellent prognosis and dramatic response to low dose steroids unlike RA and PMR. It must be suspected in all

elderly patients presenting with acute polysynovitis and pitting oedema.

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