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RESEARCH ARTICLE

Non – Hodgkin's Lymphoma of Calcaneum, Inguinal & Popliteal region : A rare case report

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Abstract

Non-Hodgkin's lymphoma is cancer of the lymphoid tissue, which includes the lymph nodes, spleen, and other organs of the immune system.[6] These are a heterogeneous group of B-cell and T-cell neoplasms that arise primarily in the lymph nodes.[7] HIV and other infectious agents, such as human herpesvirus 8 and Epstein-Barr, appear to be associated with differing types of NHL, such as some B-cell lymphomas [7]. The cancer may be low grade (slow growing), intermediate grade, or high grade (fast growing). Burkitt's lymphoma is an example of a high-grade lymphoma. Follicular lymphoma is a low-grade lymphoma. The cancer is further grouped by how the cells look under the microscope, for example, if there are certain proteins or genetic markers present.

INTRODUCTION

The incidence of NHL is approximately 50% higher among men than women and 35% higher among white people than black people [9]. Increase in NHL may be attributed to immunodeficiency, various infections, familial aggregation, blood transfusion, genetic susceptibility to NHL, diet, and chemical exposures to pesticides and solvents [9]. Non-Hodgkin lymphoma resulted in 210,000 deaths globally in 2010 up from 143,000 in 1990.[8]

Primary lymphoma of bone in general is a very rare condition which represents approximately 3% of all primary malignant bone tumors. Of these, less than 1% originate in the foot. [1] Involvement of the ovary in NHL is well recognized [11]. Male predominance, higher likelihood of early stage presentation, and a median age predominance of the fifth or sixth decade are usual features of primary bone lymphoma. [2]
PLB constitutes 3-7% of all malignant bone tumors and approximately 3% of all extranodal lymphomas. It is found at all ages, being most frequently seen in adult life. Any part of the skeleton can be involved, but a trend exists in favor of bones with persistent bone marrow[4]. Most tumors and tumor-like conditions initially present with pain as the patient's primary complaint. Therefore, any complaint of heel pain must be thoroughly evaluated and treated.[5]
Although boney involvement of disseminated malignant lymphoma is not uncommon, primary lymphoma of bone is infrequent. Primary bone lymphoma is mostly large-cell or mixed small- and large-cell lymphoma of the B-cell lineage.[3] It usually affects the long bones, indeed its very unusual presentation in this case report where it affects

the calcaneal bone. On the basis of radiological characteristics, primary bone lymphoma can be divided into three groups: (1) lytic destructive pattern, (2) blastic sclerotic pattern, and (3) subtle or near normal pattern.[3]

In general, limb-sparing radiation therapy was considered as the gold standard in 1960s with a curing rate of 44-63%. But now patients with monostatic primary bone lymphoma treated with a combination of radiation therapy and chemotherapy do well [2]. Most tumors and tumor-like conditions initially present with pain as the patient's primary complaint. Therefore, any complaint of heel pain must be thoroughly evaluated and treated.[5]

CASE SUMMARY

A 22-year-old female patient was apparently alright till 3 months back when she developed pain over her right heel. It was gradually increasing and associated with swelling in the region. The pain and swelling increased over time and patient could not walk and needed support for ambulation. There was no history of trauma or fall.

On examination: - There was diffuse swelling over her 1>right heel 6 x 5 cms. Soft, tender 2>popliteal 5 x 3 cms soft, tender 3> inguinal region, which was soft in consistency and tender with local rise in temperature. Overlying skin was normal and distal arterial pulsations were normal. Active toe movements were present but ankle movements were restricted due to severe pain. (Figure 1). On investigation the all the blood counts except for TLC were under normal limits which was 10,100/cumm Granulocytes-76%, lymphocytes- 21%, Eosinophils-2% monocytes-1%. The patient was non-diabetic and the urine examination was also within normal limits.

Radiograph of the right heel was done which was suggestive of diffuse Sclerotic lesion was seen; Expansile; Osteolytic; Permeated appearance of calcaneum; however other bones of foot- normal (Figure 2). Patient was then planned for an FNAC from the calcaneum region (Figure 3 a, b, c)

Monotonous population of lymphoid cells; Atypical large non-cleaved cells ; Plentiful smudging of nuclei ; Conspicuous nucleoli ; Repetitive occurrence of the same cells ; Absence of other cell types except for small lymphocytes

Patient was then planned for an Open Biopsy from the site which had a consistent cellular and morphological appearance as of cytology. (Figure 4 a, b)

DISCUSSION

Primary Non-Hodgkin's lymphoma of bone constitutes about 3% of malignant bone tumors[1] and 3% of extra nodal NHL.Occurrence in the small bones are rare. The common type of NHL affecting bones are small cleaved, Burkitt's type, ALCL, Lymphoblastic, Large cell type, Immunoblastic, and Hodgkin's lymphoma.It occurs at all bones, more in the bones which are known to carry haemopoesis[12].The world literature search for primary NHL of the bone rarely reported primary NHL of calcaneum. The sites commonly affected are the long bones.The highlight of present case is addition of rare occurrence of primary NHL of calcaneum to the literature. Recently, Beal *et al* .[10] studied the clinical characteristics of 82 PLB patients and reported the most common sites to be involved as the femur (27%), pelvis (15%), tibia (13%), humerus (12%), spine (9%), mandible (2%), skull (1%), scapula (1%), radius (1%), and ulna (1%).The differential diagnosis for this patient included 1)Ewing's sarcoma 2) Primary Non-Hodgkin's lymphoma 3) Small cell variant Osteosarcoma 4)Primary malignant lymphoma 5)Non-Hodgkin's lymphoma Intermediate grade ,Diffuse large cell type Treatment with cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) plus etoposide established complete remission.

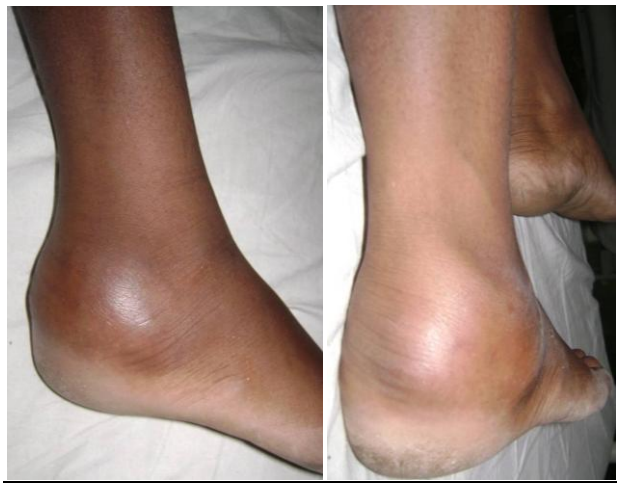

Figure 1 – Suggestive of swelling over the ankle

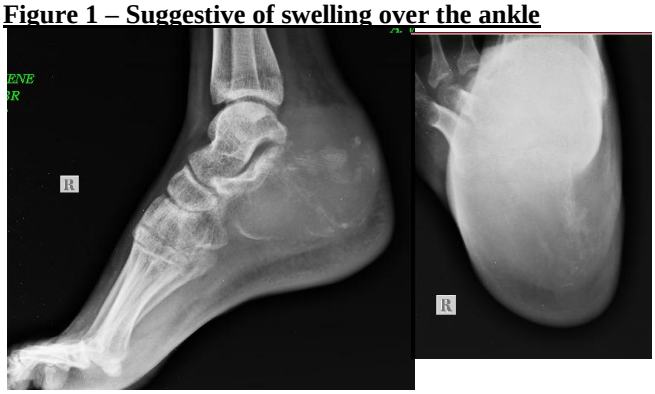

Figure 2 – Lateral and Axial view of the Right Calcaneum

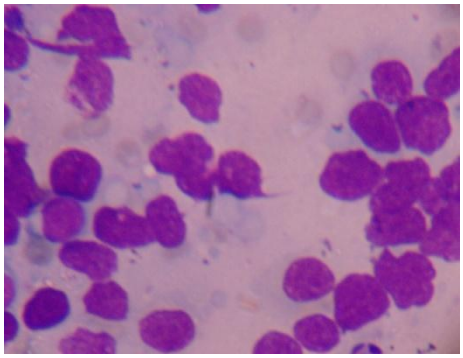

Figure 3 a - FNAC from calcaneum, scanner

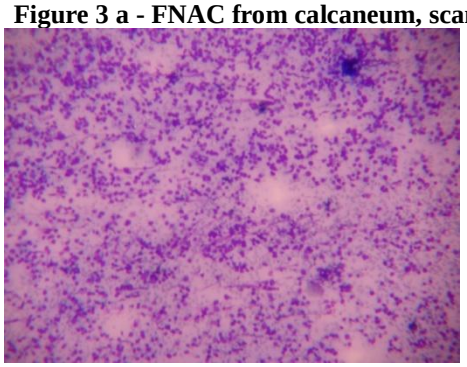

Figure 3 b - FNAC from calcaneum, 40X

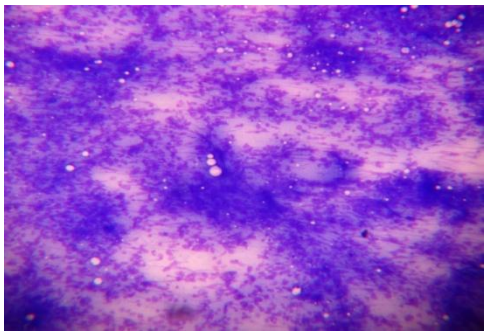

Figure 3 c FNAC From popliteal swelling, scanner.

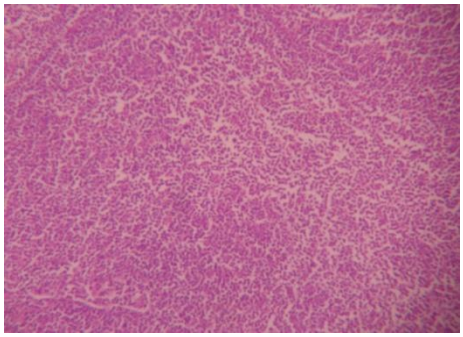

Figure 4 a Histopathology, scanner

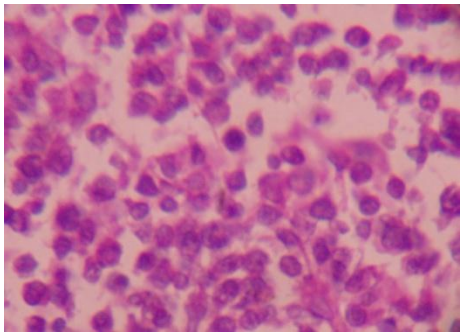

Figure 4 b Histopathology, 40X

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