

Fine Needle Aspiration of Lymph Nodes in Leprosy. A Study of Bacteriologic and Morphologic Indices¹

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Leprosy is now accepted as a multisystem disease. Though the pathology is primarily of skin and nerves (¹¹), involvement of the reticuloendothelial system may be the heaviest and most pronounced (¹³). Some degree of lymph node involvement occurs in all varieties of leprosy. The enlargement is maximum in lepromatous leprosy where the lymphadenopathy may simulate tuberculous or neoplastic etiology, even with sinus formation.

Study of lymph node morphology has been compared with the immunologic status of the patient (^{14, 15}). Impression smears of excised lymph nodes have been used for comparative evaluation of Bacteriologic (BI) and Morphologic Indices (MI) with skin, bone marrow, muscle and nerve (¹⁰). The MI was found to be generally higher in lymph nodes as compared to skin. The differences were significant in reaction phases when the MI of skin was often zero. The results from lymph node impression smears were sufficiently encouraging to stimulate further study with an easier and less traumatic technic than the excision biopsy. Fine needle aspiration of lymph nodes was tried.

The application of aspiration biopsy in cytologic diagnosis of tumors is well known. A high degree of correlation is obtained between aspiration cytology and histology (^{1, 3, 7, 9}). Its simplicity and minimal trauma of technic prompted us to try it in our patients to see if this could replace the excision biopsy of lymph nodes in the study of the BI and MI.

MATERIALS AND METHODS

Aspiration biopsy was performed in 16 patients; this was followed by the excision biopsy of the palpable lymph nodes which were always taken from the inguinal region.

The technic of aspiration and method of preparation of slides was the same as described by Franzen and Zajicek (⁷). The aspiration instrument is shown in Figure 1. The right hand carries the handle designed to fit a 20 ml disposable syringe. The lymph node is fixed between the thumb and index finger of the left hand, and a fine aspiration needle (25 × 0.6 mm) carried on the syringe is inserted into the lymph node while producing negative suction with the plunger simultaneously. The tip of the needle is moved in the pulp of the lymph node by repeatedly pulling and pushing the needle a few millimeters each time. Lymph node puncture is made without local anesthetic. Two smears were made from the thick, milky fluid aspirate. One was stained with May-Grunwald Giemsa (MGG) for the study of cellular morphology and the other for staining with the Ziehl-Neelsen method for leprosy bacilli (Fig. 2). The impression smears of lymph nodes were also stained with the Ziehl-Neelsen stain for leprosy bacilli by the modified technic of Fite *et al* (⁸). The BI and MI were studied according to the method of Ridley (¹²). Slit smears were also made from these patients and stained with the Ziehl-Neelsen stain for the study of BI and MI and compared with the findings obtained from lymph node aspiration and impression smears.

RESULTS

Thirteen of 16 patients were males, and 3 were females. Their ages ranged from 21 to 55 years. Eleven patients were classified as lepromatous (LL) and five as borderline (BL-2, BT-2) leprosy; one patient with BT leprosy was in reaction. Comparative values of BI and MI of lymph node aspiration smears, lymph node impression smears and slit smears from skin are shown in Table 1.

As compared to the BI of the skin, the BI obtained by lymph node aspiration was higher in ten patients, equal in five; and in one lepromatous patient suffering from concomitant tuberculosis, no AFB were demonstrated in the caseous material aspirated from the

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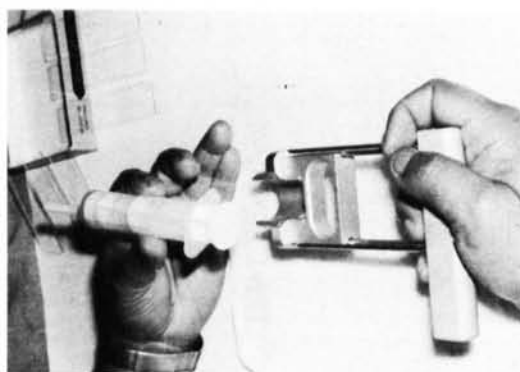


FIG. 1. Aspiration biopsy instrument.

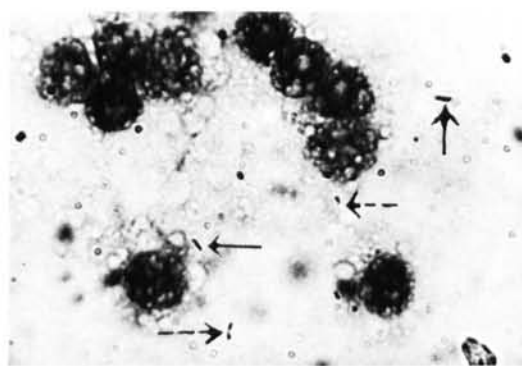


FIG. 2. Solid staining bacilli (—), fragmented bacilli (-----), in lymph node aspirate.

lymph node. Similarly, compared to the BI of skin, findings obtained from lymph node impression smears were higher in nine, similar in six, and lower in one patient.

The MI of the lymph node aspirates was found to be higher than the MI of the skin in eleven patients, while in four counting was not possible due to scarcity of bacilli. AFB were not seen in one patient. The MI of the lymph node impression smears as compared to the MI of the skin was found to be higher in eight, equal in two, and lower in one. Counting was not possible due to scanty bacillary population in five, both in aspiration and impression smears. The patient having

BT leprosy in reaction showed scanty bacilli in all three situations (BI—1+), hence the study of MI was not possible.

In comparing the BI obtained from aspiration with the values obtained from the impression smears, it was found to be higher in three, equal in seven, and lower in six. Similarly, the MI obtained with the aspiration method was higher in five, equal in one, lower in five, and counting was not possible in five due to scarcity of bacilli in both types of determinations. No AFB were seen in one specimen of lymph node aspiration in a patient suffering with concomitant tuberculosis.

TABLE 1. Comparative values of the BI and MI in slit smears of skin, and impression and aspiration smears of lymph nodes in leprosy.

S. No.	Age/ Sex	Diagnosis	Lymph node aspiration smears		Lymph node impression smears		Skin slit smears	
			BI	MI %	BI	MI %	BI	MI %
1.	43 M	LL	6+	54	5+	57	2+	28
2.	26 M	LL	5+	48	6+	36	2+	25
3.	21 M	LL	6+	27	4+	29	3+	25
4.	48 M	LL	2+	22	4+	23	1+	NP
5.	50 M	LL	6+	30	6+	28	3+	18
6.	38 M	LL	5+	24	4+	20	4+	20
7.	48 M	LL	5+	25	6+	16	3+	20
8.	22 F	BB	1+	NP ^a	1+	NP	1+	NP
9.	40 F	BB	1+	NP	1+	NP	1+	NP
10.	35 M	BT	3+	13	3+	16	1+	NP
11.	55 M	LL	5+	25	5+	25	5+	20
12.	45 M	BL	1+	NP	1+	NP	1+	NP
13.	34 M	LL	5+	21	6+	20	4+	20
14.	45 M	LL	No AFB	No AFB	1+	NP	2+	38
15.	33 M	LL	5+	22	6+	24	1+	NP
16.	25 F	BT	1+	NP	1+	NP	1+	NP

(in reaction)

^aNP = not possible.

DISCUSSION

It is apparent from this study that the aspiration biopsy technic gives almost similar information about the BI and MI as that obtained from the more time consuming traumatic procedure of excision biopsy impression smears. The study of lymph nodes in preference to slit smears has already been proved and advocated (10) because the slit smears become negative sooner following treatment (2), and may remain negative in the reactional states. Studies of lymph node aspiration are recommended as a better and more suitable method of follow-up in patients on antileprosy treatment and in reactional states as compared to the routine methods of slit smears or lymph node excision biopsy smears.

SUMMARY

Lymph node aspiration was performed from the inguinal group of lymph nodes in 16 patients having lepromatous or borderline leprosy. In the same group of patients impression smears of excised lymph node and slit smears of the skin were also studied. This study made it obvious that the aspiration biopsy technic gave similar information regarding the Bacteriologic (BI) and Morphologic Indices (MI) as the impression smears of excised lymph nodes. The technic of aspiration being simple and nontraumatic is recommended for the follow-up of patients on antileprosy drugs and in reactional phases.

RESUMEN

Se practicó la aspiración de gánglios linfáticos del grupo inguinal en 16 pacientes con lepra lepromatosa o intermedia (borderline). En el mismo grupo de pacientes también se analizaron improntas de los gánglios linfáticos extirpados e impresiones obtenidas insertando laminillas de vidrio en ranuras practicadas en la piel. Se encontró que la técnica de biopsia por aspiración y la de improntas de los gánglios extirpados dieron información similar en cuanto a los índices bacteriológico (IB) y morfológico (IM). Se recomienda la técnica de aspiración, por ser simple y no traumática, para seguir la evolución de los pacientes bajo terapia antileprosa y durante las fases reaccionales.

RÉSUMÉ

Chez 16 malades atteints de lèpre lépromateuse ou borderline, on a procédé à une aspiration des ganglions lymphatiques du groupe inguinal. Dans

le même groupe de malades, on a effectué des frottis par écrasement des ganglions lymphatiques excisés, et des frottis étalés de la peau. Cette étude a clairement démontré que la technique de biopsie par aspiration fournit des informations semblables en ce qui concerne l'Index Bactériologique et l'Index Morphologique, à celles qui sont fournies par les frottis par écrasement à partir des nodules lymphatiques excisés. La technique des aspirations est simple et non traumatique. Elle est dès lors recommandée pour suivre les malades qui sont traités par des médicaments antilépreux, ou qui sont en état réactionnel.

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