

CORNEAL BLINDNESS IN LEPROSY IN EASTERN UTTAR PRADESH

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One hundred and eighteen cases of leprosy with ocular involvement were found to have corneal involvement out of a total 274 cases of ocular involvement in leprosy. The common eye lesions observed were chronic conjunctivitis (54.01%), keratitis (47.07%), iritis (31.75%) and lagophthalmos (27.76%). In 38.98% of the cases, the time lag between the onset of skin lesions and corneal lesions was 5 to 15 years. The major causes which led to involvement of cornea were corneal anaesthesia (116), lagophthalmos (76), ectropion (21), entropion (11) and trichiasis (4). Corneal blindness constituted 55.6% of total blindness in leprosy with ocular involvement.

Key words : Leprosy, Cornea, Blindness.

Leprosy involves almost all the organs of the body. In the eye, it has a special predilection for the anterior segment, involvement of the posterior segment is rare.¹⁻⁴ Involvement of the eye in fact, ultimately leads to blindness. Involvement of the ocular tissues could be due to the involvement of 5th and 7th cranial nerves, direct bacterial invasion or hypersensitivity reactions or due to secondary infections.³⁻⁵

Materials and Methods

The present study was conducted with patients from the Leprosy department of Medical College, Gorakhpur, Kusht Ashram and other leprosy centres and field surveys of the adjoining districts, between October 1981 and August 1982. All the patients were examined by the leprologists and ophthalmologists. The diagnosis of leprosy was confirmed by the clinical signs and examina-

tion of the skin and nasal smears. The age, sex, duration of leprosy, the time lag between the skin lesions and the eye lesions and status of treatment were recorded. The patients having visual acuity less than 3/60 were labelled as blind.

Results

During the period of study, 995 cases of leprosy were examined, of whom 274 (27.54%) patients had ocular involvement. Among the total leprosy cases, 80.8% were males and 19.2% females, while among the cases with ocular involvement 75.55% were males and 24.45% females. Maximum incidence (55.27%) of ocular involvement was observed in lepromatous type of leprosy (Table I). Among the different sources of the leprosy patients, the ocular involvement was highest in cases taken from leprosy homes (Table II). The major eye lesions observed were chronic conjunctivitis (54.01%), keratitis (47.07%) and iritis (31.75%) (Table III).

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Table I. Distribution of cases according to the type of leprosy.

Type of leprosy	Leprosy patients studied	Ocular involvement cases observed	
		Number	Percentage
1. Lepromatous	242	134	55.27
2. Tuberculoid	138	42	30.44
3. Borderline	160	70	43.75
4. Polyneuritic	145	14	9.66
5. Maculo-anaesthetic	310	14	4.52
Total	995	274	27.54

Table II. Distribution of cases according to their sources.

Sources	Total leprosy patients studied		Cases with ocular involvement	
	Number	Percentage	Number	Percentage
1. Leprosy Deptt. of Medical College, Gorakhpur	365	36.68	70	19.12
2. Kusht ashram	270	27.13	122	45.19
3. Field surveys	360	36.19	82	22.78
Total	995	100.00	274	27.54

Table III. Distribution of eye lesions.

Eye lesions	Number of cases	Percentage
1. Loss of eyebrows and eyelashes (Madarosis)	72	26.28
2. Trichiasis	4	1.46
3. Entropion/Ectropion	32	11.67
4. Lagophthalmos	76	27.76
5. Chronic conjunctivitis	148	54.01
6. Keratitis	118	47.07
7. Scleritis/Episcleritis	40	14.60
8. Iritis	87	31.75

The corneal involvement in 53.57% cases of lepromatous type of leprosy was mainly due to the direct bacterial invasion or its antigenic products, while in 75.56% cases of non-lepromatous type of leprosy it was due to the facial and trigeminal nerve involvement (Table IV). The commonest causes of corneal involvement were corneal anaesthesia (42.34%) and lagophthalmos (27.74%). The over-all incidence of blindness due to leprosy in this study was 4.52%; and 55.6% of these cases were due to corneal lesions.

Table IV. Causes of corneal involvement.

Cause of involvement	Number (percentage) of cases among		
	Lepromatous leprosy	Non-lepromatous leprosy	Total
1. Due to facial and trigeminal nerve involvement	6(21.43)	68(75.56)	74(62.71)
2. Due to direct bacterial invasion or its antigenic products	15(53.57)	1(1.11)	16(13.56)
3. Due to secondary infections	7(25.00)	21(23.33)	28(23.73)
Total	28(100.00)	90(100.00)	118(100.00)

Comments

Leprosy may involve the seventh cranial nerve resulting in an inability to close the eyelids properly. Corneal anaesthesia results from leprotic neuropathy of the fifth cranial nerve. Anaesthesia of the cornea and conjunctiva aggravated by exposure due to lagophthalmos and ectropion frequently lead to ulceration or exposure keratitis. Interstitial and punctate keratitis are known to be pathognomonic of leprosy.⁵ In this study, the incidence of corneal involvement in leprosy cases was 47.7%. The incidence of keratitis reported by other workers has been 36.7%,⁶ 41.7%,⁷ 48%,⁸ 50%⁹ and 63.1%.¹⁰

About 60% of cases with ocular involvement were taking anti-leprosy treatment irregularly and 16% of cases were taking no treatment at all. The incidence of ocular involvement has been reported to be higher in leprosy patients taking irregular and inadequate antileprosy treatment.⁸⁻¹⁰

The major causes leading to involvement of of the cornea in leprosy patients were corneal anaesthesia, lagophthalmos, ectropion, entropion and trichiasis, which eventually lead to the blindness. The total blindness in this study was 4.52% and corneal blindness accounted for 2.51%.

Analysis of the ocular complications in leprosy shows that the disease almost exclusively affects the anterior segment and this implies that many of these (especially) corneal complications

are amenable to modern therapy and are thus preventable.

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