CORNEAL ABRASIONS

One of the most common injuries to the eye is a scratch (abrasion). Removing surface layers of the cornea exposes nerve endings, and is very painful. Excessive tearing, light sensitivity, blurred vision, redness, and a feeling of having something in the eye are common symptoms.

Small abrasions usually heal rapidly; larger ones may take a few days. Permanent loss of vision is rare, although vision may be blurred for several weeks.

Treatment consists of covering the eye with a tight eye patch, to prevent the eyelid from moving and causing further irritation. An antibiotic ointment is used to reduce the chance of infection, and a strong dilating eye drops is used to reduce discomfort. Daily examination is required until the surface layers of the cornea have healed.

Abrasions may recur spontaneously, if the surface layer does not heal properly or attach correctly to the underlying tissue. Recurrent abrasions cause patients to experience sharp pain upon awakening. Treatment may involve patching the eye, and/or using strong salt solution eye drops, ointments, lubricants, and contact lenses as bandages.

CORNEAL ULCER

Corneal ulcer is a serious ocular infection of the clear cap of the eye (cornea). It occurs when the natural defenses against infection of the eye are lost. Trauma, aging, tear film abnormalities, chronic infection or irritation, contact lens problems, alcohol abuse or immunosuppressive treatment set the stage for corneal ulcer.

Most ulcers are assumed to be bacterial in origin although viruses, fungi and acanthamoeba (parasites) cause corneal ulceration. Laboratory studies are required to determine the reason.

Symptoms include moderate to severe pain, redness, light sensitivity, mucus discharge and decreased vision.

Treatment is dependent on the severity of the infection and the cause. If the ulcer is sight threatening the patient may be hospitalized. Antibiotics (drops, ointments and/or pills) are used to reduce the infection. Dilating drops and oral pain medications (e.g.,aspirin) improve comfort.

Careful daily monitoring is required until the ulcer resolves.

DRY EYE SYNDROME

The tear film covering the front surface of the eye is composed of three layers: an outer oily layer to reduce evaporation; a middle water layer, and an inner mucous layer, which reduces the surface tension and allows the tear film to spread evenly over the surface of the eye. Dryness of the eye can be caused by a deficiency in any one of the three layers.

One of the functions of the tear layer is to keep the surface of the eye moist, preventing damage caused by dryness. Dryness, or dehydration, causes a burning or scratchy feeling, usually in both eyes. This is typically aggravated by wind, air conditioning, heat, or eye strain. People with dry eyes occasionally complain of excess tearing, caused by the burning and itching.

Collagen vascular diseases (such as rheumatoid arthritis and Sjogren's syndrome), drugs (such as oral contraceptives, anti-histamines and anti-depressants), vitamin A deficiency, and hormone changes are all possible causes of dry eyes. Treatment is directed first at identifying the specific causes involved. In mild and moderate cases of dry eye, lubricating drugs and ointments generally provide relief. More severe cases may require the use of silicone plugs or laser cautery, to block the tear drainage canals.

KERATOCONUS

Keratoconus is a slowly progressing disease that leads to a bulging forward and thinning of the cornea of both eyes. The cornea is the clear surface of the eye, which is most responsible for focusing light in the eye. As the cornea bulges forward and becomes cone shaped, vision blurs.

In the early stages of keratoconus, eye glasses correct the blurred vision. As the condition progresses, rigid gas permeable lenses become the treatment of choice, and require frequent changes. Corneal transplants are needed occasionally, when contact lenses cannot be tolerated, or when corneal scarring develops. Prognosis following corneal transplantation is excellent.

RECURRENT CORNEAL EROSION

The cornea is the transparent front structure of the eye. It is made up of five distinct layers of tissue, the surface layer being the epithelium. Defects in the attachment of the epithelium to the deeper layers cause the epithelium to be easily separated and pulled off. This erosion results in continuous pain until it heals, as the cornea is very well supplied with nerves. Defects in the attachment of the epithelium can be hereditary or caused by trauma. Patients who experience recurrent corneal erosion usually feel a sharp pain upon awakening and a sensation of having something in the eye. In the more severe cases of erosion, the eye becomes red, irritated, and very light sensitive.

Treatment is aimed at promoting healing and better attachment of the epithelium. Typically, a pressure bandage and bed rest for 24 hours are prescribed. Once the cornea has healed, it is evaluated to determine the best course of action. Lubricating drops, ointments, mechanical removal of damaged tissue, and less commonly scarring of the cornea, are used when indicated.

ULTRAVIOLET KERATOPATHY

The cornea is the clear convex structure at the front of the eye. It serves as the primary light focusing structure and as a protective membrane. There are many nerves sensitive to pain in the cornea. Any disruption of the corneal tissue leads to pain, which continues until the disruption has healed.

Ultraviolet light from using a sun lamp or doing welding without protective eye wear is the most common cause of ultraviolet keratopathy. Symptoms may not appear for several hours after the eye has been exposed and “sunburned.” Moderate to severe pain, a scratching sensation, extreme light sensitivity, blurred vision, and tearing are experienced. Symptoms decrease as the surface heals.