Cytology of HIV Lymphadenopathy - A study of 100 cases

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Abstract
100 patients of lymphadenopathy with human immunodeficiency virus infection were studied by fine needle aspiration cytology of the affected smears. Smears collected were stained by different staining techniques like Papanicolaou taining, Haematoxylin and eosin (H& E) staining, giemsa staining and AFB as well as PAS staining. The maximum number of cases was reported in the age group of 21 to 30 years. Majority of the patients were males. The maximum number of cases had reactive lymphadenitis (52%), followed by tuberculosis (45%) non-Hodgkin’s lymphoma (2%) and dermatopathic lymphadenitis (1%). FNAC is an important diagnostic tool in the evaluation of lymphadenopathy in HIV-positive patients.

Keywords: Human immunodeficiency virus, Myco, Fine-needle aspiration cytology bacteria

Introduction
Acquired immunodeficiency syndrome (AIDS) is known to be caused by a lymph tropic retrovirus. AIDS was first recognized in 1981. This syndrome represents the most severe form of a broad spectrum disease [1]. AIDS is a fatal illness that down regulates the body’s immune system and leaves the victim vulnerable to life-threatening opportunistic infections, neurological disorders or unusual malignancies [2]. In India it has emerged as one of the most serious public health problems [3]. Lymphadenopathy is one of the earliest manifestations of HIV. This can be caused by direct effects of HIV, opportunistic infections or lymphoid malignancy developing in an immune-deficient individual. Fine needle aspiration cytology (FNAC) is a good method for the evaluation of opportunistic infections in HIV/AIDS viz. tuberculosis, histoplasmosis, toxoplasmosis and malignant conditions such as Kaposi sarcoma and lymphoma [4]. FNAC has become the primary investigative procedure for mass lesions on HIV-positive patients, particularly in the assessment of lymphadenopathy. The procedure is rapid, easily performed and in many cases obviates excision while guiding subsequent therapy or observation. This study was performed to know the role of FNAC in evaluating HIV positive lymphadenopathy.

Materials and methods
The study was performed in Pathology department of PDU Medical College, Rajkot during time period of 2 years from 2009-2010. Total 100 cases of HIV lymphadenopathy patients were studied. Diagnosis of HIV was done by two enzyme linked ELISA test. Aspiration from the lymph node was done in OPD using 22 gauge needle with proper precautions. Average 4-5 smears were made and stained by Papanicolaou stain, hematoxylin and eosin stain, giemsa stain, Zeil-Neelsen (ZN) stain for AFB and PAS stain for fungi.

Observation and discussion
100 cases of the HIV lymphadenopathy patients underwent for FNAC from the lymph node and studied after staining for cytomorpholog. Following observations were made. Determine and specificity of TPO and CK19 in differentiating thyroid nodular lesions.
Lymph nodes were the most commonly affected site. However, Saty
and Vanisri (5) in which 44 were mycobacteri
tuberculosis while 1 case was of the mycobacteria avium. 2
cases of the lymphoma were diagnosed which were non
hodgkin’s Lymphoma. 1 case placed in other category was
dermatopathic lymphadenitis.

The maximum number of cases was found to be in the age
group of 21-30 years, followed by 31-40 years. In a study by
Bates et al. (5), Reid et al. (6) and Satyanarayana et al. (8) along
with the present study most common cytology finding is
reactive lymphadenitis while in study conducted by Shenoy
et al. (7) and Vanisri et al. (9) Most common finding is
tuberculosis.

From the above comparison following facts are observed.
Reactieve lymphadenitis and Mycobacteria infection are the 2
most findings in the almost all study. In study conducted by
Bates et al. (5), Reid et al. (6) and Satyanarayana et al. (8) along
with the present study most common cytology finding is
reactive lymphadenitis while in study conducted by Shenoy
et al. (7) and Vanisri et al. (9) Most common finding is
tuberculosis.

The maximum number of cases was found to be in the age
group of 21-30 years, followed by 31-40 years. In a study by
Bates et al. (5) 22 males and 1 female were found to be HIV-
infected patients and their age ranged from 19 to 72 years.
Further, cervical lymph nodes were the most commonly
affected site. In a study performed by Shenoy et al. (7) the
male: female ratio was 5:1 and the age group affected was
25-30 years with cervical group of lymph nodes being the
most commonly affected site. However, Satyanarayana et al.
(8) report axillary node involvement being more common in
their study. Vanisri et al. (9) also noted cervical node group
as the most common site.

Reactive lymphadenitis was the most common finding in
the present study (53%) was identified by proliferation of
polymorph lymphocytic population with centroblasts,
centrocytes immunoblasts, plasma cells, small lymphocytes
and pale histiocytes in variable proportions with no any
other specific findings.

In the present study 2nd most common finding was
tuberculosis (45%) which was identified by presence of
classical caseous nerosis with granuloma formation. All the
cases were stained by AFB as well as PAS staining.12 cases
were AFB positive and 1 case of mycobacterium avium was
identified by help of PAS staining. In other studies Shenoy
et al. (7) noted (48.2%) cases of tuberculosis while Vanisri et
al. (9) noted highest (58.3%) of tuberculosis cases.

Satyanarayana et al. (8) also noted 34.2% cases of
tuberculosis while Bates et al. (5) noted 22% and Reid et al.
(6) 15% cases of tuberculosis. This observation indicates that
in Indian population tuberculosis is more common in HIV
tuberculosis than in western countries.

Neoplastic lesions found in the 2% cases in the present
study, both were nonhodgkin’s lymphoma that were
defined due to monotonous cell proliferation and distortion
of the normal follicular architecture with proteinous bluish background. No further sub classification was possible on FNAC. In other studies Bates et al. (5) noted 4%, Reid et al. (6) 9% and Shenoy et al. (5) 8.9% cases of
lymphoma quiet higher than present study while Satyanarayana et al. (8) noted 2.6% and Vanisri et al. (9) 2.7% cases of lymphoma comparable tudy.

Kaposi sarcoma was not found in any case in the present
study as well as in other studies conducted by Indian authors
but in western countries higher number of cases of Kaposi
sarcoma was observed.

Other finding noted in the present study was 1 case of
dermatopathic lymphadenopathy. No opportunistic infection
other than Mycobacteria identified in the present study.
Shenoy et al. (7) and Vanisri et al. (9) also did not found any
other opportunistic infection. Bates et al. (5) Noted one case
of Histoplasma and one case of Cryptococcus. Satyanarayan et al. (8) Noted one case of Cryptococcus and one case of Rhodotorula.
Conclusion
FNAC is a primary, easy and effective diagnostic modality for HIV lymphadenopathy patients. It helps in identifying majority of the reactive and neoplastic lesions and opportunistic infections and guide for the subsequent management of the patient. FNAC findings in the HIV lymphadenopathy are noticeably different in India in comparison to the western countries.

Abbreviations used in text
HIV-Human immunodeficiency Virus.
FNAC-Fine Needle Aspiration Cytology.

References