

Tuberculous Rheumatism (Poncet's Disease)

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INTRODUCTION

Osseous tuberculosis can be present with unifocal or multifocal bony involvement. Although multifocal involvement of the skeletal system in areas where tuberculosis is endemic is not a rare presentation, A case of atypical skeletal tuberculosis mimicking multiple secondary metastases on radiologic and scintigraphic imaging is presented to emphasize the contribution of bone scintigraphy in the assessment of osseous tuberculosis in typical and atypical presentations.

Case Presentation:

A 29-year-old female, presented in a private hospital with fever for two months ranging from 38-40 °C, polyarthritis affecting small joints of the hands, wrists, elbows and both knees with morning stiffness of half an hour, alopecia, easy fatigability with no other autoimmune manifestations and positive rheumatoid factor. She was diagnosed as a case of RA and treated by methotrexate 7.5 mg/week plus 10 mg prednisone but unfortunately, there was no improvement and she stopped medications.

On December 2013, she presented to us with fever of 39 °C, tachycardia about 110 beats/min, pale toxic faces, alopecia, generalized bony aches, marked anorexia, loss of weight, tenderness over previously mentioned joints and over cervical and thoracic vertebrae, sternum and both sacroiliac joints with no swelling, deformity or limitation of movement, other systems were clinically free. Her ESR was 120 mm, CBC showed moderate microcytic hypochromic anemia with lymphopenia and thrombocytosis, normal reticulocyte count, low iron and TIBC but normal ferritin. Serum chemistry revealed a serum albumin of 2.8 g/dl and normal ALT, AST, kidney function tests, LDH and alkaline phosphatase. Immunological profile was negative apart from positive RF.

X rays on affected bones were done and were free, cervicodorsal MRI revealed diffuse bone marrow (BM) lesions metastatic affecting the sternum, C7 and D3,4,5,8,9,10 and 12.

Tumor markers namely PSA, CA125, CA 19-9 and AFP were within normal ranges, serum and urinary protein electrophoresis showed polyclonal gammopathy. BM aspirate and biopsy revealed mild hypercellularity with dysplastic changes a picture consistent with myelodysplastic syndrome.

Tc99m MDP bone scan was done and revealed multiple active deposits located in sternum, dorsolumbar vertebrae, both sacroiliac joints and left iliac bone; a picture impressive of disseminated bone marrow infiltrative lesions.

Few days later patient developed tender reddish nodular lesion related to left iliac bone and lower three ribs from which biopsy was taken together with part of underlying left iliac crest that revealed caseating epithelioid granuloma and we diagnosed the patient to have Poncet's disease.

Quadruple antituberculous treatment (Rifampicin, Isoniazide, Pyrazinamide and Ethambutol) was consequently started and the patient markedly improved very soon.

DISCUSSION

Tuberculosis (TB) is a major public health concern that remains the leading cause of death among infectious diseases with estimated 1.2–1.5 million people died from TB in 2010.¹

Delayed diagnosis and low index of suspicion are the main reasons why the incidence of TB remains high but atypical presentation of the disease can also be a contributing factor.²

In contrast to the usual tuberculous arthritis which is monoarticular, infectious and destructive, tuberculous rheumatism (Poncet's disease) is a non-destructive para-infective polyarthritis firstly described by Poncet in 1897, occurs in patients with active tuberculosis and resolves completely on anti-tuberculosis therapy.³ It is a rare disease in which there is no direct mycobacterial involvement of joints and no other cause of polyarthritis can be found.^{4,5} Our patient is a 29 years old female which is well within the age range 2-40 years and the gender reported in literature indicating that Poncet's disease predominantly occurs in young adults and children.⁶ The onset of arthritis is usually acute or subacute but chronic cases, although rare, have been reported.⁷

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Some authors described the disease as asymmetrical oligoarthritis, usually in joints of the lower limbs.⁸ Regarding our case there was symmetric involvement of large joints (knees) which was consistent with other case series³ opposite to small joints that are symmetrically affected.

The axial skeleton tends not to be involved⁷ even Novaes GS et al. mentioned that lack of axial, vertebral column and sacroiliac impairment is a part of a proposed criteria to diagnose this disease after assessing a series of 25 patients with Poncet's disease but our case included axial skeleton affection similar to what happened in tuberculous arthritis. It has been suggested that this disease mainly occurs in patients with extrapulmonary TB and that the presence of erythema nodosum is an important hallmark of this disease⁹ but in our case, there was no evidence of extrapulmonary TB or erythema nodosum.

The exact pathogenesis of the disease is unknown but many theories were postulated like the genetic theory including HLA linked hyperresponsiveness to Mycobacterium antigen¹⁰, the immunological theory on the basis of finding a hypersensitive immune response to tuberculoprotein¹¹; and cross reactivity on the basis of finding antigenic

similarity between human cartilage and fraction of Mycobacterium tuberculosis¹². BCG immunotherapy given to cancer patients has been shown to produce arthritis as an adverse effect, possibly caused by a similar adjuvant effect^{13,14}. Lastly, the tubercular bacilli have been found to be arthritogenic on observing chronic synovitis in animals injected with heat killed desiccated TB bacilli¹⁵.

As in the literature, our case showed negative results for serological tests for autoimmunity and the tuberculin test, as well as altered acute phase proteins¹⁶. In the literature, no microbiological evidence of mycobacterium invasion in the affected joints should be present to diagnose Poncet's disease¹⁷ but unfortunately, in our case, there was no joint fluid to be examined for presence or absence of active TB and we depended on the joint with higher bone concentration of technetium in bone scan for biopsy that diagnosed the case.

Almost all patients treated with antituberculous drugs had resolution of symptoms on therapy and our patient also improved without use of NSAIDs. We suggest that tuberculosis should be included in the differential diagnosis of polyarthritis.

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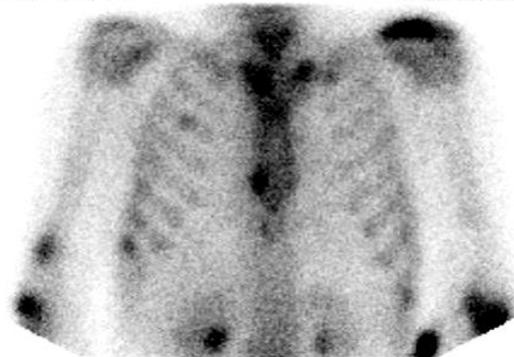
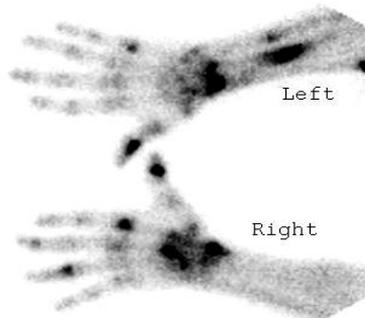


IMAGE 003

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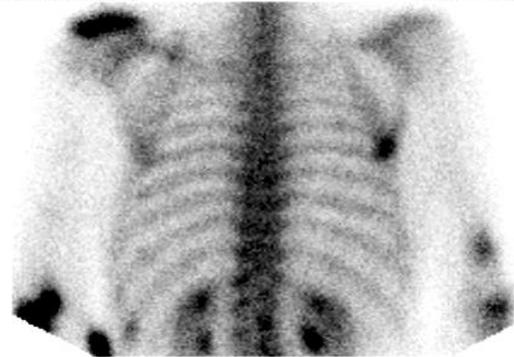
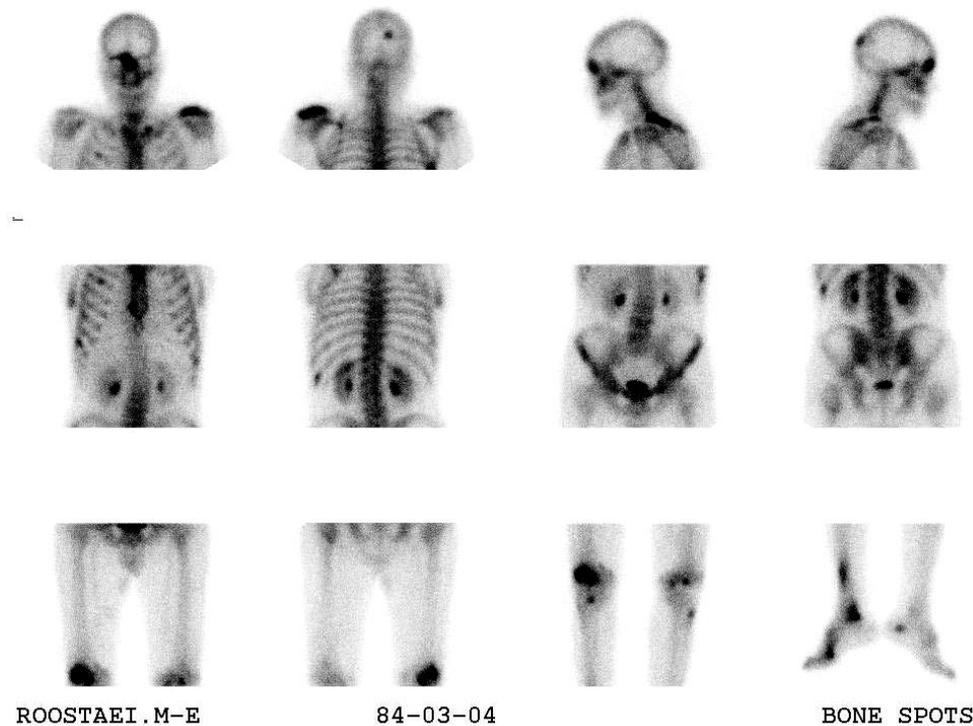


IMAGE 004



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