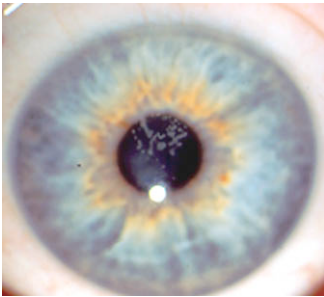

RECURRENT EROSIONS

Recurrent erosions are a common problem. You feel a sudden sharp pain or tearing sensation, often while dreaming or awakening. The pain may subside quickly, or there may be persistent pain, light sensitivity, watering, or blurred vision, lasting for a few days. These episodes may occur almost daily, or once or twice a year.

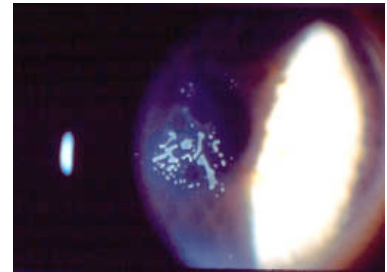
Many cases are related to an injury, and therefore occur only in the injured eye. However, recurrent erosions often occur spontaneously, and can affect both eyes.

They reflect an abnormality of the adhesion of the corneal skin cells. The cornea is the clear “window” covering the iris and pupil. Skin (epithelial) cells cover its surface, and normally adhere by way of a natural “glue” and “anchors”. An abnormality of the adhesion of the skin cells causes them to be loosely attached. It only takes mild stress, such as opening your eyes in the morning, rapid eye movements during sleep, or eye rubbing, to disturb them. The cells may just shift on the surface or come off in one area.

This is like having a corneal abrasion. Until the surface heals over your vision may be blurred, and you can have light sensitivity, pain and tearing. After some episodes recovery may be prolonged, because the cells are not healing properly. In nearly all cases the symptoms resolve and the vision returns. However, another episode can be a day or a week away.



When the epithelial cells are not adhering properly cysts may be seen within the corneal surface layer. (Shown in close up on the right)



RISKS

The erosion episodes can prevent you from carrying out your normal daily activities for hours to days. For many, the hardest part is that they can't tell which days they are going to be able to function normally. There is also a small risk of infection or ulceration whenever an erosion occurs.

TREATMENT OF AN EROSION EPISODE

Many episodes heal quickly without treatment. Treatments can be used to relieve pain and promote healing. These can include:

- A non-steroidal anti-inflammatory agent, such as Acular or Voltaren, to relieve pain.
- Lubricating drops or ointment, such as artificial tears.
- An antibiotic drop to help prevent infection.
- Insertion of a bandage contact lens to promote healing and relieve discomfort.

- Removal of loose skin cells. This is a minor procedure, performed in the office. The loose cells are gently wiped off the corneal surface using a cotton-tipped swab or blunt instrument.
- Patching the eye closed.

TREATMENT TO PREVENT RECURRENCE

Once you have recovered from the current episode, treatment is directed at preventing further episodes. Since erosion episodes nearly always cause no permanent damage, treatment should be as conservative as possible. I generally recommend the simplest and least risky treatments first, and proceed to more involved treatments only as necessary.

LUBRICATION

In nearly all cases, I recommend first using lubrication: Instillation of a drop of a lubricating solution at least four times daily, and a lubricating ointment at bedtime. I find that Muro 128 (5%NaCl) drops are the most effective. These are hypertonic (have extra salt) so they sting a little when they are instilled. They are available in most pharmacies, without a prescription. If these cause excessive discomfort, you may use a non-prescription artificial tear solution such as: Tears Naturale II, Genteal, Refresh Tears, Refresh Plus, or Ocucoat.

Instill an ointment at bedtime. Muro 128 ointment appears to be the best. Place ¼” inside the lower lid. Again, this often stings a little. You can also use a lubricating eye ointment, such as Refresh PM, Hypotears Ointment, Lacrilube, or AKWA Tears Ointment.

If this treatment is working well, continue it for one month. Then stop the drops during the day, but continue the ointment at bedtime for another 2 months.

If attacks are continuing in spite of lubrication several treatments can be attempted next. All of these procedures entail a small risk of complications, particularly infection, inflammation, scarring or ulceration. However, each erosion episode also carries these risks.

TAPPING THE CORNEA WITH A NEEDLE

This is a method of improving adhesion of the skin cells. It is a technique of creating microscopic scars that help hold the skin cells in place. You can think of it as “spot-welding”. After anesthetizing the cornea with drops I will tap the affected area with a needle, creating many small superficial wounds. Although it sounds painful, there is no pain during the procedure. The skin cells do not have to be removed.

REMOVING THE ABNORMAL SKIN CELLS

Wiping away the abnormal skin cells and their natural glue may allow better healing. This is performed in the office, after instillation of anesthetic drops. The procedure does not hurt.

REMOVING THE ABNORMAL CELLS, FOLLOWED BY BURRING OF THE SURFACE

After instillation of anesthetic drops the abnormal skin cells are wiped from the surface of the eye. A rotating burr is then gently applied to the exposed corneal surface to remove a small amount of tissue. This can be performed in the office.

REMOVAL OF THE ABNORMAL CELLS, FOLLOWED BY LASER TREATMENT OF THE SURFACE

His procedure is performed in the laser center at the University of Pittsburgh, in Oakland. After the abnormal skin cells are wiped from the eye, an excimer laser is used to remove a microscopic layer of tissue from the exposed corneal surface.

BANDAGE CONTACT LENS

A soft contact lens without prescription power can be used as a bandage to protect the corneal skin cells. Wearing the lens helps the cornea heal and can reduce the incidence of erosion episodes. When used to prevent recurrences the lenses typically are worn for 3-4 months. The lens is left in the eye all the time – you do not have to remove it. However, we may replace lenses in the office monthly. If the lens falls out do not attempt to replace it.

RISKS OF THESE PROCEDURES

Any time that the skin cell layer on the surface of the eye is broken, such as after an erosion or one of these procedures, there is a small risk of infection, ulceration, or scarring. If severe, these can lead to a permanent reduction in vision. In the most severe cases corneal transplant surgery may be necessary, to remove the damaged cornea.

TREATMENT AFTER THESE PROCEDURES

IMMEDIATE

The amount of discomfort after the procedure varies widely. The discomfort begins after the anesthetic drop wears off, in about 15 minutes, and can continue for 2-3 days. Your vision will be blurry. It should begin to improve after 2-3 days.

- An anesthetic drop, such as tetracaine, can be used up to every hour during the first 24 hours after the procedure. However, it should not be used after 24 hours, since this can lead to permanent damage to the eye.
- Voltaren or Acular drops can be instilled up to 4 times daily to relieve pain. Try to avoid these after the first 48 hours, since they can delay healing.
- An antibiotic drop should be instilled four times daily until you are told to stop.
- Oral pain medication can be taken if necessary.
- If you have a bandage contact lens, do not handle it. If it falls out, do not attempt to replace it.

Contact my office if: the pain is not improving after the first 1-2 days, the vision markedly worsens, thick yellow pus is coming out of the eye, or you see a white spot in the cornea.

LONG-TERM

After the skin cells heal, resume the lubrication regimen discussed above. Contact my office if you have another erosion.

