Journal of Cytology & Histology

Bhuyan et al., J Cytol Histol 2012, 3:4
DOI: 10.4172/2157-7099.1000147

Case Report Open Access

Cytodiagnosis of Tubercular Dactylitis with Skin and Lymph Node Lesions in an Immunocompetent Patient

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Abstract

Tubercular dactylitis is an extremely rare entity. To the best of our knowledge, we are reporting for the first time tuberculosis of phalanx along with cutaneous nodule and lymph nodes in an immunocompetent patient even in absence of a detectable primary focus. A 35 year old male presented with a hard swelling in proximal phalanx of left ring finger. He had a cutaneous nodule on right index finger and enlarged epitrochlear and axillary lymph nodes on the ipsilateral side. In X- Ray, a lytic lesion destroying whole proximal phalanx was seen with chest X- Ray being normal. HIV ELISA was negative. Cytology from cutaneous nodule and lymph nodes depicted the picture of a granulomatous lesion. Biopsy, culture of bone tissues and polymerase chain reaction confirmed the lesions to be tubercular. Tubercular dactylitis along with other tubercular lesions is an extremely rare condition and the lesions must be differentiated from other granulomatous conditions to advocate specific therapy.

Keywords: Tubercular dactylitis; Cutaneous nodule; Lymph node

Introduction

Tubercular involvement of phalanx is an unusual presentation [1,2]. In skeletal involvement, spine is the most frequent site [3]. Tubercular dactylitis, although most frequently encountered in children, also occurs in adults [4]. Tubercular lesions taken together in an immunocompetent patient involving phalanx, cutaneous nodule, axillary and epitrochlear lymph nodes has not been yet reported in the literature although, tubercular dactylitis along with cutaneous involvement has already been established [5]. In our case, there was tubercular involvement of multiple sites without any pulmonary involvement in an HIV negative patient.

Case Report

A 35-year-old male presented with a hard swelling of 2 cm diameter involving proximal phalanx of left ring finger of 2 months duration (Figure 1). On examination, there was also a cutaneous nodule of 0.5 cm, over the base of right index finger and had enlarged, mobile epitrochlear and axillary lymph nodes of about 2 cm, on the ipsilateral side. There was no history of recent trauma to the finger, fever, weight loss, cough and tingling sensation. On examination, he had no hypopigmented patch or nerve thickening.

All the hematological parameters were within normal limits besides raised ESR of 90 mm in 1st Hr (Westergren) and Mantoux test of 25 mm. Sickling test was negative. X- Ray revealed lytic lesion destroying whole proximal phalanx of left ring finger (Figure 2). Chest X- Ray was normal. X- Ray of right hand revealed no bony abnormality and it was a soft tissue swelling. Blood, throat swab and urine cultures were sterile. Multiple Ziehl-Neelsen (Z-N) stain of induced sputum samples was negative for acid- fast bacilli. Rheumatology serology (ANA, Anti-ds DNA, P- ANCA, C- ANCA), syphilis serology, HIV ELISA was negative.

In Fine Needle Aspiration (FNA) of proximal phalanx of left ring finger swelling revealed epithelioid cell clusters, caseating necrosis, multinucleated giant cells and few osteoblasts (Figure 3). FNA of both epitrochlear and axillary lymph nodes showed caseating necrosis, epithelioid cells and Langhans giant cells in the background of lymphoid cells and cutaneous nodule had a similar picture of granulomatous

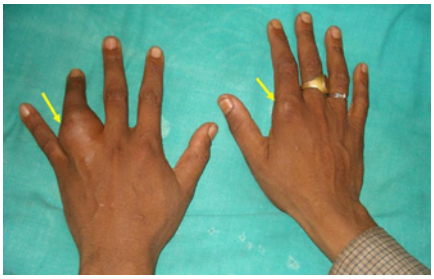

Figure 1: A swelling in proximal phalanx of left ring finger and a subcutaneous nodule over base of right index finger.

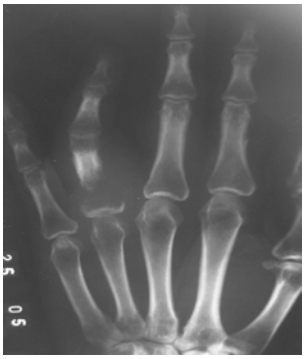

Figure 2: X-Ray of left hand showing lytic lesion destroying proximal phalanx of left ring finger.

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Received May 19, 2012; **Accepted** June 29, 2012; **Published** July 02, 2012

Citation: Mahapatra S, Mahapatra S, Bhuyan P, Pattnaik K, Mahapatra A (2012) Cytodiagnosis of Tubercular Dactylitis with Skin and Lymph Node Lesions in an Immunocompetent Patient. J Cytol Histol 3:147. doi:10.4172/2157-7099.1000147

lesion. But, Z-N stain of cytoaspirate was negative for acid- fast bacilli. Finally, cytological diagnosis of granulomatous lesion was made.

The patient was advised for incisional biopsy of the affected left finger swelling. Grossly, multiple bits of yellowish tissues were received. Microscopically, granulomas consisting of caseating necrosis, epithelioid cells, Langhans giant cells, lymphocytes were noticed (Figure 4). Hence, a diagnosis of tubercular dactylitis was made. Biopsy from cutaneous nodule and lymph nodes (Figure 5) had a similar picture of tubercular lesions. Periodic acid schiff stain for fungus was negative. Biopsy tissue from phalanx was simultaneously sent for culture of tubercle bacilli and Polymerase Chain Reaction (PCR) study. The PCR came as positive on 7th day. At the end of 3rd week typical buff colored colonies grew on Lowenstein Jenson (LJ) slope (Figure 6)

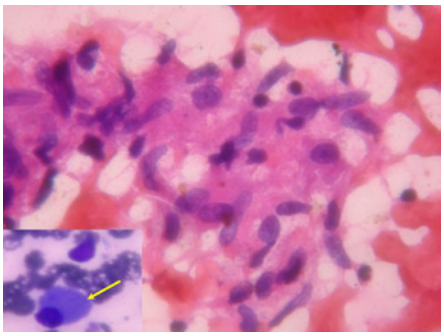

Figure 3: Cytosmear showing epithelioid cell clusters. Insert showing an osteoblast (MGG, X 400).

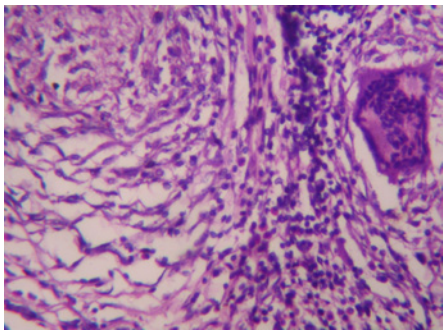

Figure 4: Photomicrograph of phalanx showing granuloma comprising of circumscribed area with caseating necrosis, epithelioid cells, multinucleated giant cell and peripheral collar of lymphocytes (HE, X400).

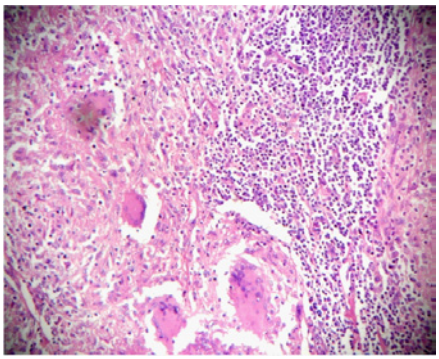

Figure 5: Photomicrograph of lymph node showing granuloma with epithelioid cells, Giant Cells (HE, X400).

Figure 6: LJ Slope showing buff coloured colonies of *Mycobacterium tuberculosis*.

which was identified to be Mycobacterium tuberculosis as per standard procedures [6]. So, finally the diagnosis was confirmed to be tubercular dactylitis. Antituberculous Treatment (ATT) was initiated and there was marked improvement within three months of treatment. The patient was advised to continue ATT till 12th month and routine follow up.

Discussion

Tuberculosis of bone is less common than the pulmonary form and involvement of phalanx is infrequent [1,2]. In skeletal tuberculosis, spine is the most common site [3]. After thorough search from literatures, we have concluded that we are reporting a patient presenting with tuberculosis of phalanx, cutaneous nodule and lymph nodes which is first of its kind. Another important feature was the immunocompetence of the patient.

Tuberculosis of bone occurs due to hematogenous dissemination during florid phase of primary complex which become clinically evident years later [5]. Some believe in *"Lociminoris resistentiae"* theory in which dormant infected foci are reactivated with decrease local resistance [7]. Still others believe in sporadic dissemination from a quiescent primary or extra- osseous focus.

Tuberculosis of phalanx although more common in children, also occurs in adults. Our case was an adult with X-Ray showing lytic lesion of phalanx. Both cytology and histology revealed caseating necrosis, epithelioid cells, and few multinucleated giant cells. Absence of soft tissue swelling and necrosis ruled out syphilis. Absence of peripheral nerve involvement, hypopigmented patches and plenty of foamy macrophages, presence of caseating necrosis excluded leprosy [8]. Negative fungal stain, along with bone destruction with no new bone formation differentiated it from fungal (*Coccidiomycosis, Blastomycosis*) dactylitis. In fungal dactylitis, granuloma most commonly yield staphylococci / streptococci [9,10].

PCR study increase sensitivity and allow exclusion of non-tuberculous mycobacteria (*M. marium*). The gold standard for osseous tuberculosis diagnosis is culture of *Mycobacterium tuberculosis* from bone tissues [11]. Current recommended treatment for osseous tuberculosis is 2 months treatment with isoniazide, rifampin, pyrozinamide and ethambutol followed by 6 to 12 month regimen of isoniazide and rifampin.

Conclusion

Tubercular dactylitis along with involvement of cutaneous nodule and lymph nodes is very rare in its manifestation. A critical and

accurate dissection of the differential diagnosis is of utmost importance to advocate an early specific therapy.

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