



Diagnosis of Tuberculosis among the Cases of Peripheral Lymphadenopathy with the Help of FNAC and CBNAAT at Tertiary Care Centre

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Abstract

Introduction

Normal lymph nodes are larger in children in whom a size of more than 2 cm is suggestive of a malignancy i.e., lymphoma or a granulomatous disease such as tuberculosis or cat scratch disease. In India tuberculosis is the first differential diagnosis for a patient who presents with chronic lymph node enlargement. This is the most common form of extra pulmonary tuberculosis. Pulmonary tuberculosis is the most common presentation. Extrapulmonary tuberculosis also common as it accounts for ~25% of all TB cases worldwide.

Aims & Objectives

To find out the incidences of tuberculosis among the cases of peripheral lymphadenopathies

Material & Method

A one year study was conducted in the Department of Pathology, Mahatma Gandhi Memorial Medical College and M.Y. Hospital, Indore, Madhya Pradesh, India. Permission was obtained from the departmental scientific committee and institutional ethical committee at the beginning of the study.

Result – with the help of FNAC 123 cases out of 176 diagnosed as Tubercular among them 54 (i.e. 43.9 %) were diagnosed on CBNAAT. Whereas 75 cases were positive for CBNAAT including other diagnosis on cytology.

Conclusion - The present study highlights the utility of CBNAAT from FNAC material as an adjuvant in the diagnosis of Tuberculosis lymphadenopathy as it improves the diagnostic efficacy mostly in the suspected cases of tuberculosis . CBNAAT did not diagnose more case of TB than FNAC however its is significant for diagnosis of TB especially in FNAC negative cases

Keywords: NIL

Introduction

The human body has around 600 lymph nodes[1]. Peripheral lymph nodes are located deep in the subcutaneous tissue and can be palpated when they enlarge. A normal sized lymph node is usually less than one cm in diameter[2]Lymphadenopathy (LAP) is the condition in which lymph nodes become abnormal in size, consistency, and number. Normal lymph nodes are larger in children in whom a size of more than 2 cm is suggestive of a malignancy i.e.,

lymphoma or a granulomatous disease such as tuberculosis or cat scratch disease.[3]

Lymphadenitis is the term used for inflammation of a lymph node. There may be either generalized lymphadenitis, involving a number of lymph nodes; or limited to a few node.

In India tuberculosis is the first differential diagnosis for a patient who presents with chronic lymph node

enlargement. This is the most common form of extra pulmonary tuberculosis.[4]

Pulmonary tuberculosis is the most common presentation. Extrapulmonary tuberculosis also common as it accounts for ~25% of all TB cases worldwide [5]

India is the country which has highest burden of TB. The World Health Organization (WHO) TB statistics for India for 2016 is 2.79 million cases of TB for India. In India approx. 220,000 deaths/year are reported due to Tuberculosis. The Global Tuberculosis Bulletin reported 9.6 million new TB cases in 2014. India is the global capital of the tuberculosis with an estimated 2.2 million active TB cases as on 2016. [6]

Aims & Objective

- 1) To find out the cases of tuberculosis among the cases of peripheral lymphadenopathies with the help of FNAC and CBNAAT
- 2) To find out the age and sex wise incidences.

Material & Methods

The above study was conducted in the Department of Pathology, Mahatma Gandhi Memorial Medical College and M.Y. Hospital, Indore, Madhya Pradesh, India. Permission was obtained from the departmental scientific committee and institutional ethical committee at the beginning of the study.

In our study we use the FNAC and CBNAAT both for the study of different cases.

Duration Of Study: 01 Year

Result & Observation:

Table 1:- Age Wise Distribution of Total Cases

Age Groups	No. Of Cases	Percentage
Less than 10 year	10	5.6%
11 – 20 year	43	24%
21- 30 year	75	43%
31 – 40 year	22	12.5%

Study Design: Prospective study.

Sample Size: 176 Cases.

Inclusion Criteria

1. All the patients present with peripheral lymphadenopathy attending M.Y. Hospital.
2. Patients having clinical features of tuberculosis.

Exclusion Criteria

- 1) All patients already diagnosed with MDR/XDR TB by CBNAAT.
- 2) All patients with active malignancy, terminal illness with poor prognosis.
- 3) All the non-cooperative patients, patients not willing to give consent for study.
- 4) All the patients with past history of TB treatment.

Materials And Methods:

In this study the subjects selected will be the patient referred from OPD, IPD and pulmonary medicine of M. Y. Hospital Indore.

Patient’s informed consent will be taken.

After that proper clinical examination and detailed history will be obtained.

Cases presented with the swelling (lymphadenopathies) were subjected first to FNAC.

Then the aspirated material is spread over the slide.

The extra aspirated material sends for CBNAAT. Aspirated material mixed in a vial containing 1 ml normal saline.

41 – 50 year	9	5.11%
51 – 60 year	8	4.5%
61 – 70 year	6	3.4%
More than 70 year	3	1.7%
Total	176	100%

Table no. 1 showing distribution of cases according to their age groups with most common age group being 21 to 30 year of age

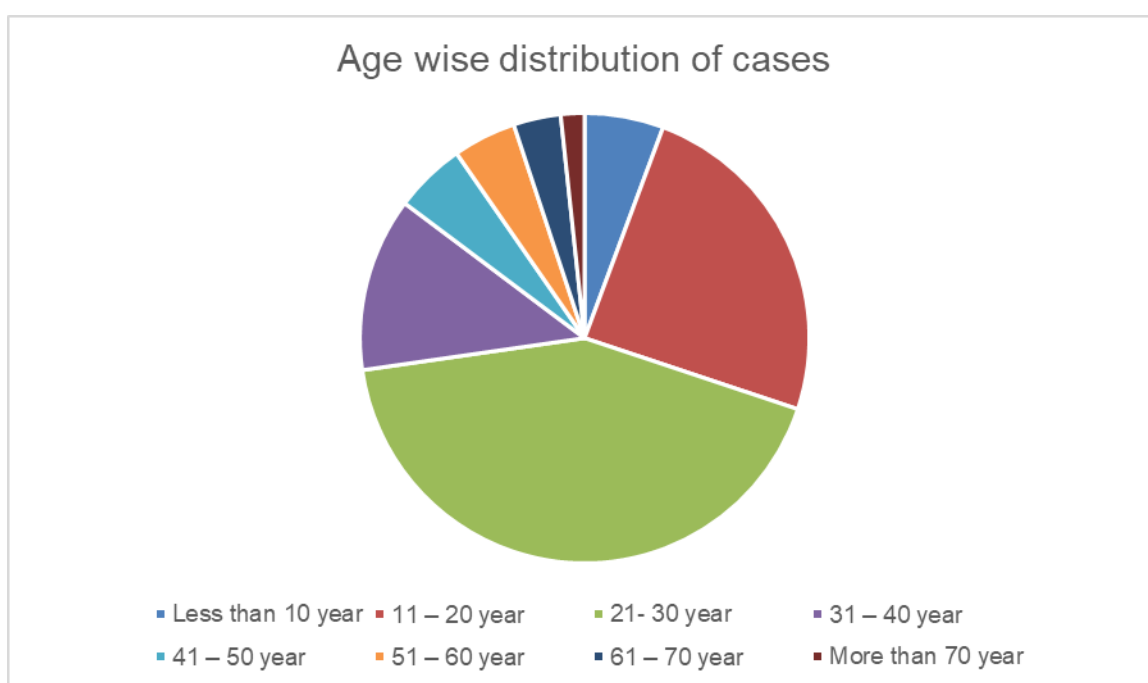


Table 2:- Sex Wise Distribution Of Cases

Sex Group	No. Of Cases	Percentage
Male	69	39.2%
Female	107	60.7%
Total	176	100%

Table no. 2 showing that females are most commonly affected with 107 cases

Table 3:- Diagnosis of lymphadenopathies

Cytomorphological Or FNA Diagnosis	Cases	Cbnaat Positive	Cbnaat Negative
Granulomatous Lesion	123	54 (43.9%)	69 (57%)
Abcess	06	06	00
Inflammatory Lesion	19	13	06
Reactive Hyperplasia Of Lymph Node	07	01	06
Metastatic Deposits Of Scc And Malignant Lesion	15	00	15
Other	06	01	05
Total	176	75	101

Table no. 3 showing that in various lymphadenopathies granulomatous lesions (tuberculosis) was found in 123 cases among them 54 are CBNAAT positive.

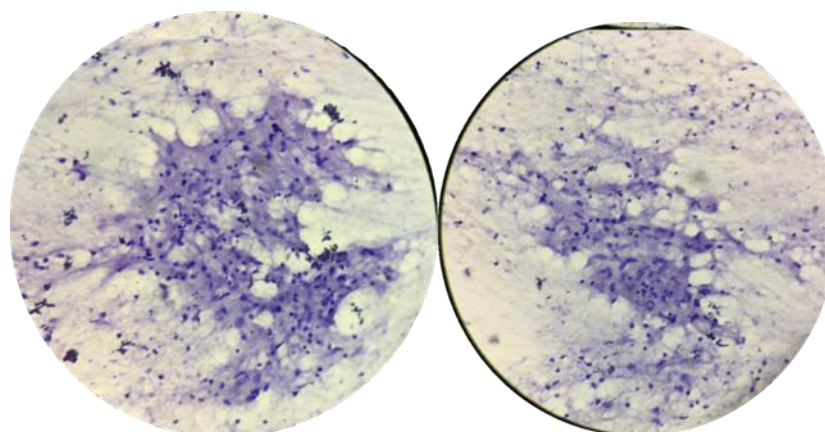


Fig: Cytomorphological Pictures Of Granulomataus Lesions (Tubercular)

Discussion

Khiste J.A et al found in his study that Tuberculous lymphadenitis was diagnosed on FNAC in 51.1% cases whereas CBNAAT was positive in 33.3% cases almost comparable with our study FNAC is posi-tive

in 123/176 cases i.e. 69.8% whereas CBNAAT was positive in 54/176 i.e. 30.6% ⁽⁷⁾

In a study done by Sharma SK et al, Xpert MTB had high sensitivity of 95.7% and specificity of 99.3% for detecting MTB in pulmonary samples of patients with TB. The sensitivity of Xpert MTB/RIF for

detecting smear-negative culture positive samples was 77.7%; its sensitivity for detecting smear-positive culture-positive samples was 99.2%.^[8]

In a study Out of the 145 cases, 90 (62.1%) aspirates were reported as cytomorphology suggestive of tuberculous lymphadenitis. Rest of the aspirates showed either blood or a reactive population of lymphoid cells only similarly in our study we have found that tuberculosis is most common finding.⁽⁹⁾

The study done by Singh K. G. et al showed FNAC was positive in 82.4% cases. However, CBNAAT was positive in 77.19% of tuberculous lymphadenitis cases. Similar observation was noted in the pre-sent study where 123 cases were diagnosed on FNAC whereas 75cases were positive on CBNAAT including those cases which were diagnosed as inflammatory, abscess, reactive etc on FNAC.⁽¹⁰⁾

Conclusion:

Tuberculosis is one of the leading public health problems worldwide. In present study we have found that the cervical lymphadenopathies are most commonly encountered.FNAC is the cheapest mode of diagnosis of different lymphadenopathies but CBNAAT can be combined as an adjunct . Combined use of FNAC and CBNAAT gives a maximum diagnostic yield and increase the rate of detection of tubercu-losis which will reduce mortality and morbidity due to tuberculosis.So with the help of FNAC 123 cases out of 176 diagnosed as Tubercular among them 54 (i.e. 43.9 %) were diagnosed on CBNAAT. Whereas 75 cas-es were positive for CBNAAT including other diagnosis on cytology.

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