

## OCULAR MANIFESTATIONS IN LEPROSY

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### ABSTRACT

Leprosy is a chronic granulomatous disease caused by mycobacterium leprae. The aim of the present study is to establish incidence of ocular manifestations in Leprosy. It is found that these manifestations are directly proportional to the duration of leprosy. In the present study different types of Leprosy are compared and the results are discussed.

**Keywords:** *Leprosy, Ocular Manifestations*

### INTRODUCTION

Choyce (1959) reported about the diagnosis and management of ocular leprosy. According to him eyes can be affected by 3 ways.

1. As a complication due to involvement of VII and occasionally V nerve
2. Direct invasion of eye ball by large number of acid fast bacilli as in lepromatous leprosy.
3. By participation in generalized reactive phase

Albert (1973) has studied 51 cases of biopsy proved leprosy in South Vietnam to know the ocular involvement. Cornea is mainly involved in 31 patients other common findings are VII nerve palsy, episcleritis, loss of eye brows and eye lashes, hypoesthesia of cornea. In his study various types of corneal lesions found are – chalky white spots (subepithelial opacities), punctuate keratopathy, lepromatous nodules, adherent leukomas, Bullous keratopathy, interstitial keratitis etc., Iris pearls were seen in six (6) patients which was a very important observations as it is earliest indicator of uveal involvement. Five patients were blind. Lamba and Santoshkumar (1984) have studied 325 patients of leprosy. In their study 87.3% showed eye involvement and the prevalence of potential sight threatening lesions are only 33.62% which are as follows:

**Table A**

Lesions	Percentage
Lagophthalmos	12.9%
Corneal anaesthesia	23.2%
Keratitis and sequale	7.4%
Iridocyclitis and sequale	14.6%

Loss of eye brows and eye lashes, madarosis, pterygium, conjunctivitis, cataract, was found in many patients. But was only of academic interest. According to them stress should be laid on diagnosis of sight threatening lesions (STL) and their management. Their classification of ocular disabilities in leprosy is as follows:

Radhakrishnan and Sathia (1980) have surveyed 320 inmates of leprosy begger's colony to find out incidence of blindness in leprosy. In their series 14% of eyes were blind and major causes of blindness were due to exposure keratitis of lagophthalmos, leucoma and various forms of keratitis, iridocyclitis, Sclerosing keratitis.

Gnanadoss and Rajendran (1980) reported that, of the 250 cases of leprosy, eye involvement amounted to 59.2%. Cornea was most frequently involved by various types of lesions like exposure keratitis, corneal ulcer, superficial keratitis, Lepromatous pannus, leproma, bullous keratopathy, interstitial keratitis,

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corneal scar in order of frequency, excluding lagophthalmos, most of the lesions were seen in lepromatous leprosy patients of long duration.

**Table B**

Grade	Sign.	Visual acuity
Grade-1 (Mild)	Alopecia of eye brows, madarosis or conjunctivitis	6/6 to 6/9 (denotes no visual damage)
Grade-2 (Moderate)	Lagophthalmos keratitis ulcer cornea, episcleritis, early secondary glaucoma, leucoma	6/12 to 6/60 (denotes onset of visual damage)
Grade-3 (Severe)	Advanced stage of uveitis, secondary glaucoma, total corneal opacity, phthisis bulbi, etc.,	Total blindness

In the series of Emiru (1970) of the 890 patients with leprosy, eye involvement is found in 21.2%. Again in his series common lesions found are loss of eye brows, eye lashes and madarosis. These are followed by lagophthalmos, chronic iridocyclitis, ectropion. Iris pearls were found in 1 case.

Acharya (1982) surveyed 7258 patients suffering from iridocyclitis during the period 1968 to 1981 of these 715 cases belonged to leprosy. In his series 547 cases belonged to chronic iridocyclitis group while 168 cases belonged to acute iridocyclitis group. Inference of their study was as follows.

Early sympathetic innervation hypersensitivity. Such patients also revealed a significantly low power of accommodation ( $p < 0.05$ ) in the 20 to 40 age group. In series Sexana and Dwivedi (1979) ocular adenexa are found to be most commonly involved.

Balakrishnan (1966) reported that superficial punctuate keratitis is a common lesion along with other eye lesions and their incidence was proportional to duration of leprosy.

## MATERIALS AND METHODS

The aim of present study is to establish the incidence of ocular manifestations in leprosy. The study is carried out by surveying.

1. Out patients attending Ophthalmic Department, K.B.N. General Hospital, Gulbarga.
2. In patients of K.B.N. General Hospital, Gulbarga.
3. Patients attending the leprosy centre (NLCC) Gulbarga
4. The inhabitants of leprosy colony, Gulbarga.

During this period a total number of 410 leprosy patients were surveyed for the evidence of ocular manifestations in leprosy. Among these there are 340 male patients and 70 female patients.

Individual patients are examined in good day light for evidence of skin lesions, nerve lesions and their destructive effects are other parts of body like E.N.T. system, extremities, face, sensory and motor systems.

The disease is classified clinically into three main types namely, lepromatous leprosy, tuberculoid leprosy and borderline leprosy.

A detailed ophthalmological examination is carried out to assess the ocular involvement. Total or partial VII nerve palsy are detected by asking the patient to close eyes and show the teeth. V-nerve involvement is tested by touching with cotton wisp in all the quadrants of cornea of both the eyes.

A focusing torch is used for general examination of the eye and to note the papillary reaction. For detailed examination monocular loupe (10 x) is used to know the details of corneal topography, iris, anterior chamber and lens. Corneal and conjunctival sensation is tested by wisp of cotton wool drawn across conjunctiva and cornea. Fluorescein strips are routinely applied to know any earliest changes of corneal epithelial breakdown. Slit lamp examination is done to know the finer details of cornea, anterior chamber, iris, pupils and lens.

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After noting the details of anterior segment pathology, homatropine drops were instilled in each case to know whether the pupils are satisfactorily dilating or not. If posterior synechiae were present, their locations and extents are recorded.

After full pupillary dilatation, fundus examination is carried out with the help of direct Ophthalmoscope and is explored as much as possible to know any posterior segment involvement.

Visual acuity and pinhole improvement is noted in every case. Patients with vision reduced to counting finger, less than one metre and no pinhole improvement were recorded as blind. Ocular tension is noted in every case digitally, a followed by Schiotz tonometry.

Patency of lacrimal passages is tested by applying digital pressure over lacrimal sac area for evidence of regurgitation and this was confirmed by lacrimal syringing. A note of consistency of the regurgitated material is made.

Ocular motility is tested in each case, in all the cardinal directions of gaze to know any extra ocular muscle involvement.

The type of leprosy is established by clinical examination. Bacteriological examination is done by the slit skin smear technique. Routinely skin smears are taken from ear lobule and other active skin lesions. The smears are stained by Ziel Neelson's method to know for the presence of lepra bacilli.

Out of the 410 patients screened, 100 cases showed one or the other form of ocular involvement by leprosy, the details of which are mentioned in the chart.

## RESULTS AND DISCUSSION

The aim of present study is to establish the incidence of ocular manifestations in leprosy. The study is carried out by surveying the leprosy patients attending Ophthalmic Department attending K.B.N. General Hospital, Gulbarga, patients attending the leprosy centre (NLCC) Gulbarga and inhabitants of leprosy colony, Gulbarga. A total number of 410 leprosy patients were surveyed, out of these 100 patients were known to have one or the other ocular manifestations of the disease.

Out of the 410 leprosy patients surveyed 340 were male patients accounting for 82.5% and 70 were female patients accounting for 17.5% as shown in Table.1.

**Table 1**

Total no. of leprosy patients examined	No. of male patients	Percentage of male patients	No. of female patients	Percentage of female patients
410	340	82.5%	70	17.5%

Therefore in the present study, leprosy is more prevalent amongst the male patients than the female patients.

**Table 2: Sex Incidence of ocular involvement among 100 case**

Sex	No. of leprosy patients	No. of patients with ocular lesion	Percentage
Male	340	75	22%
Female	70	25	33%

From the Table-2 it is evident that the overall percentage incidence of eye involvement is slightly more in females than the males.

**Table 3: Ocular Lesions by type of leprosy in 100 cases**

Type of leprosy	No. of cases with ocular lesion	Percentage
1. Lepromatous leprosy	58	58%
2. Tuberculoid leprosy	30	30%
3. Border line leprosy	12	12%

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It is observed from Table-3 that ocular involvement is more common in lepromatous leprosy accounting for 58% of cases. This is followed by tuberculoid leprosy accounting for 30% of cases, and lastly borderline leprosy accounting for 12% of cases.

In the present study, most of the ocular lesions due to leprosy are not found singly but usually 2-3 lesion are encountered at-a-time. Most of cases of lepromatous leprosy has loss of eyebrows and eyelashes. In tuberculoid leprosy common lesion noticed is lagophthalmos followed by lagophthalmos with exposure keratitis, corneal leucomas and neurotrophic keratitis, etc. In borderline leprosy cases, common lesions noticed are hypoesthesia of cornea, lagophthalmos, neurotrophic keratitis.

It is observed that leprosy is known to cause more eye involvement than any other bacterial disease. Some of these ocular lesions are only matter of academic interest which amount to only disfigurement and discomfort, while other lesions may lead to blindness if they are not identified early and treated for the same with best possible antileprosy treatment. Lepromatous leprosy is found to be most serious form of leprosy, causing more ocular lesions and blindness. It is also observed, longer duration of leprosy, more are the chances of ocular involvement. Tuberculoid leprosy is not a blinding disease, usually results in lagophthalmos, if un-checked and un-treated early, it may eventually lead to exposure keratitis.

Therefore it is essential that every leprosy patient should be subjected to detailed ophthalmological examination at every 3 monthly intervals, even if they do not have any eye lesions.

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