International Journal of Clinical and Diagnostic Pathology

ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2019; 2(1): 296-298
Received: 05-11-2018
Accepted: 07-12-2018

Dr. Kaushal R Bhojani
Assistant Professor, Pathology department, PDU Medical College, Rajkot, Gujrat, India

Dr. GA Dhruva
Professor and Head, Pathology department, PDU Medical College, Rajkot, Gujrat, India

Correspondence
Dr. Kaushal R Bhojani
Assistant Professor, Pathology department, PDU Medical College, Rajkot, Gujrat, India

Cytology of HIV Lymphedenopathy- A study of 100 cases

Dr. Kaushal R Bhojani and Dr. GA Dhruva

DOI: https://doi.org/10.33545/pathol.2019.v2.i1e.42

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.

Table 1: Age and sex distribution of HIV Patients.

Age(years)	Male	Female	Total	Percentage (%)
1-10	05	01	06	06
11-20	09	03	12	12
21-30	40	11	51	51
31-40	12	08	20	20
41-50	08	03	11	11
Total	74	26	100	100%

From the above table it is evident that most of the patients of HIV lymphadenopathy are of age group 21-30 years. Also it is evident that HIV lymphadenopathy is a male predominant condition.

Table 2: Classification of cases according the site involved

Site Involved	No. of patients	Percentage (%)
Cervical Lymph nodes	60	60%
Axillary Lymph nodes	28	28%
Inguinal Lymph nodes	20	20%
Supra clvicular Lymph nodes	2	2%
Total	100	100%

Above table indicates that most common site of HIV lymphadenopathy is the cervical Lymph nodes.

Table 3: Distribution of the case according to cytological findings.

Diagnosis	No. of patients	Percentage (%)
Mycobacteria	45	45%
Reactive	52	52%
Lymphoma	02	2%
Kaposi's sarcoma	0	0
other	01	1%

The most common lesion found was reactive lymphadenitis (52), Mycobacteia (45) 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 of dermatopathic lymphadenitis.

Table 4: Comparison of finding with other studies.

Diagnosis	Bates *et al.* (1993) n=27 [5]	Reid *et al.* (1998) n=65 [6]	Shenoy *et al.* (2002)n=56 [7]	Satyanarayana *et al.* (2002) n=196 [8]	Vanisri *et al.* (2008) n=36 [9]	Present study n=100
Mycobacteria	22%	15%	48.2%	34.2%	58.3%	45%
Reactive	41%	51%	35.7%	42.3%	36.1%	53%
Lymphoma	4%	9%	8.9%	2.6%	2.7%	2%
Kaposi's sarcoma	15%	2%	-	-	-	-
Other	18%	23%	7.2%	23.5%	2.7%	1%

From the above comparison following facts are observed.

Reactive 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 Satyanarayna *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 polymorphic 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 lymphadenopathy than in western countries.

Neoplastic lesions found in the 2% cases in the present study, both were nonhodgkin's lymphoma that were identified due to monotonous cell proliferation and distortion of the normal follicular architecture with proteineous 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 foud 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 Vanirsi *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 lymphadenoathy 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

1. Hymes KB, Greene JB, Marcus A, *et al*. Kaposi's sarcoma in homosexual men: A report of eight cases, Lancet. 1981: 2:598-600.
2. Kumar V, Abbas AK, Fausto N. Disease of immunity, Robbins and cotran Pathologic basis of Disease. Elsevier publication. 2007; 7:245-258.
3. Joshi PL, Rao JV. Changing epidemiology of HIV/ AIDS in India. AIDS Res Rev. 1999; 2:7-9.
4. Shobhana A, Guha SK, Mitra K, Dasgupta A, Negi DK, Hazra SC. People living with HIV infection/AIDS: A study on lymphnode FNAC and CD4 count. Indian J Med Microbiol. 2002; 2:99-101.
5. Martin-Bates E, Tanner A, Suvarna SK, Glazer G, Coleman DV. Use of fine needle aspiration cytology for investigating lymphadenopathy in HIV positive patients. J Clin Pathol. 1993; 46:564-6.
6. Reid AJ, Miller RF, Kocjan GL. Diagnostic utility of fine needle aspiration (FNA) Cytology in HIV-infected patients with lymphadenopathy. Cytopathology. 1998; 9:230-9.
7. Shenoy R, Kapadi SN, Pai KP, Kini H, Mallya S, Khadilkar UN, *et al*. Fine needle aspiration diagnosis in HIV related lymphadenopathy in Mangalore, India. Acta Cytol. 2002; 46:35-9.
8. Satyanarayana S, Kalghatgi AT, Muralidhar A, Prasad RS, Jawed KZ, Trehan A. Fine needle aspiration cytology of lymph nodes in HIV infected patients. Med J Armed Forces India. 2002; 58:33-7.
9. Vanisri HR, Nandini NM, Sunila R, Fine-needle aspiration cytology findings in human immunodeficiency virus lymphadenopathy. Indian Journal of Patho. Micro. 2008; 51(4):481-484.
10. Woods Gail L, Meyers Wayne M. Mycobacterial diseases. In: Damjanov I, Linder J, editors. Anderson S pathology. 10th ed. St. Louri. S: Mosby. 1996; 843-65.