Case Report

Pathology Section

Lepromatous Lymphadenitis Mimicking Non-Hodgkins Lymphoma: A Case Diagnosed by Fine Needle Aspiration Cytology

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ABSTRACT

Objectives: To report a case of generalized lymphadenopathy in a man, clinically suspected as non-Hodgkin's lymphoma and to present the usefulness of FNAC as a diagnostic tool for leprosy in patients presenting with lymphadenopathy.

Methods: A 46 year old man from Uttar Pradesh (India) with generalized lymphadenopathy. Initially diagnosed as tubercular lymphadenitis, he was prescribed a course of anti-tubercular treatment to which he did not respond. He was hence referred to our institute, where he clinically suspected to be a case of non-Hodgkin's lymphoma and was taken for further investigations.

Results: Fine needle aspiration was performed on the lymph node which established lepromatous leprosy as the cause of lymphadenopathy.This was further confirmed by lymph node biopsy and its histopathological examination.

Conclusion: The standard tools for diagnosis of leprosy are mainly skin slit smears or skin biopsy of the affected area of skin. When the presentation is with lymphadenopathy, then FNAC of the lymph node provides for an infallible tool for diagnosis.

Key Words: Lepromatous lymphdenitis, Lymphoma, Non-Hodgkin`s lymphoma

INTRODUCTION

Leprosy first described in ancient Indian texts from the 6th century B.C. is a non fatal infectious disease caused by *Mycobacterium leprae* whose clinical manifestations are largely confined to skin, peripheral nervous system and upper respiratory tract (1). It can also affect lymph nodes, liver, spleen, bone marrow, eyes and testes. The prevalence of leprosy in India is reported to be 0.7% per 10000 populations (2). Lymph node involvement may be confined to axillary, cervical, epitrochlear and inguinal group (3). Since lymphadenopathy in leprosy may simulate tuberculosis or neoplastic etiology FNAC is considered as a simple, quicker and less invasive technique and is widely accepted as a diagnostic procedure (4) as seen in the following case report.

CASE REPORT

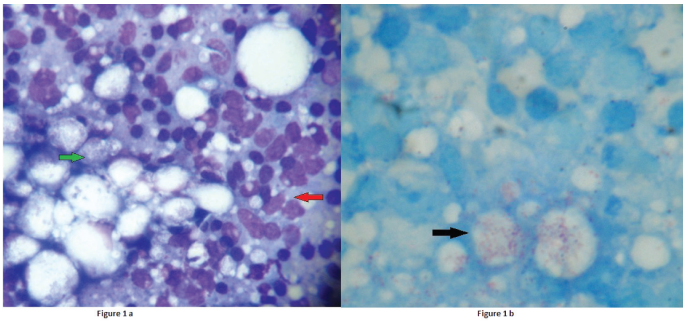
A 46 year old male patient was referred to our institute with presenting complaint of gradually increasing swellings in the submandibular, axillary, and inguinal areas of one year duration. The swellings were bilateral and painless. The patient had been diagnosed as tubercular lymphadenitis by fine needle aspiration cytology which had been performed on the right mandibular lymph node He was started on anti-tubercular treatment in a peripheral hospital to which he did not respond. He stopped the treatment of his own accord as there was no relief.

On clinical examination the patient was found to have enlargement of submandibular, axillary and inguinal lymph nodes on both sides, of an average size of 2-3 cms. As the patient did not respond to anti-tubercular treatment and keeping the age of the patient in mind, he was clinically suspected to be a case of non-Hodgkin's lymphoma. FNAC was performed on the right axillary lymph node and the prepared smears were stained with May-Grunwald's-Giemsa.Microscopic examination was done which showed cellular smears with foamy macrophages in groups, of which some were multinucleated, interspersed with reactive lymphoid cells and plasma cells. Few focal collections of epithelioid cells were also seen. The foamy macrophages showed intracellular and extracellular negative bacillary images arranged in a parallel disposition [Table/Fig-1]. Modified Ziehl-Neelsen (Z-N) stain was also done which showed foamy macrophages packed with acid fast bacilli as globi [Table/Fig 1].In order to rule out the possibility of co-existing non-Hodgkin's lymphoma, the right inguinal lymph node was excised and sent for histopathological examination. The histopathological examination revealed partially effaced architecture with focal collections of foamy and reactive histiocytes interspersed with lymphoid cells and plasma cells [Table/Fig-2]. No evidence of neoplastic process was seen. Modified Z-N stain was also done which revealed foamy histiocytes packed with lepra bacilli as globi [Table/Fig-2].

After the diagnosis of lepromatous leprosy was confirmed by histopathological examination, the patient was referred to the department of Dermatology for further evaluation. On detailed physical examination of the patient multiple hyper pigmented macules were found to be present in the gluteal region. Also both the ulnar and peroneal nerves were found to be thickened. Punch biopsy of the skin lesions was done and this too confirmed the diagnosis of lepromatous leprosy. The patient's five year old daughter was also found to be having skin lesions and was subsequently diagnosed as Borderline tuberculoid leprosy.

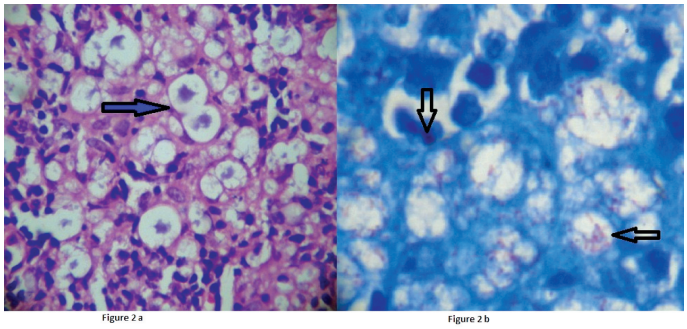
DISCUSSION

Leprosy is a chronic granulomatous disease, is one of the major health problems faced by our country. It is endemic in many areas of India. Leprosy mainly manifests with cutaneous and neurological involvement but it has propensity to involve lymph node, spleen, bone marrow, eyes and testes (5). Incidence of lymph node involvement accompanied by skin lesions with presence of AFB is



[Table/Fig-1]: (a) FNAC smear showing foamy macrophages with negative bacillary images intracellularly and extra cellularly(green arrow) with focal collections of epithelioid cells (red arrow) (MGG, X400);

(b) Intracellular and extra cellular Lepra bacilli as globi in foamy macrophages (ZN, X1000)



[Table/Fig-2]: (a) Lymph node biopsy showing clusters of foam cells with scattered plasma cells and lymphocytes (H& E ,X40);

(b) Foam cells containing lepra bacilli arranged in parallel disposition (ZN,X1000)

92.2% (6).Lymph node involvement in Lepromatous leprosy shows a characteristic microscopic picture. Progressive accumulation of large, pale, rounded histiocytes (lepra cells), with no granuloma formation or necrosis is seen. Modified Z-N stain demonstrates cytoplasm of histiocytes packed with acid fast bacilli. Mohanty et al in their study of one hundred and five leprosy patients found clinical enlargement of lymph nodes in all cases of Lepromatous, Borderline lepromatous and Borderline types of leprosy. In order of frequency the sites were inguinal (76.2%), cervical (69.5%) and axillary (69.2%) group of lymph nodes (3).But it is very unusual to diagnose leprosy primarily by lymph node cytology or biopsy. Our reported case had the similar type of involvement of lymph nodes group. First case of cytological diagnosis of lymphadenopathy by FNAC in lepromatous leprosy was reported by Cavett JR 3rd et al (7).The authors also high-lighted the arrangement of negative bacillary images seen in lymph nodes aspirates to distinguish it from atypical mycobacterial infections where they are arranged in random fashion. . The utility of diagnosis by FNAC of lymph node was further evaluated by Ahamad et al and attempts were made even to classify the smears according to Ridley-Jopling spectrum based on ratio of foamy histiocytes to epithelioid cells (8). In our case the morphological picture was that of lepromatous leprosy.

Therefore taking our case as an example we can say that it is unlikely for the clinician to clinically diagnose a case of generalized lymphadenopathy in an elderly patient, showing no response to anti-tubercular treatment as leprosy. It would be more likely to be diagnosed as lymphoma. Therefore a detailed history and clinical examination can prevent such misdiagnosis. Leprosy is a fully treatable and nonfatal disease whereas lymphoma is a malignancy which requires aggressive treatment. Although patients with Hansen's disease may be at risk for the development of neoplasia, but there have also been instances of leprosy as a complication of lymphoma (9).

CONCLUSION

Leprosy can manifest as generalized lymphadenopathy, therefore in endemic areas a detailed history and clinical examination combined with FNAC of the involved lymph nodes can avoid misdiagnosis in such cases. Also FNAC of the lymph node yields adequate material for cytological studies and can be very well used as an alternative to slit skin smears and skin biopsy for diagnosis of leprosy. It is also a simpler, quicker and less invasive technique.

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