Commentary: Ocular lesions in leprosy – Should we forget?

In the current issue of Indian Journal of Ophthalmology, authors have described a classic case of Hansen's disease with ocular involvement.[1]

Hansen's disease is an ancient disease caused by *Mycobacterium leprae*. It affects not only the skin and peripheral nerves but also the eyes.[2] The first known written mention of the disease is dated to 600 BC.[3] In India, the current prevalence rate of leprosy is 0.57/10,000 population. Leprosy had comparatively higher rates of ocular complications among all systemic diseases but has changed over the past three decades after the advent of multidrug therapy (MDT). In 1981, a World Health Organization (WHO) study group recommended multidrug therapy (dapsone, rifampicin, and clofazimine), the first really effective drug combination that kills the pathogen and is curative. The widespread use of multidrug treatment had a significant impact on the disease burden and more than 14 million leprosy patients have since been cured.[3] However, new leprosy cases are still being reported from various parts of the world by the WHO. In 2020, 127,558 new leprosy cases were reported from 139 countries.[4] Although leprosy is a chronic disease and usually takes years for the destruction of various tissues, type 1 and type 2 hypersensitivity reactions encountered during the course can cause serious damage within a very short period.

Ocular involvement has been estimated to occur in up to 50%–85% of patients with leprosy.[5] Ocular manifestations are present at the beginning, during, and even after complete treatment of leprosy by MDT. The ocular manifestations occur as a consequence of nerve damage in paucibacillary leprosy or infiltration of the bacilli in lepromatous leprosy. Ocular leprosy is rarely diagnosed as patients may hide their systemic deformities. Ophthalmologists can easily miss the diagnosis unless they are thoroughly familiar with subtle ocular signs. Ocular manifestation can start from the adnexa and very rare cases involve the retina. Lagophthalmos occurs due to the involvement of the zygomatic and temporal branches of the facial nerve by the bacilli and is more commonly seen in patients with paucibacillary leprosy than in multibacillary

leprosy. The damage of the optic nerve can cause loss of vision in paucibacillary and lepromatous leprosy. Other ocular complications are cataract and glaucoma.[5]

Corneal involvement in the form of exposure keratitis, superficial punctate keratitis, and interstitial keratitis can occur. Corneal scarring is common in patients with leprosy. Corneal scarring is the second most common cause of blindness in leprosy after cataract.[6] Episcleritis, scleritis, and uveitis in leprosy are most commonly seen in patients with multibacillary disease. Iridocyclitis is a sight-threatening clinical condition and can occur in 7%–24% of patients with leprosy.[7] Uveitis in leprosy primarily involves the iris and ciliary body but spares the choroid. Rare presentation includes hypopyon[8] and anterior chamber iris granuloma.[9] The diagnosis of leprosy is clinical, with characteristic skin lesion with definite sensory loss with or without thickened nerves and confirmed by a positive skin smear. The gold standard test remains the identification of acid-fast bacilli in skin smear with Fite–Faraco modification of the carbol-fuchsin stain. Recently, a polymerase chain reaction has been developed that has high sensitivity in multibacillary disease.[10]

The major goals of treatment of ocular leprosy are early detection of ocular signs, appropriate systemic and ocular treatment, and adequate care for the complications. Acute anterior uveitis owing to leprosy can be treated using cycloplegics and topical steroids. Lagophthalmos, cataract, and glaucoma are treated surgically. An intraocular lens can be inserted after cataract surgery. Apart from the improved optical results, it can avoid the problem of wearing heavy aphakic spectacles when the bridge of the nose has collapsed in many cases of leprosy, and it can also resolve the problem of handling spectacles with deformed hands.

Major advances have been made in recent years in ocular lesions in leprosy. Support algorithms have been developed to prognosticate ocular complications. Experimental models of leprosy have been developed, which will help better understanding of the disease. The genome of M. leprae has been sequenced, and it is likely to provide valuable information about its mechanisms of pathogenicity in near future.[11]

Signs of ocular leprosy can be subtle and can be missed if one is not aware. This article with a classic example of systemic and ocular signs can be a good reminder for diagnosis of ocular leprosy.

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