About eye complications in leprosy

People affected by leprosy may have eye complications **directly related to leprosy**. They may also have eye diseases like **refractive errors** and **age-related cataracts** which are not directly due to leprosy.
The major causes of blindness **directly due to leprosy** are:

- **Lagophthalmos** (with or without **corneal hypoesthesia**) and its consequences- **exposure keratitis**, **corneal ulcer**, **corneal scar**, and **corneal perforation**.
- **Uveitis/iridocyclitis** and its consequences- **secondary glaucoma** and **secondary cataract**.

Patients with these sight threatening complications should be referred to a doctor without delay.

Lagophthalmos is the inability of the eyelids to fully close. It is due to leprosy involvement of the facial nerve and the most common eye complication seen today. It is often associated with **facial/ periorbital patches in Type 1 reaction**. Untreated lagophthalmos leads to visual loss from (a) **exposure keratitis** - breakdown of corneal epithelium due to longstanding corneal exposure and dryness, and (b) **corneal ulcer** - a defect in the corneal epithelium with infection of the underlying tissue. A corneal ulcer heals with formation of a **corneal scar**. A **corneal perforation** is a full thickness penetration of all the layers of the cornea by a corneal injury or ulcer. **Bell's phenomenon** in lagophthalmos is a normal protective reflex present in about 75% of the population; the eyes roll upward and outward during attempted blinking. **Ectropion** (outward turning) of the lower lid is seen in longstanding cases of lagophthalmos. The surgical procedures commonly used for lagophthalmos due to leprosy are **Temporalis Muscle Tendon Transfer** (TMT) and **Tarsorrhaphy.**

Corneal hypoesthesia is reduced sensation in the cornea due to leprosy involvement of the trigeminal nerve. Loss of the stimulus to blink results in dryness and corneal epithelial breakdown. Loss of protective sensation means a corneal injury or **foreign body** goes unnoticed leading to a corneal ulcer.

Uveitis (iridocyclitis) is the inflammation of iris and ciliary body commonly seen in MB patients. The signs of uveitis are **circumcorneal congestion** (redness around the cornea), **synechiae** (adhesions between iris and lens or iris and peripheral cornea) , **hypopyon** (whitish exudate in the lower portion of the anterior chamber), **keratic precipitates** (inflammatory cells on the corneal endothelium) , **pinpoint pupil** (small, miotic pupil) , **iris atrophy** (loss of normal iris pattern) , **iris holes**, **iris pearls or nodules** (nodules on the iris surface or within the iris tissue). Acute iridocyclitis has serious sight threatening consequences: **Secondary glaucoma** due to synechiae blocking the free flow of the aqueous in the eye, raising the intraocular pressure to dangerously high levels that damage the optic nerve. **Secondary cataract** due to inflammation, synechiae, and impaired aqueous production by the atrophied ciliary body. Additionally, steroids required for the management of uveitis can cause **steroid induced glaucoma** and **steroid induced cataract**. **Scleritis** is inflammation of the sclera and can occur during ENL reactions. **Episcleritis** is a milder inflammation of the superficial sclera.

Limbal leproma is a rare condition seen in advanced, untreated LL. It appears as a smooth, painless nodule at the limbus with mild inflammation of the adjacent cornea. Limbal lepromas disappear with MDT. **Madarosis** loss of eyebrows (superciliary) and eyelashes (ciliary) are seen in advanced, untreated LL. Chronic **dacryocystitis**, usually in the form of a **mucocele** is a painless distention of the lacrimal sac due to M. leprae infiltration of the nasal mucosa and obstruction of the nasolacrimal duct.