

Original Research Article


Cytomorphological patterns in clinically suspicious cases of tubercular lymphadenitis

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Abstract

Background: Lymphadenitis is the most frequent form of extrapulmonary tuberculosis. The diagnosis of tuberculous lymphadenitis remains challenging in spite of the availability of various diagnostic tools.

Aim: To study the cytomorphological patterns in clinically suspicious cases of Tubercular Lymphadenitis.

Materials and methods: A prospective study of the FNAC in 151 patients of suspected tubercular lymphadenitis was conducted. FNAC smears were stained with Leishman-Geimsa (dry), H&E and Pap (wet). Smears were examined and findings were grouped according to cytomorphological patterns. Cytomorphological diagnosis suggestive of tubercular lymphadenitis was made. For demonstration of AFB conventional Ziehl-Neelson (ZN) stain was used.

Results: 97 out of 151 cases were cytologically suggestive of tubercular lymphadenitis with following patterns: Necrotising granulomatous (25.1%), Granulomatous (15.2%) and Necrotising (23.9%). 21 out of 151 cases were cytologically diagnosed as Suppurative lymphadenitis. Remaining 33 out of 151 cases were of Chronic non-specific/ Reactive lymphadenitis. 61 out of 151 cases were positive for AFB with ZN stain. 58 out of 97 cytologically suggestive tubercular

lymphadenitis cases were AFB positive with ZN stain. Out of 21 cases of suppurative lymphadenitis, 3 showed AFB positivity on ZN staining.

Conclusion: In suspicious cases of tuberculosis, positivity for AFB aids to diagnosis as cytology of FNAC lymph node shows varied morphology.

Key words

Tubercular lymphadenitis, Cytomorphological pattern, TB.

Introduction

Lymphadenitis is the most frequent form of extrapulmonary tuberculosis. The diagnosis of tuberculous lymphadenitis remains challenging in spite of the availability of various diagnostic tools. Conventional methods, like ZN staining and culture for *Mycobacterium tuberculosis*, are traditionally used in the diagnosis of tuberculous lymphadenitis. However, none of these methods alone can diagnose all cases of TB lymphadenitis. Standard diagnostic algorithm for tuberculous lymphadenitis in India recommends FNAC with ZN staining for acid fast bacilli (AFB) in clinically suspected cases [1].

Aim and objectives

- To study the cytomorphological patterns in clinically suspicious cases of Tubercular Lymphadenitis.

Materials and methods

A prospective study of the FNAC in 151 patients of suspected tubercular lymphadenitis was conducted. FNAC smears were stained with Leishman-Geimsa (dry), H&E and Pap (wet). Smears were examined and findings were grouped according to cytomorphological patterns into:

Group I – Suppurative Lymphadenitis

Group II – Necrotising Granulomatous Lymphadenitis

Group III - Granulomatous Lymphadenitis

Group IV - Necrotising Lymphadenitis

Group V – Chronic non-specific/ Reactive Lymphadenitis (**Table - 1, Graph - 1**). Cytomorphological diagnosis suggestive of

tubercular lymphadenitis was made using criteria following 3 patterns:

1. Epithelioid granuloma with Necrosis.
2. Epithelioid granuloma only.
3. Necrosis only.

For demonstration of AFB conventional Ziehl-Neelson (ZN) stain was used.

Results

97 out of 151 cases were cytologically suggestive of tubercular lymphadenitis with following patterns: Necrotising granulomatous (25.1%), Granulomatous (15.2%) and Necrotising (23.9%). 21 out of 151 cases were cytologically diagnosed as Suppurative lymphadenitis. Remaining 33 out of 151 cases were of Chronic non-specific/ Reactive lymphadenitis (**Table - 1**).

Table – 1: Cytomorphological patterns.

Groups	Cyto-morphological patterns	No. of cases	%
1.	Suppurative Lymphadenitis	21	13.9%
2.	Necrotising Granulomatous	38	25.1%
3.	Granulomatous	23	15.2%
4.	Necrotising	36	23.9%
5.	Chronic non-specific / Reactive lymphadenitis	33	33%
	Total	151	100

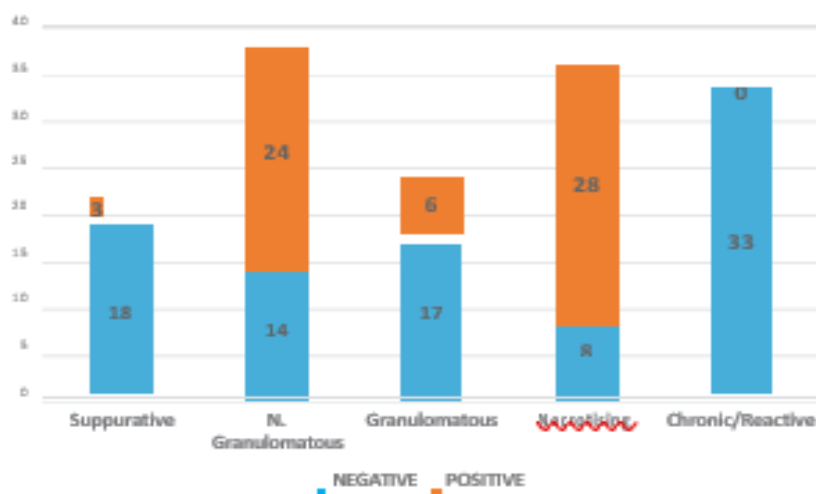
Table – 2: ZN staining.

Z.N staining	Percentage
Positive	61.40%
Negative	90.60%

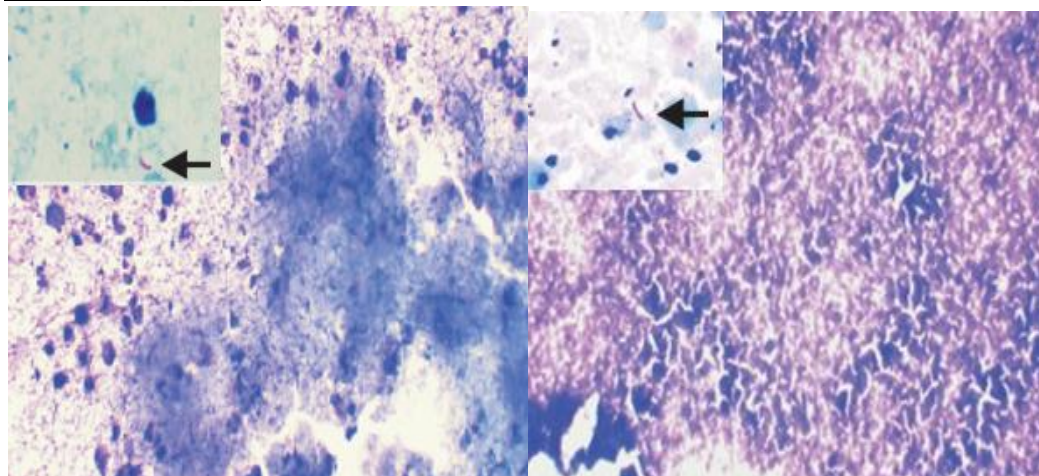
61 out of 151 cases were positive for AFB with ZN stain (**Table - 2**). 58 out of 97 cytologically suggestive tubercular lymphadenitis cases were AFB positive with ZN stain. Out of 21 cases of

suppurative lymphadenitis, 3 showed AFB positivity on ZN staining (**Graph - 1, Pictomicrograph - 1**).

Graph – 1: Cytomorphological pattern.



Pictomicrograph – 1: AFB bacilli in ZN stain.



Discussion

Conventional Ziehl-Neelson method for AFB plays a significant role in definite diagnosis of tuberculous lymphadenitis. However, its major disadvantages are low sensitivity, time consumption and oil immersion use. In the present study, 3 out of 21 cases of suppurative lymphadenitis were positive on ZN stain which is comparable to the study by Annam V, et al. [2]. This could be due to loss of bacilli amidst necrotic debris in ZN staining. 24 out of 38 cases of necrotizing granulomatous lymphadenitis, 6

out of 23 cases of granulomatous lymphadenitis and 28 out of 36 cases of necrotising lymphadenitis were AFB positive on ZN stain which is similar to the results of Bhardwaj S, et al. [3].

Conclusion

In suspicious cases of tuberculosis, positivity for AFB aids to diagnosis as cytology of FNAC lymph node shows varied morphology.

References

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