

STUDY OF BACTERIOLOGICAL AND MORPHOLOGICAL INDICES IN LYMPH NODE BY NEEDLE ASPIRATION

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Summary

Bacillary index (BI) and morphological index (MI) in lymph nodes have been studied in 30 patients with various types of leprosy by lymph node aspiration and impression smears. This comparatively safer, less traumatising out-patient procedure, already established for the study of Malignant cytology, is recommended as a better alternative to the more time-consuming and painful lymph node excision biopsy technique for the study of viability of lepra bacilli (MI) in patients undergoing anti-leprosy treatment.

Histological studies in man and mice have indicated that all leprosy infections are systemic. The tissues which contain the largest number of bacilli in lepromatous leprosy are skin, nasal mucosa, peripheral nerves and reticulo-endothelial system (Memoranda, Immunological Problems in Leprosy Research-I Bull. WHO 48, pp. 345-354). It has been well established that morphological index (MI) of skin falls to practically zero in three to six months following treatment with standard dosage of dapsone¹ and it may remain insignificant in reactional stages². It may, therefore, be of interest to assess the status of viability of the organism as well as the degree of involvement (BI) of the tissues other than skin, especially the reticulo-endothelial system.

Study of bacillary population in lymph node has been usefully made by impression smears of excised lymph nodes in comparison to skin, bone marrow, muscle and nerve². Lymph node aspiration smears³ in comparison to skin and impression of lymph nodes especially in reactional states revealed equally significant findings. The simplicity and insignificant traumatism of the technique which could be performed as an out-patient procedure prompted us for the initial study of which this is the extension.

Material and Methods

Thirty patients with leprosy were studied from the Dermatology Department of Post-Graduate Institute of Medical Education & Research, Chandigarh. Most of the patients belonged to lepromatous and borderline groups. The age, sex, duration of illness and treatment were not taken into consideration for inclusion in the study. Aspiration biopsy was attempted on these patients, which was followed by excision biopsy of the lymph node. Palpable lymph nodes were generally picked up in the inguinal region (right or left). The technique of Franzen

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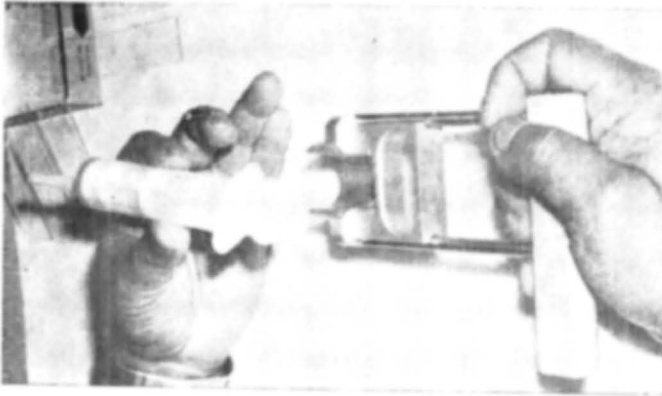


Fig. 1

The instrument used for lymph node aspiration.

and Zajicek⁴ was applied for aspiration and preparation of slides (fig. 1). The lymph node was firmly stabilised with the thumb and index finger of left hand and the needle (25 x 0.6 mm) attached to a 20 ml. disposable syringe was inserted into the pulp of the lymph node. The tip of the needle was moved a few times within the substance of the lymph node, simultaneously applying negative suction by pulling the plunger. The puncture was made without local anaesthetic. Two smears made from the thick milky aspirate were stained with Ziehl-Neelson stain for lepra bacilli (Fig. 2). Slides from excised lymph node impression smears (Fig. 3) were stained the same way by modified technique of Fite et al⁵. Bacteriological (BI) and morphological (MI) indices were calculated according

to the method of Ridley⁶ and Waters and Rees⁷ respectively. BI and MI obtained from lymph node aspirate were compared with the values obtained from excised lymph node impression smears.

Results

Out of the thirty patients, twenty three were males and seven were females. Seventeen patients were classified as borderline lepromatous (LL) and thirteen as borderline (BT, BB, BL). One patient with borderline tuberculoid leprosy was in reaction. Comparative values of BI and MI of lymph node aspiration smears and lymph node impression smears are given in Table 1.

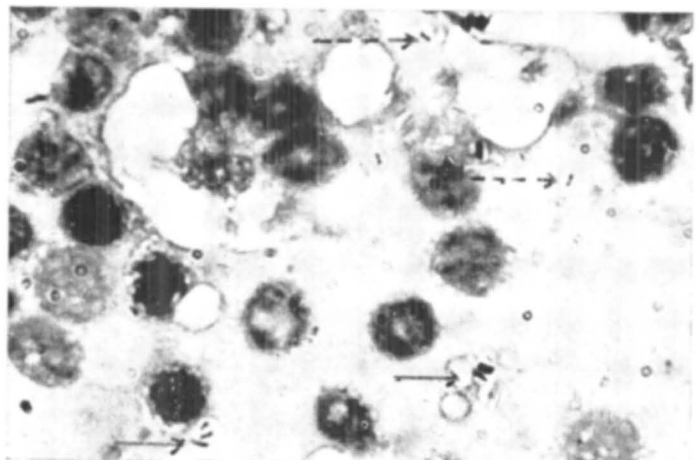


Fig. 2

Solid staining (———) bacilli and fragmented (.....) bacilli in lymphnode aspirate.

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TABLE I
Comparative values of BI* and MI† obtained by lymph node aspiration and excised lymph node impression smears.

No.	Age/Sex	Diagnosis	Lymph node	Aspiration Smear	Lymph node	Impression Smear
			BI*	MI†	BI*	MI†
				%		%
1.	43/M	LL	6+	54	5+	57
2.	26/M	LL	5+	48	6+	36
3.	21/M	LL	6+	27	4+	36
4.	48/M	LL	2+	22	4+	23
5.	50/M	LL	6+	30	6+	28
6.	38/M	LL	5+	24	4+	20
7.	48/M	LL	5+	25	6+	16
8.	22/F	BB	1+	NP	1+	NP
9.	40/F	BB	1+	NP	1+	NP
10.	35/M	BT	3+	13	3+	16
11.	55/M	LL	5+	25	5+	25
12.	45/M	BL	1+	NP	1+	NP
13.	34/M	LL	5+	21	6+	20
14.	45/M	LL	No AFB	No AFB	1+	NP
15.	33/M	LL	5+	2	6+	24
16.	25/F	BT	1+	NP	1+	NP
		(in reaction)				
17.	25/F	BL	No AFB	No AFB	2+	20
18.	30/M	LL	4+	19	4+	24
19.	25/M	LL	5+	21	4+	25
20.	28/M	LL	5+	16	4+	22
21.	48/M	BL	2+	50	2+	52
22.	45/M	BT	No AFB	No AFB	No AFB	No AFB
23.	30/F	LL	5+	40	4+	33
24.	26/F	BB	1+	NP	1+	NP
25.	50/M	BB	1+	NP	2+	12
26.	65/M	BB	No AFB	No AFB	No AFB	No AFB
27.	45/F	BB	1+	NP	No AFB	No AFB
28.	50/M	BB	1+	NP	3+	9
29.	45/M	LL	No AFB	No AFB	No AFB	No AFB
30.	14/M	LL	6+	8	5+	12

* BI — Bacteriological Index

† MI — Morphological Index

NP — Not possible

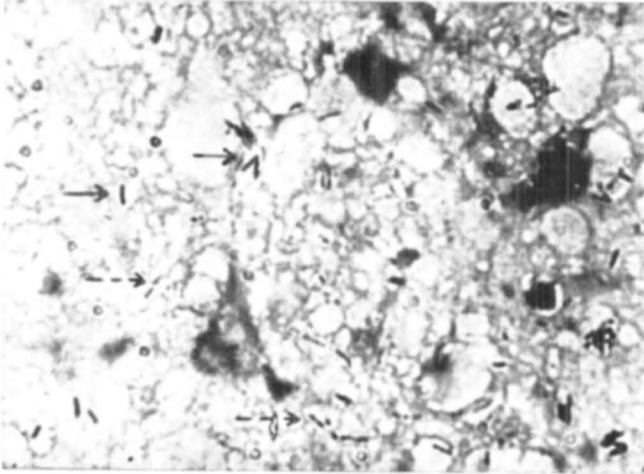


Fig. 3 The same as in Fig. 2 in lymph node impression smear.

Comparison of B I values obtained from aspiration smear with values from impression smear, showed equal values by both methods in 10, higher values by the aspiration method in 8 and lower values by the same method in 9. In three patients, no bacilli were found by either method. Similarly, M I obtained with aspiration was higher than that with impression smear in 6, equal in one and lower in 10. Counting was not possible in lymph node aspirates of eight patients and in seven the counting was not possible by either method due to scanty bacillary population. In five patients no A F B were seen in aspiration smear, and in three out of these, no A F B could be seen in lymph node impression smear also. One patient with concomitant tuberculosis did not show A F B in lymph node aspiration smear.

Discussion

It is apparent from the study that lymph node aspiration smears give almost the same information about the bacillary status as obtained from more traumatising, time consuming and hazardous procedure of lymph node biopsy. No doubt the number of bacilli (B I) visualised in the aspiration smear were less as compared to the number

in impression smear and in some cases calculation of M I was not possible, but the cases in which the bacilli were too few in the lymph node, the slicing may not have gone through the plane where the bacilli were located. In one such case the bacilli were not seen in impression smear but were present in the aspiration smear. The study of lymph node in preference to slit smear has already been proved and advocated² because of the latter becoming negative sooner, following treatment¹ and remaining negative in reactional states.

The study of lymph nodes by aspiration technique is recommended as a more acceptable and useful method for follow up in patients on anti-leprosy treatment and in reactional states rather than the routine methods of skin and lymph nodes excision biopsy smears.

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Announcement...

The Indonesian Society of Dermatology and Venereology (PADVI) is having her third Congress in Medan on May 31-June 4, 1980. Previous ones were held in Jakarta (1972) and Surabaya (1976).

The third National Congress will discuss various topics on recent advances on dermato-venereology, e.g. leprosy, skin surgery and sexually transmitted diseases (STD).

Additionally several guest lecturers will be invited from scientifically advanced countries to improve the quality of congress.

As in previous congresses, the program will consist not only of scientific meetings, but also of relax opportunities for the members of PADVI to meet and know each other including their families. It will give also a golden opportunity to meet colleagues from abroad and other colleagues from Indonesia, while enjoying the beautiful scenes of North Sumatra with her famous Toba Lake.

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