LYMPH-NODE INVOLVEMENT IN TUBERCULOID LEPROSY

R. V. KORANNE,* RATAN SINGH † AND B. IYENGAR ‡

Summary

Twenty-two untreated cases of proved tuberculoid leprosy and five healthy persons in the control group were studied histopathologically for involvement of the lymph nodes. 54.54% (12 cases) in the study group showed positive evidence of lymph node involvement. Ten patients (45.45%) showed the presence of granuloma in the lymph nodes. Eight cases (36.36%) had acid fast bacilli in the lymph nodes; six (75%) of them had granulomas as well and in two cases (25%) bacilli were present without granulomatous foci. There was no evidence of tuberculosis. In the control group, none showed any pathology in the lymph nodes. In two cases, the leprous granuloma and bacilli were seen in lymph nodes which were outside lymphatic drainage area of the cutaneous lesions. 36.84% of these cases also showed evidence of leprous pathology in the liver.

The involvement of lymph node in leprosy has been recorded early in the fifteenth century by Gadesden[1]. In the modern times Klingmuller[2], Mitsuda and Ogawa[3] and Furness[4] described in detail the lymph node changes in lepromatous leprosy. But the involvement of lymph nodes in tuberculoid leprosy has been very infrequently reported. Clinical enlargement of the lymph nodes in tuberculoid leprosy has been noted by Sharma and Srivastava[5] and Dharmendra[6]. Furness[4] believed that the enlargement of lymph nodes in tuberculoid leprosy was of non-specific nature. However, Lowe[7] and Desikan and Job[8] reported definite lymph node involvement in tuberculoid leprosy.

The present study was undertaken to investigate further the presence of specific pathological changes in lymph nodes in tuberculoid leprosy and is the continuation of an earlier study by the authors[9].

Material and Methods

Twenty-two untreated patients with tuberculoid leprosy, proved histopathologically and immunologically, attending the out-patients section of Dermatology Department of Maulana Azad Medical College and Associated Irwin and G.B. Pant Hospitals, New Delhi formed the subject matter for the study. This included 19 cases of tuberculoid leprosy in whom liver changes have already been reported[9]. Five normal healthy persons were also studied as control. Concomitant tuberculosis was ruled out by clinical and radiological examination in all cases.

* Ex-Resident,
† Professor and Head of the Department,
‡ Assistant Professor of Pathology,
Department of Dermatology and Venereology
Maulana Azad Medical College, New Delhi-2.

Request for reprints to :
Dr. Ratan Singh, Department of
Dermatology and Venereology,
Maulana Azad Medical College,
New Delhi - 110002

Received for publication on 27—1—78.

Tuberculin test using 5 T.U. of PPD tuberculin and lepromin test using Dharmendra antigen were carried out in each case.

The enlarged regional lymph node, in relation to tuberculoid patch, was removed aseptically, placed in 10% formol saline fixative and processed for histopathological studies. Where no enlarged regional lymph node was available, lymph nodes from other sites were obtained. Inguinal lymph nodes alone were studied in the Control Group. After processing, sections from each specimen were stained with both Harris' haemotoxylene and eosin solutions and also with Ziehl Neelsen Method and studied.

Results

Clinical categorisation of cases and the results of investigations in both the study and the control groups are shown in the Table. Eighteen (81.81%) patients were males and four (18.19%) were females. The youngest patient was 12 years old and the oldest was 70 years. Seven patients (31.81%) had tuberculoid major patches, five (22.73%) tuberculoid minor lesions, eight (36.36%) maculo-anaesthetic and two (9.10%) primary mono-neuritic leprosy.

Six patients (27.27%) had the disease for less than 6 months. Duration of the illness in rest of the cases ranged from 7 months to 3 years.

All the 24 patients (.00%) had positive tuberculin reaction. Three of the healthy controls also had positive tuberculin reaction.

Early lepromin (Fernandez) reaction was positive in all the 22 cases of tuberculoid leprosy. One healthy control also showed weak positive early reaction. Late reactions were positive (7.5–10 mm) in six, negative in nine and not recorded in seven patients as they could not be followed up for four weeks. Late reactions were negative in all the healthy controls.

In the study group, out of 22 lymph nodes studied, fourteen were from inguinal, six from epitrochlear and one each from cervical and axillary regions; out of these, fifteen (68.18%) were from the area of drainage of the lesions and seven were from outside the drainage area of cutaneous lesions.

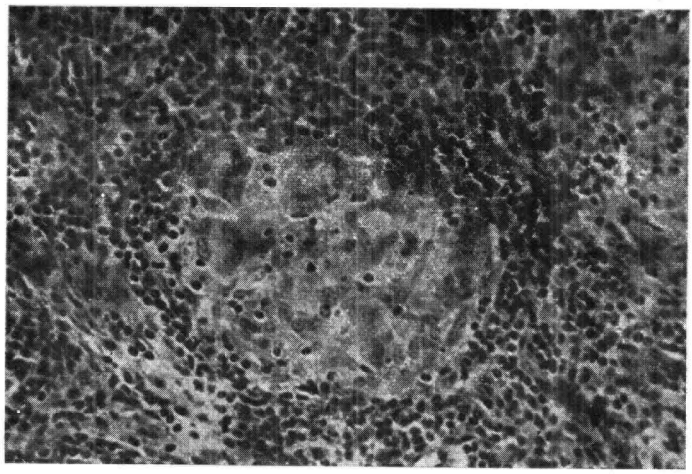

Fig 1 Histo-pathology of lymph node showing granuloma consisting of epitheloid cells and large number of Langhans giant cells (H & E × 400)

The lymph nodes in the study group were small and discrete. The cut surfaces showed a uniformly pinkish surface. There was no thickening of the capsule. There was no evidence of periadenitis. Ten (45.45%) lymph nodes showed granulomas, consisting of groups

TABLE 1

Project Group Case No.	Age in Years	Sex	Duration of disease in months	Clinical & No. of lesions	Type	Tuberculin test m. m.	Lepromin test		Lymph node biopsy site		Lymph node histopathology			
							Early m. m.	Late m. m.	Regional lymph node	Non-Regional lymph node	GR	SH	RLA	AFB
1.	35	M	9	T. Min.	1	6	16	Neg.	+	—	+	—	—	+
2.	30	F	8	T. Maj.	3	8	22	N. O.	+	—	—	+	—	—
3.	70	M	4	T. Maj.	1	6	20	N. O.	+	—	+	—	—	—
4.	26	M	14	T. Maj.	1	8	15	10	—	+	—	+	—	—
5.	12	M	8	M. A.	3	5	15	Neg.	+	—	—	+	+	—
6.	20	F	24	T. Maj.	2	6	15	N. O.	+	—	+	—	—	+
7.	20	M	18	M. A.	3	10	16	Neg.	—	+	—	+	+	—
8.	19	M	12	M. A.	2	6	15	Neg.	+	—	—	—	+	—
9.	18	M	36	M. A.	1	5	12	Neg.	+	—	+	—	—	+
10.	15	M	24	T. Maj.	1	6	18	10	—	+	—	+	+	—
11.	35	M	30	T. Min.	1	10	22	10	+	—	—	+	—	—
12.	21	M	24	T. Min.	3	6	14	7.5	—	+	—	+	—	—
13.	15	M	11	M. N.	1	5	12	N. O.	+	—	+	—	—	—
14.	30	M	24	M. N.	1	8	10	Neg.	—	+	+	—	—	+
15.	25	M	7	T. Min.	1	6	20	N. O.	—	+	—	+	—	—
16.	25	F	16	M. A.	1	5	15	Neg.	+	—	—	—	+	—
17.	22	M	3	T. Maj.	1	12	22	10	+	—	+	+	—	—
18.	27	M	5½	M. A.	1	6	12	Neg.	+	—	—	—	+	+
19.	35	M	5½	M. A.	2	12	15	N. O.	+	—	+	+	—	—
21.	19	M	2	M. A.	2	5	15	Neg.	+	—	+	—	—	+
22.	50	F	8	T. Min.	3	8	20	N. O.	+	—	—	+	+	+
23.	35	M	2	T. Maj	2	14	22	10	—	+	+	+	—	+
Case No.						HEALTHY GROUP								
1.	17	M				Neg.	10	Neg.			—	—	—	—
2.	20	M				10	Neg.	Neg.			—	—	—	—
3.	19	M				Neg.	Neg.	Neg.			—	—	—	—
4.	25	M				8	Neg.	Neg.			—	—	—	—
5.	23	M				5	Neg.	Neg.			—	—	—	—

KEY :-

T. Min.	—	Tuberculoid Minor
T. Maj.	—	Tuberculoid Major
M. A.	—	Maculo-Anaesthetic
M. N.	—	Mono-Neuritic
GR.	—	Granuloma
SH.	—	Sinus Histiocytosis
RLA.	—	Reactive lymphadenitis
AFB.	—	Acid fast bacilli
N. O.	—	Not Observed

TABLE :- Clinico-histopathological study of the lymph nodes in 22 tuberculoid leprosy patients & 5 healthy controls.

of epitheloid cells. Two of them had Langhans giant cells also (Fig.). The granulomas were small in size and few in number. Eight lymph nodes draining the lesion sites had granulomas. Two of the lymph nodes (case numbers 14 & 23) showing granulomatous infiltration were from sites which were outside the lymphatic drainage of the cutaneous lesions. Sinus histiocytosis was seen in 12 cases (54.54%). Out of these, 3 had granulomas and 4 had reactive lymphadenitis. Seven cases showed reactive lymphadenitis. Acid fast bacilli were seen in eight (36.36%) lymph nodes of which acid fast bacilli were present in granuhp matous foci in six cases. In two cases the bacilli were seen without granulomas. Four cases showing granulomas did not have acid fast bacilli. In two cases (case numbers 14 & 23), acid fast bacilli were seen in non-regional lymph nodes.

The lymph nodes in the control group did not show any evidence of granuloma formation, sinus histiocytosis or reactive lymphadenitis. In none AFB were demonstrated.

Discussion

Tuberculoid granulomas were observed in 10 out of 22 cases (45.45%). This compares favourably with the findings (40%) of Desikan and Job[8].

Lowe[7] found bacilli in one out of his 11 cases, whereas Desikan and Job[8] did not find any in their cases, although they were able to identify tuberculoid granulomas in 40% cases. In the present study, acid fast bacilli were observed in eight cases (36.36%); this high percentage could be due to relatively large number of cases studied.

In the present study, the presence of tuberculoid foci and the acid fast bacilli in two cases, from lymph nodes which were outside the lymphatic drainage area of the cutaneous lesion, is considered very significant.

The granulomatous lesions and the presence of acid fast bacilli, in the lymph nodes, can be taken of leprous etiology, as all these cases were carefully screened for any evidence of concomitant tuberculosis. Further, none in the control group showed any pathology or presence of acid fast bacilli.

Out of the 22 cases studied, 19 cases are those in which liver involvement has been studied and reported earlier[9]. It is note-worthy, that seven (36.84%) showed evidence of leprous involvement in both liver and lymph nodes.

Acknowledgement

This article has been abstracted from the thesis submitted by Dr. R. V. Koranne to the University of Delhi in August, 1975, in part fulfilment for M. D. (Dermatology including Leprosy & V. D.) degree.

References :

1. Gadesden Jode : Rosa anglica practica Medicinae Papiae. Quoted by Sharma KD and Srivastava JB : Int J Lepr, 26 : 41, 1958.
2. Klingmuller V : Die Lepra Handb. Haut U. Geschi – Krankh, Berlin, Julis Springer. 2, 1930.
3. Mitsuda K and Ogawa MA : Study of one hundred and fifty autopsies on cases of leprosy. Int J Lepr, 5 : 53, 1937.
4. Furness AL : The lymph glands in leprosy. Indian J Med Sci, 7 : 475, 1953.
5. Sharma KD and Srivastava JB : Lymph nodes in leprosy. Int J Lepr 26 : 41, 1958.
6. Dharmendra : Notes on leprosy ; Ministry of Health, Govt. of India, N. Delhi. 2nd Edition, 1967.
7. Lowe J : Tuberculoid changes in lymph nodes in leprosy. Int J Leprosy, 7 : 73, 1939.
8. Desikan KV and Job CK : Leprous lymphadenitis, demonstration of tuberculoid lesions. Int J Leprosy, 34 : 147, 1966.
9. Koranne RV, Singh Rattan and Iyengar B : Liver Involvement in Tuberculoid Leprosy (Under publication).