

Eye Signs in Leprosy

Hemkala L Trivedi*, Ramesh Venkatesh**

Introduction

Leprosy is common in India and hence it is essential for the general practitioners and dermatologists to be aware of eye signs of leprosy for preventing blindness.

- It is a chronic infectious disease caused by Myco. Leprae.
- The word '**leper**' comes from a Greek word meaning scaly
- Seen mostly in tropics and sub tropics
- Atleast 25% cases show ocular involvement
- 2 main types have been identified clinically and pathologically:
 - Tuberculoid leprosy (TT)
 - Lepromatous leprosy (LL)

Pathology

Tuberculoid v/s Lepromatous

- TT
 - Few bacilli are present
 - Lepromin test positive
 - Skin shows epitheloid cells, lymphocytes, histiocytes, Langhans' giant cells
 - The nerve fibres in the area affected degenerate and disappear
- LL
 - Numerous bacilli are seen
 - Lepromin test negative
 - Skin shows chronic, highly

vascularised granulation tissue, containing large numbers of bacilli and inflammatory cells called foam cells

– Nerve fibres are affected, but to a lesser extent

Symptoms and signs

Tuberculoid type

- Patches or macules are found on skin, particularly on face, lateral aspect of the arms & legs, buttocks and scapula
- Lesions show hypopigmentation, loss of hair, have a well defined edge
- Few in number but large in size, > 10 cm
- In the lids, there is loss of eyebrows and eyelashes
- Surface is dry and scaly, with loss of sensation to fine touch and heat
- The nerves are thickened especially, the ulnar nerve. Other nerves which are affected are median n, lateral popliteal n, posterior tibial n, facial n especially the ophthalmic division and greater auricular n (Fig. 1).



Fig. 1

*Associate Professor, **Resident, Department of Ophthalmology, BYL Nair Charitable Hospital.

Lepromatous leprosy

- Macules and patches are diffusely scattered over the skin
- Numerous in number but small in size
- Not well marked and fade imperceptibly into the surrounding skin
- Surface has a shiny greasy appearance
- No loss of anaesthesia
- The lids are often involved and loss of eyebrows and lashes is common.
- The skin around the face is commonly thickened termed as 'Leonine facies' (Fig. 2).

Eye signs

- The eye signs are very common with the lepromatous type of leprosy; although some findings are seen with the tuberculoid type as well

Grading of Eye signs

The lesions have been graded depending upon the severity as well as the chronological sequence to facilitate a proper assessment and management.

- Grade-I: Insensitivity of cornea is sight threatening lesions (STL) but not very severe in itself. Long standing neglect can render it serious.
- Grade-II: Lagophthalmos by itself is not



Fig. 2

serious but due to the exposure of cornea is capable of producing exposure keratitis. However this causes corneal lesions in much less time than Grade I lesions and hence placed in a higher grade.

- Grade-III: Lesions like Keratitis, Iritis, Scleritis produce visual impairment by themselves and are understandably more serious than Grade II lesions.
- Grade IV of proposed classification clearly signifies that the disease process is progressive. It may result in blurring of vision on account of perforation of cornea due to exposure or the chronicity of plastic iridocyclitis may result in the development of sequelae and secondary glaucoma which induces a progressive blurring of vision.
- Grade-V: Signifies a burnt out disease in eyes with development of unilateral or bilateral phthisis bulbi (blind eye).

Cornea in leprosy

- Shows features of exposure keratitis in Tuberculoid leprosy due to the paralysis of one or both orbicularis muscles as the facial nerve is affected in the pathological process
- Superficial punctate keratitis is seen frequently in lepromatous leprosy.
- Grey spots of infiltration are also seen in the corneal epithelium, seen in the upper outer quadrant
- The 'minute grains of chalk' appearance in the cornea is often pathognomonic of leprosy
- A very chronic interstitial keratitis may develop in the proximity of an episcleral nodule which denotes a severe involvement of the eye
- Corneal sensations are lost in leprosy
- Thickening of the corneal nerves have

been seen on slit lamp examination (Fig. 3).

Lids and conjunctiva in leprosy

- Chronic conjunctivitis is seen with LL
- Facial n paralysis leading to the paralysis of one or both orbicularis muscles leading to severe lagophthalmos and secondary conjunctival complications
- Madarosis (loss of eyelash)
- Trichiasis (inward turning of eyelash)
- Tylosis (thickening of eyelid skin) (Fig. 4).

Episclera and sclera in Leprosy

- Episcleritis is seen with lepromatous type of leprosy
- Small episcleral nodules 2-3 mm in diameter occur at the limbus particularly at the upper outer quadrant
- They are very chronic but show signs of activity, becoming hyperaemic and slightly tender for several months
- Some cases of scleritis have also been noted with LL

Iris in leprosy

- The major cause of blindness in leprosy is iridocyclitis
- Iritis in leprosy is of the chronic nature

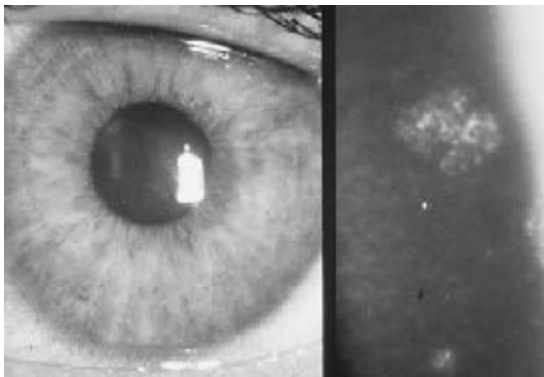


Fig. 3

- A pathognomonic sign in lepromatous leprosy is the presence at the pupillary margin of small glistening 'iris pearls' resembling a necklace
- The pearls slowly enlarge and coalesce, become pedunculated and drop into the AC, from which they eventually disappear
- Eventually iris becomes atrophic and the pupil miosed
- Acute iridocyclitis is caused by the immune complex deposition in the uvea associated with systemic symptoms such as fever and swelling of skin lesions
- Intraocular inflammation may be precipitated by initiation or withdrawal of systemic antilepromatous therapy
- Rx in acute lepromatous iridocyclitis is topical steroids
- A large granuloma known as the leproma may occur in the anterior chamber in the periphery
- Carries a grave prognosis (Fig. 5).



Fig. 4



Fig. 5

Other features in leprosy

- Small nodules may be seen in the periphery in the anterior choroid occasionally on fundus examination leading to lepromatous choroiditis.
- These are often missed as the pupil do not get dilated due to iritis and synechie.
- Lacrimal glands are occasionally enlarged leading to lepromatous dacryoadenitis
- Secondary cataract and glaucoma are seen with leprosy
- Dapsone can lead to Steven Johnson Syndrome causing bullous conjunctivitis, symblepharon and dry eye.

Diagnosis of Ocular Leprosy

- The 'grains of chalk' appearance of superficial punctate keratitis and 'iris pearls' are pathognomonic of leprosy
- The leprotic nature of a lagophthalmos, episcleritis, keratitis or iritis will be apparent if all cases are inspected carefully for the general signs of the disease

Treatment of Systemic Leprosy

- Treatment of leprosy consists of 4 major drugs
 - Dapsone
 - Rifampicin
 - Clofazamine
 - Ethionamide
 - Minocycline

The treatment of systemic leprosy does not prevent or treat the ocular features of leprosy

Treatment of Ocular Leprosy

- Lagophthalmos is treated with lubricants and tarsoraphy or orbicularis sling procedures as operative options. If not treated early exposure keratitis can lead to corneal opacity and loss of vision.
- In c/o of SPK, the eye should be atropinised with 1% Atropine TID.
- In c/o of iridocyclitis, the eye is atropinised with 1% Atropine TID and local steroid drops at hourly intervals.
- Complicated cataract may need surgery with steroid cover and separation of posterior synechiae.
- Secondary glaucoma needs medical and surgical treatment.
- Keratoplasty may be needed in patients with central corneal opacity with normal posterior segment.

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