

ORIGINAL ARTICLE

Comparison of Histopathology (Incisional Biopsy) Vs Fine Needle Aspiration Cytology in Diagnosing Tuberculous Cervical Lym-

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Abstract:

Background:

Objectives: To evaluate and compare the sensitivity and specificity between Fine Needle Aspiration Cytology (FNAC) and histopathology of incisional biopsy in diagnosing blood culture positive tuberculous lymphadenopathy (LAD).

Methods: This descriptive study was conducted in the Department of Pathology at Jinnah Teaching Hospital (JTH) Peshawar from January 2021 to August 2022. The study samples included were collected from the patients at tertiary care Hospitals who were acid fast bacillus (AFB) positive and blood culture positive. The culture and sensitivity and Zn staining was carried out at JTH Peshawar. Seventy subjects with AFB and culture positive with high clinical suspicion of tuberculous LAD were included in the study. After the recruitment of subjects according to the inclusion criteria, subjects underwent FNAC followed by incisional biopsy for histopathology carried out at JTH Peshawar. Subjects' blood was checked and screened for Hepatitis B and C, TLC, DLC and ESR at Microbiology and Haematology laboratories of JTH Peshawar respectively. The data was then organised and analysed in SPSS software version. 26.

Results: Out of the seventy subjects included in the study, 30 were males while 40 were females. Subjects had a mean age of 33.5 years. The sensitivity of FNAC was 89%, however the Specificity came out to be 59%.

Conclusion: Our study obviates the use of FNAC as a good screening test however due to the low specificity or in cases where there is a high clinical suspicion of TB, the results need to be confirmed by Incisional biopsy for histopathology. However, further studies are required for not only understanding the medical condition.

Keywords: Biopsy; FNAC; Tuberculosis; Lymphadenopathy

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Introduction

An abnormal increase in the size and inconsistent changes of lymph nodes are defined as lymphadenopathy (LAD). Aetiology includes; infectious, non-infectious and malignant diseases.

Out of the 800 lymph nodes present in the whole body almost 40% (roughly 300) nodes are present in the neck region. (1) Less than 3 mm the lymph node is considered normal. Literature reports that LAD of less than one cm is regarded as mostly benign whereas size greater than two cm points towards malignancy. (2)

TB is one of the earliest diseases that have affected the human race. It is a chronic granulomatous infection caused by the mycobacterium TB and less frequently by *Mycobacterium bovis*. It is a global menace due to high mortality and morbidity attributed to it. (3,4)

The most common form of extrapulmonary TB is reported to be TB LAD. (5) It is noteworthy here that nearly two third of the LAD caused by TB presents in the cervical region. (6)

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Studies have found that despite normal chest x-rays, patients with TB LAD can have positive sputum smears and cultures and may transmit TB to others. (7)

FNAC is a procedure that is of pivotal importance and great clinical relevance in the head and neck region due to the easy access of target tissue sites. It is a minimally invasive procedure and carries a practicable approach for planning surgeries (if needed) (8)

The aim of this article is to evaluate and compare the sensitivity and specificity between FNAC and histopathology of incisional biopsy in the diagnosing of TB LAD.

Methodology:

This descriptive study was carried out in the Dept. of Microbiology and Histopathology at Jinnah Medical College Peshawar from January 2021 to August 2022. The patients were evaluated at Jinnah Teaching Hospital, Peshawar for sputum smears and blood cultures by Zn staining and cultures and sensitivity. The study samples of the AFB positive patients were collected from the tertiary care hospitals of Peshawar. Seventy subjects with high clinical suspicion of tuberculous LAD were included in the study. After the recruitment of subjects according to the inclusion criteria, subjects underwent FNAC followed by incisional biopsy for histopathology at the Dept. of Histopathology JTH Peshawar. Subjects' blood was also checked and screened for Hepatitis B and C, TLC, DLC and ESR. The data was then organised and analysed in SPSS software version. 26.

Results:

Out of the seventy AFB positive subjects included in the study, 30 subjects were males while 40 were females. Subjects had a mean age of 33.5 years. The sensitivity of FNAC was 89%, however the Specificity came out to be 59%.

FNAC overall results

Table 1: Shows overall results of FNAC

Parameters	Percentages
Sensitivity	89%
Specificity	59%
False +ve	12%
False–ve	6%
True +ve	83%
True–ve	5%

FNAC and Histopathology results

Table 2: Shows results of FNAC and Histopathology

FNAC Results	Subjects
TB Present	58
TB Absent	12
Histopathological results	
TB Present	56
TB Absent	14

Discussion:

In our study the sensitivity of FNAC was 89% while specificity was 59%. The results of our study are in corroboration to another study conducted in Ethiopia found the sensitivity to be 81% and the specificity of 50%. (9) In contrast, most other studies noted much higher specificity when compared to the results of our study. The sensitivity ranged between 70-95% whereas the specificity ranged between a staggering 70-100% in most conducted research studies.(10–13)

A study conducted on 2418 cases in India revealed that FNAC findings correlated with histopathology in nearly half the cases with a sensitivity of 83% and specificity of 94% in cases of TB LAD. (14) In another study carried out in 35 subjects found the sensitivity and specificity of nearly 90%. (15)

Our study has found FNAC as a good tool for diagnosing TB LAD. It is of utmost importance that the simplicity of the procedure makes it suitable to perform it not only in outpatient settings but also primary and secondary care hospitals. However, the gold standard test to accurately and affectively diagnose a neck mass still remains Incisional biopsy for histopathology. (16,17)

Conclusion:

Our study obviates the use of FNAC as a good screening test however due to the low specificity or in cases where there is a high clinical suspicion of TB, the results need to be confirmed by Incisional biopsy for histopathology. However, further studies are required for not only understanding the medical condition.

Conflict of Interest

I declare that I have no conflict of interest.

Funding

I declare that I have no source of funding

Data

I declare that Data will be available on request.

Ethical approval:

Granted by the respective institutional board

Author's contributions

AK and SN were involved in the execution of the project designed, executed the study and wrote the manuscript. UA and MK helped in organization of data. SJ helped in editing. All named authors have read and approved the final version of the manuscript.

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