



## ORIGINAL RESEARCH PAPER

## Pathology

**DIAGNOSTIC EVALUATION OF TUBERCULAR LYMPHADENOPATHY BY FINE NEEDLE ASPIRATION CYTOLOGY AND CORRELATION WITH ACID FAST STAINING AND MANTOUX TEST IN PATIENT ATTENDING AT TERTIARY CARE CENTRE JHARKHAND.**

### KEY WORDS:

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### ABSTRACT

The present study was conducted to evaluate the usefulness of FNAC as a diagnostic tool in 125 patients of lymphadenopathy. Fine needle aspiration was performed in all the patients following through clinical examination and slides were stained with, Ziehl Neelsen stains followed by mantoux test. FNAC of lymphnodes is an excellent first line method, for investigating the nature of the lesions, as it is economical and convenient alternative to open biopsy.

### INTRODUCTION

Tuberculosis is one of most common infectious diseases in India, which is causing economic burden on India despite being easy in diagnosis and curable. India has the highest burden of tuberculosis according to WHO, 2017 estimates (2.79 million out of 10.4 million 1 worldwide). Tuberculosis (TB) is an infectious disease caused by various strains of mycobacterium, mainly by Mycobacterium tuberculosis in humans; it has been present in humans since antiquity.<sup>[1]</sup> TB is a chronic, progressive infectious with a period of latency following initial infectious. It occurs most commonly in the lungs. Pulmonary symptoms include productive cough, chest pain, and dyspnea. Tuberculosis is the leading infectious cause of morbidity and mortality in adults' worldwide, killing about 2 million people every year.<sup>[2]</sup>

Tuberculous lymphadenitis is the most common form of extra pulmonary tuberculosis.<sup>[3]</sup> In developing countries almost two third of the cases of lymphadenopathy are due to tuberculosis.<sup>[4]</sup> Clinical diagnosis of tubercular lymphadenitis of the superficial lymph nodes is easy when features like matting, ulceration, sinuses, Caseation and liquefaction are present. The utility of Fine Needle Aspiration Cytology (FNAC) in the diagnosis of tubercular lymphadenitis is being described increasingly by many authors.<sup>[5,6]</sup> It is a simple outpatient diagnostic procedure which is well accepted by patients and has practically no complications.<sup>[7]</sup> Mantoux test has significance in the diagnosis of tuberculosis, especially where the cytomorphologic features of tuberculosis are ill-defined.

The aim of the present study is to compare the role of FNAC, Ziehl-Neelsen staining and Mantoux test in diagnosing of tuberculous lymphadenopathy and to determine the utility of FNAC, Z-N stain and Mantoux test in suspicious cases.

### MATERIAL AND METHODS

The present study on 125 patients of lymphadenopathy was conducted in the Department of Pathology RIMS Ranchi from July 19 to June 2020. FNAC of the enlarged lymphnodes was performed with informed consent of the patient; following thorough clinical examination. Palpable nodes were aspirated in the cytology department. In all the cases, alcohol fixed smears were made and stained with H & E and Pap stains; and for each case an additional slide was kept unstained. In all cases where the cytological diagnosis was of a granulomatous disease, Ziehl-Neelsen staining was performed to see for acid fast bacilli. The aspiration smears from the enlarged

lymphnodes were studied to arrive at a probable diagnosis.

### INCLUSION CRITERIA:

Patient with superficial lymphadenopathy, irrespective of their age group (15-64 years) and sex referred for cytological study different wards of RIMS as well as O.P.D.

### EXCLUSION CRITERIA:

- Patients age group (0-14) and above 65 years
- Previously diagnosed

### OBSERVATION AND RESULT

In our study "diagnostic evaluation of tubercular lymphadenopathy by fine needle aspiration cytology and correlation with acid fast staining and mantoux test in patient attending at tertiary care centre Jharkhand" was based on observation made in 125 cases of superficial lymphadenopathy that were referred to cytology section of pathology department. The lesions were of diverse pathological nature. All the observation made in the study was recorded in tabular form and analytical studies were performed. The results were also compared with Mantoux test and ZN stain for AFB.

**Table-1: Showing Incidence Of Lymphadenopathy In Different Age Groups**

Age (years)	No. of cases	Percentage
15-25	26	20.8%
26-35	44	35.2%
36-45	32	26%
45-55	12	10%
56-64	11	8%
Total	125	100

**Table-2: Showing Sex distribution**

Sex	No. of cases	Percentage
Male	75	60%
Female	50	40%
Total	125	100

**Table-3: Showing site distribution of aspirated lymph glands**

Site	No. of Cases	Percentage
Cervical	92	74%
Axillary	25	20%
Inguinal	8	6%
Total	125	

**Table 4: Showing diagnosis of tuberculous lymphadenopathy based on FNAC, AFB and Mantoux test.**

No. of cases of Tuberculous	FNAC		AFB		Mantoux Test	
	Case	%	Case	%	Case	%
125	44	85	42	82	29	56

## DISCUSSION

In the present study 125 cases of superficial lymphadenopathy by simple random sampling were taken and enlarged lymph nodes were carefully examined. After preparation of smears, one slide was immediately fixed in 95% alcohol in case of wet fixed for Haematoxylin Eosin staining and sometimes when required for Papanicolaou staining. Other slides were kept to prepare air dried and stained with Leishman's Giemsa staining. In suspected case of tuberculosis where the nature of aspiration was pus material one slide was kept for Ziehl-Neelsen staining to look for Acid-Fast Bacilli

The present study showed that TB lymph node was not limited to younger age groups. No age group was exempted; Furthermore, the disease was not limited to the cervical lymph node either. Axillary and inguinal lymph nodes were also affected.

## Age

In our study age of patients ranged from 15-64 years. The maximum number of lymphadenopathy i.e. 44(35.2%), however, least number of cases i.e. 11 (8%) was in the age group of 56-64 years.

## Sex

The incidence of lymphadenopathy in male has (60%) more prevalence than female(40%).

## Site

Incidence of lymphadenopathy is highest in cervical group(74%) followed by axillary(20%) and inguinal(6%) lymph nodes.

It is evident from the above table FNAC was positive 85% cases and 82% AFB and 56% Mantoux test positive of tuberculous lymphadenopathy cases.

## CONCLUSION

The present study proposes that FNAC combined with ZN staining for AFB is a magnificent technique for diagnosing tubercular lymphadenitis. Mantoux test, albeit dubious, is of noteworthy utility particularly in doubtful cases. Other subordinate examinations like mycobacterial culture, lymph node biopsy and polymerase chain reaction can be reserved for cases, in which there is strong clinical suspicion with equivocal result of FNAC and acid-fast stain. FNAC should be combined with Z-N stain in all cases of granulomatous lymphadenitis and in aspirates yielding necrotic and purulent material prior to making a cytological diagnosis. Mantoux test should be done on patients with lymphadenopathy of more than 1 cm indicating highlights of non-specific lymphadenitis. In the event that the outcome is positive, a repeat FNAC/biopsy should be done before a final diagnosis.

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