Corneal ulcer

This is an infective or inflammatory disease of the cornea with loss of the epithelium and stromal involvement. Usually a degree of trauma has lead to a breach of the epithelium and allowed organisms to invade the corneal stroma. Bacteria, fungi, protozoa, and viruses can be the offending organisms. Also, hypersensitivity reactions to eyelid bacteria can cause a milder peripheral inflammatory ulcer (marginal keratitis).

Patients present with a painful, pussy, watery red eye with variable loss of vision. There is a short history of increasing symptoms, usually in a contact lens wearer, following trauma or foreign body. Poor contact lens hygiene, cleaning with tap water, and over-wear are risk factors for corneal ulcer. Vision is reduced and there is intense photophobia. Lid swelling and conjunctival injection and oedema are noted. An opaque lesion on the cornea, which stains with fluorescein is invariably present, and a fluid level of pus (hypopyon) may be seen in the anterior chamber. Management is with intensive topical anti-microbial treatment (up to half-hourly as an in-patient) guided by the clinical picture and microbiology. Atropine 1% will stop iris adhesions and relieve pain. Ciprofloxacin 750 mg twice daily has good ocular penetration and is used in severe bacterial keratitis. Systemic antiviral and antifungals can be used as appropriate.

Immediate referral to ophthalmology is required for corneal scraping (microscopy and culture) before treatment is commenced. Any opacity on the cornea, in a painful red eye, should be considered an ulcer until proven otherwise.

A dendritic ulcer is a specific condition caused by the herpes simplex virus. An active cold sore history may be present but is not required for diagnosis. The eye is watery and photophobic. A dendrite has a linear branching shape, which stains well with fluorescein. Refer to ophthalmology for treatment with acyclovir 3% ointment five times daily with outpatient follow-up. Herpetic disease can be recurrent and involve central cornea as a disciform keratitis.

Acanthamoeba keratitis is a protozoal infection of the cornea. It is a rare but severe complication of contact lens wear caused by washing and storing lenses in water or swimming and bathing with contact lenses in the eye. The infection is extremely difficult to diagnose and treat. Therefore the disease is usually tackled late and runs a long course with severe inflammation.

Corneal ulcers can be devastating to vision as a result of scarring, irregular astigmatism, and, rarely, endophthalmitis or perforation following corneal melting. Central ulcers caused by fungi and protozoa have the worst prognosis.