



## Role of Fnac in Tuberculous Lymphadenitis

### KEYWORDS

FNAC, Tuberculous lymphadenitis, CRP, ESR

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**ABSTRACT** *Background: Tuberculosis has caused significant morbidity & mortality throughout history. Tuberculosis of the lymphnodes is the most common form of extra-pulmonary tuberculosis. Aim & objective: The purpose of the current study was to determine the diagnostic value of FNAC in the diagnosis of tuberculosis. Where possible ,the finding were correlated with chest X-ray, Mantoux's test, CRP & ESR. Material & Methods: A total of 130 patients attended the OPD of Rama Medical College Ghaziabad for FNAC between August 2012 to May 2014. Result & Conclusion: Among 130 cases ,88 were of tuberculous lymphadenopathy. Cervical lymph nodes were affected in 106 cases ,inguinal and axillary in 14 and 10 cases respectively. The maximum number of patients with lymphadenitis were seen in the age group of 11-20 yrs followed by 21-30 yrs. The least No. of cases were seen in the 0-10 yrs age group. The presence of characteristic caseation necrosis is diagnostic for tubercular lymphadenitis. In cases where a definitive diagnosis can not be made on the basis of cytomorphology ,a conclusive diagnosis is made only after correlation with other tests like mantoux's test, CRP & ESR. Bacteriological studies are especially important in high risk patients with AIDS in which disease is more severe, likely to be drug resistant and more prone to disseminate.*

### Introduction

The morbidity and mortality of tuberculosis in India is very well known and early diagnosis is essential for patient management. Tuberculous lymphadenitis is commonest form of extrapulmonary and high incidence of the disease presenting to a tune of 85 million cases worldwide. The present study is screening of lymph nodes by FNAC especially the cervical lymph nodes. Moreover, HIV prevalence in India is adding to the burden of tuberculosis especially in chronic cases. To evaluate lymphadenopathy various technologies and methods used includes:

- AFB culture automation
- FNAC
- ESR
- CRP
- PCR
- ELISA

Over the past decade, fine needle aspirate cytology (FNAC) has assumed an important role in the evaluation of peripheral lymphadenopathy as a possible non-invasive alternative to excisional biopsy as routine diagnostic tool.

### Aim & objective:

The purpose of the current study was to determine the diagnostic value of FNAC in the diagnosis of tuberculosis. Where possible ,the finding were correlated with chest X-ray, Mantoux's test, CRP & ESR.

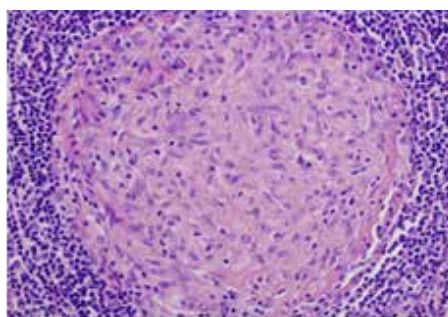
### Material & Methods:

A total of 130 patients attended the OPD of Rama Medical College Ghaziabad for FNAC between August 2012 to May 2014. All eligible patients with significant lymphadenitis >1cm in cervical & axillary and >1.5 cm in inguinal nodes were included in the study (130 total cases) with clinical correlation. 3-4 smear were prepared from each cases for Giemsa, H&E, and AFB stains. Wherever necessary , pus culture for AFB+ cases & suspicious cases .The cytological criteria for diagnosis of tuberculous lymphadenitis have been clearly defined as being epithelioid cell

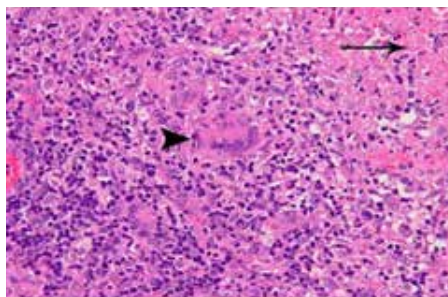
granulomas with or without multinucleated giant cells and caseation necrosis. The pattern of presentation of chronic granulomas presented as:

1. Epithelioid granulomas without caseation necrosis but with lymphocytes, langhan's giant cells are usually absent.
2. Epithelioid granulomas with necrosis.
3. Necrosis without granulomas, necrotic debris containing polymorphs and scattered lymphocytes.

This study was done to evaluate the role and efficacy of FNAC as a routine diagnostic tool for early & immediate diagnosis.



**Fig:1 Non -caseating granuloma**



**Fig:2 Caseating granuloma**

**Observation & results:**

**1.SHOWING INCIDENCE OF LYMPHADENOPATHY IN DIFFERENT AGE GROUPS**

Age Group (In years)	No. of cases	Percentage
00-10	08	6.15
11-20	41	31.53
21-30	41	31.53
31-40	21	16.15
41-50	09	6.9
51-60	10	7.69

In this study maximum number of patients were in the age group of 11-30 years.

**2.SHOWING SEX INCIDENCE OF DIFFERENT TYPES OF LYMPHADENOPATHY**

Diseases	Male		Female	
	No. of cases	Percentage	No. of cases	Percentage
Tuberculosis	53	40.76	35	26.92
Inflammatory	17	13.07	10	07.69
Metastatic	04	03.07	02	01.53
Lymphoma	07	05.38	02	01.53
Total	81	62.28	49	37.69

In this study 62.28 % (n=81) is male sex and 37.69% (n=49) is female sex. Out of 130

cases 67.69% (n=88) were tuberculosis and least is metastatic 4.61% (n=06).

**3. SHOWING AGE INCIDENCE OF DIFFERENT TYPE OF LYMPHADENOPATHY.**

Age Group (in Years)	Tuberculosis		Inflammatory		Metastatic		Lymphoma	
	No.	%	No.	%	No.	%	No.	%
00-10	03	2.30	03	2.30	00	00	02	1.53
11-20	33	25.38	06	4.61	00	00	02	1.53
21-30	30	23.07	09	6.92	00	00	02	1.53
31-40	10	7.69	07	5.38	02	1.53	02	1.53
41-50	07	5.38	00	00	02	1.53	00	00
51-60	05	3.84	02	1.53	02	1.53	01	0.77
Total	88	67.69	27	20.76	06	4.61	09	6.92

In this study maximum number of cases 48.46% (n=63) were tuberculosis in the age group of 11-30 years and least cases 4.61% (n=06) were metastatic in the age group of 31-60 years.

**4.SHOWING SITE DISTRIBUTION OF ASPIRATED LYMPH GLAND**

Site	No. of cases	Percentage
Cervical	104	80%
Inguinal	17	13.07%
Axillary	09	6.92%

In this study 80% (n=104) lymph gland were at cervical region and 6.92% (n=09) were at axillary region.

**5.SHOWING ANALYSIS OF DIAGNOSIS MADE BY FNAC IN TUBERCULOUS LYMPHADENOPATHY**

Total number of cases	Positive for tuberculosis		Doubtful positive for tuberculosis	
	No.	%	No.	%
88	75	85.22%	13	14.77%

In this study 85.22% (n=75) were positive for tuberculosis and 14.77% (n=13) were doubtful on FNAC which were confirmed on biopsy.

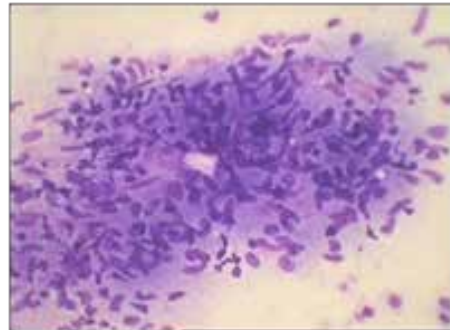


Fig 3 Giemsa stain shows granuloma

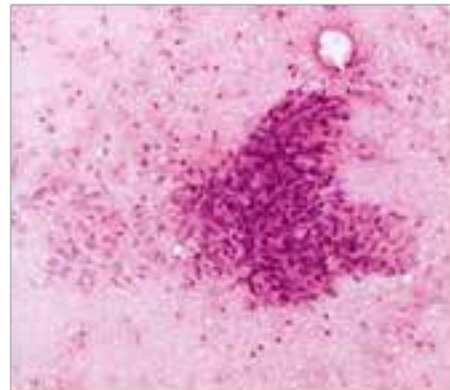


Fig 4: H&E stain shows epithelioid granuloma

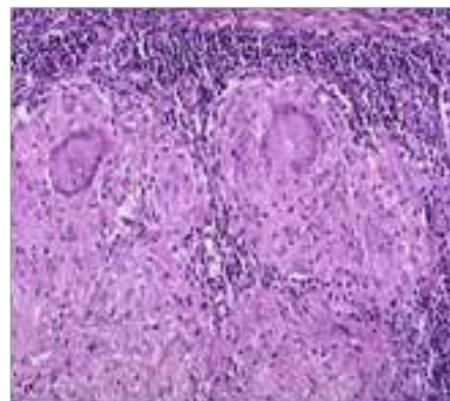


Fig5: Histopathology shows Langhans Giant cells

**6.SHOWING PERCENTAGE OF ACID FAST BACILLI FOUND IN ZIEHL NEELSEN STAINING OF ASPIRATED MATERIAL**

Total number of cases	AFB present		AFB absent	
	No.	%	No.	%
88	40	45.45%	48	54.54%

## 7. ESR IN CASES OF TUBERCULOSIS

ESR (mm/hr)	No. of cases	Percentage
1-30	17	19.31%
31-60	20	22.72%
61-90	21	23.86%
91-120	22	25%
121-150	08	9.09%

## 8. SHOWING PERCENTAGE OF DIFFERENT TYPES OF CELLS FOUND IN ASPIRATION CYTOLOGY OF TUBERCULOUS LYMPHADENITIS (n=88)

Cells	No. of caese	Percentage
Lymphocytes	88	100
Pinkish granules deposit of the nature of caseation	71	80.68
Epitheloid cells	64	72.72
Langhan's type of giant cells	14	15.90
Neutrophils in significant number	35	39.72

In this study lymphocytes were present in all cases of tuberculosis and 80.68% (n=71) were pinkish granules deposition of the nature of caseation, 72.72% (n=64) were epitheloid cells, 15.90% (n=14) were langhan's type of giant cells and 39.72% (n=35) were present neutrophils .

## 9. OTHER TUBERCULAR LESION ASSOCIATED WITH TUBERCULOUS LYMPHADENITIS

Associated findings	Cases	Percentage
Tuberculosis meningitis with TB lymphadenitis	04	4.54
Abdominal Tuberculosis	04	4.54
Pulmonary TB	06	6.81
HIV positive in TB lymphadenitis	02	2.27
Total	16	18.18

In this study out of 88 cases 16 cases were tubercular region associated with tuberculous lymphadenitis and 6,81% (n=06) were pulmonary TB.

### Conclusion:

Conclusively, Fine needle aspiration cytology appear to be an efficient method for rapid diagnosis of tuberculous lymphadenitis. It is an office procedure in out patient department. It is also suitable in debilitated patient. It is

readily repeatable and useful for multiple lesion. Fine needle aspiration cytology is a painless procedure, produces a speedy result and is cheap. It is a low cost procedure. Result obtained rapidly. It also facilitates bacteriological screening in an easy and rapid way. Excision biopsy appears necessary only in those cases where FNAC failed.

The demand for fine needle aspiration cytology is continuing to grow as a direct result of the demands of the surgeon, physician and general practitioner for a minimally invasive and rapid method of tissue diagnosis. Fine needle aspiration cytology has recently become a diagnostic technique for various pathologic lesions, particularly useful in developing countries including India, where facilities for biopsy are not available in peripheral areas. All cases to be clinically correlated with Mantoux test, ESR/ CRP, AFB smears, HIV test to evaluate the confirmatory diagnosis of tuberculous lymphadenitis on a FNAC report. It has been proved beyond doubt that FNAC is a preferred diagnostic tool in all cases of lymphadenopathy.

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