

**CHRONIC OSTEOMYELO-ARTHRITIS DUE TO BRUCELLA: A RARE CASE****DR ANITA PJAVALGI<sup>1</sup>, DR VIJAYALAXMI S PATIL<sup>2</sup> AND DR DIVYA PURSNANI<sup>3</sup>***1.Assistant Professor, Department of pathology, BLDEU Shri B M Patil Medical College, Vijayapura**2.Assistant Professor, Department of pathology, BLDEU Shri B M Patil Medical College, Vijayapura**3.Post Graduate, Department of pathology, BLDEU Shri B M Patil Medical College, Vijayapura***ABSTRACT**

Human brucellosis alias Malta fever is a zoonotic infection caused by the genus brucellae. Osteomyelitis, spondylitis, sacroiliitis and peripheral arthritis are various osteoarticular presentations of brucellosis. Total complication risk is 1-35 percent. Osteomyelitis due to brucella is a rare entity in our population. A 54 year old male sought care in our orthopaedic opd with complaints of pain in right hip since one and half years. Pain was gradual in onset, dull aching, non-radiating and associated with reduced movement at hip joint. X-Ray and MRI findings showed destruction and erosions of right femoral head and acetabulum. Serological test were positive for Brucella antibodies. He underwent Girdle stone osteotomy and histopathological diagnosis of chronic osteomyelitis with avascular necrosis of head and neck of right femur due to Brucellosis was done. Brucellosis one of the neglected zoonotic disease, should be considered whenever there is a febrile illness with rheumatological complaints. Early recognition of the cause, appropriate antibiotic treatment, and regular long term follow up will improve the outcome of patients and lessen economic ramifications.

**KEY WORDS:** Brucella/ Osteomyelitis/arthritis/ head of femur.

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## INTRODUCTION

Human brucellosis alias Malta fever and undulant fever is a zoonotic infection caused by the genus brucellae.<sup>1,2</sup> Brucella is a small, non-motile, non-encapsulated, gram-negative, coccobacillus that grows slowly in-vitro. Four species of brucella are known to be pathogenic for humans.<sup>3</sup> Brucellosis is transmitted to humans either by direct contact or consumption of unpasteurized dairy products from infected animals or occupational contact.<sup>3,4</sup> Osteomyelitis, spondylitis, sacroiliitis, , peripheral arthritis, bursitis, and tenosynovitis are various osteoarticular presentations of brucellosis.<sup>5</sup> Total complication risk is 1-35 percent with musculoskeletal complication risk being 20–30 per cent.<sup>6</sup> This variability was attributed to the differences in the pathogenicity of Brucella spp. as studied by Aydin and colleagues.<sup>4</sup> Osteomyelitis due to brucella is a rare entity in our population.

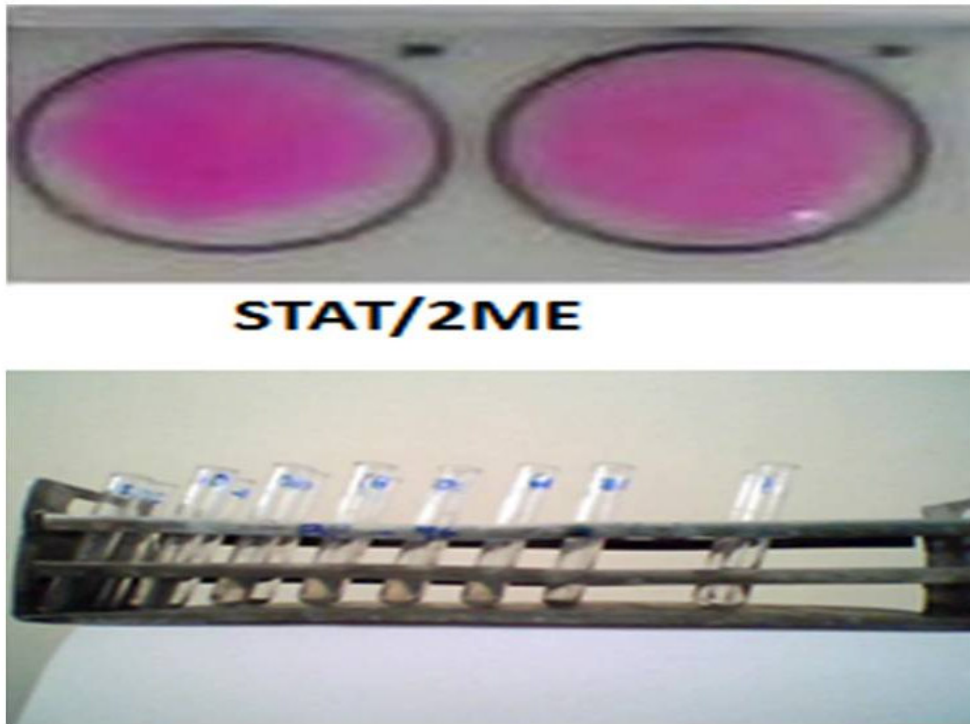
## CASE REPORT

A 54 year old male sought care in our orthopaedic opd with complaints of pain in right hip since one and half years. Pain was gradual in onset, dull aching, non-radiating

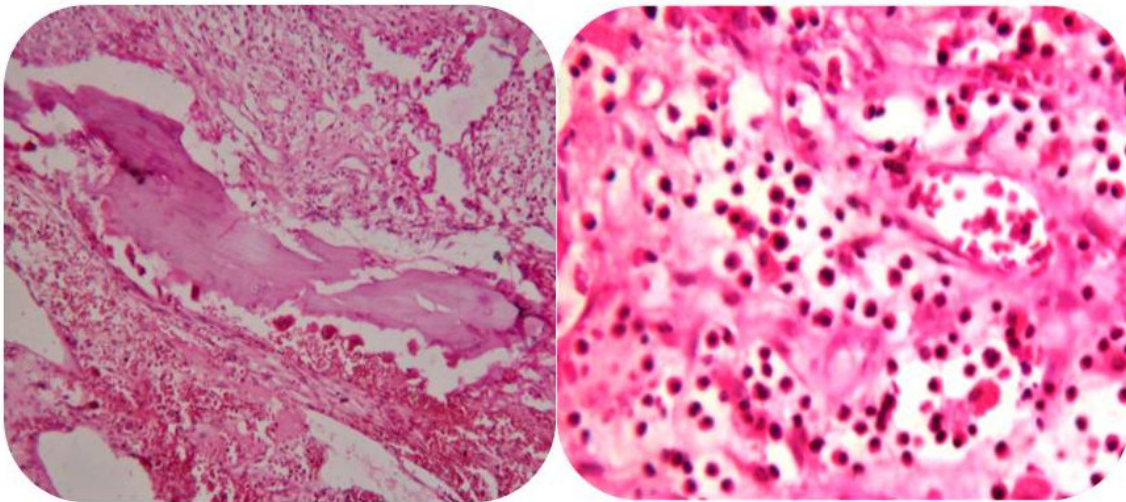
and associated with reduced movement at the hip joint. On examination his vitals were normal, pallor present, afebrile (during examination ), reduced movement, tenderness and rise in temperature at right hip joint. In rest of the systemic examination no abnormality was detected. His haemoglobin on admission was 6.5 gm/dl following which he was given five blood transfusions. X-Ray and MRI findings showed destruction and erosions of right femoral head and acetabulum with abnormal heterogenous enhancement of marrow, synovium and joint collection, superior subluxation of right hip joint with severe joint space narrowing and lumbar spondylosis(Fig 1). CRP was positive, Rose Bengal Plate Test (RBPT) was positive(Fig2). Patient was positive for brucella antibodies (sero-reactive) with Standard Agglutination Test (SAT) being 1280 I.U and 2-Mercaptoethanol brucella agglutination test (2ME) being 1280 I.U. Blood culture was negative. He underwent Girdle stone osteotomy and histopathological diagnosis of chronic osteomyelo-arthritis(Fig3) with avascular necrosis of head and neck of right femur(Fig4) was given.



**Fig 1: radiographic image of hip joint  
left hand side before surgery  
right hand side after surgery**

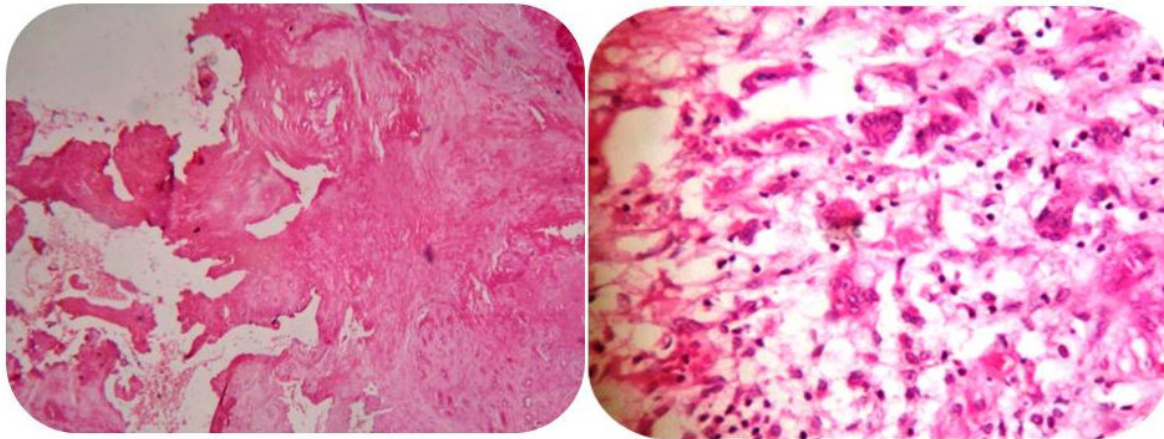


**Fig 2 : RBPT**  
**Serological test positive**



**Fig 3 : Histopathology H&E stain**  
**Left hand side : dead bone surrounded by inflammatory reaction (200X)**  
**Right hand side : plasma cell infiltration (400X)**





**Fig 4 : Histopathology H&E stain**

**Left hand side : avascular necrosis of head of femur(200X)**

**Right hand side : multinucleated giant cell reaction (400X)**

## DISCUSSION

In humans, brucellosis presents as a systemic infection with varied clinical spectrum.<sup>7</sup> Clinical features of osteoarticular complications are nebulous. In presence of some indicative symptoms, like remitting fever, chills, sweating and osteoarticular involvement, the clinician should consider brucellosis as a differential diagnosis.<sup>[8]</sup> Brucellosis may affect any region in the musculoskeletal system.<sup>4</sup> 70-90% cases of osteomyelitis are due to staphylococci, other rare organisms are klebsiella, proteus, areobacter and brucella.<sup>9</sup> Clinicians must foster a high degree of clinical suspicion based on epidemiological and clinical details for early and prompt diagnosis.<sup>10]</sup> A probable diagnosis may be made by demonstrating specific antibodies in the serum, but isolation of the causative agent from blood, bone marrow or other tissues is the gold standard.<sup>10</sup> Serologic methods serve as an important tool for screening and early diagnosis, especially in endemic areas.<sup>8</sup> Various studies conducted around the world/globally reported 0-85 % frequency of osteoarticular involvement in brucellosis. Among the studies done in the Mediterranean Region of Turkey,

Demiroglu et al. Tasova et al, Pourbagher et al and Aydin et al reported ratios of 33.7%, 36.5%, 45.4% and 43% respectively, while 69% was reported by Gür et al in the Southeast Anatolia Region.<sup>4</sup> Osteoarticular involvement is in the form of osteomyelitis, arthritis, spondylitis, bursitis, tenosynovitis. Large joints (especially sacroiliac joint) are usually involved in arthritis.<sup>4</sup> Brucellae osteomyelitis in our case was diagnosed by triad of clinical presentation, radiological findings, positive serological tests for brucella antibodies. MRI and CT-Scan are an important diagnostic tool.<sup>4</sup>

## CONCLUSION

Diagnosis of brucellosis, one of the neglected zoonosis globally should be considered whenever there is a febrile illness with rheumatological complaints. Early recognition of the cause, appropriate antibiotic treatment, and regular long term follow up should improve the outcome of patients and lessen economic ramifications (which occur due to loss of time by patients from normal daily activities and losses in animal production).<sup>11,12</sup>

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