

RETINAL DETACHMENT

(Torn Retina)

Retinal detachment is a serious condition that can lead to severe visual impairment or even total blindness in the affected eye. The retina normally lies smoothly and firmly against the inside of the back wall of the eyeball and functions much like the film in the back of a camera. Millions of light-sensitive retinal cells receive optical images, instantly "develop" them, and send them on to the brain to be seen.

If any part of the retina is lifted or pulled from its normal position, it is considered detached, and will cause some vision loss. The detachment will almost always progress, and vision loss will increase, until it is treated. Therefore, any new detachment is always considered an emergency.

Retinal detachment can occur at any age, but it is most common in midlife and later. It affects men more than women, and Caucasians more than Blacks. It is more likely to occur in people who are extremely nearsighted. Heredity may also play a part, since it tends to run in families.

What causes a retinal detachment?

Any tiny tears or holes in the retina can allow fluid to seep under the retina, separating it from the back of the wall of the eye. The tiny tears themselves are usually caused by aging changes of some of the tissues within the eye.

Most of the eye's interior is filled with vitreous, a gel-like substance that helps maintain its round shape. The vitreous contains millions of fine fibers that are normally attached to the retinal surface. As we age, the vitreous slowly shrinks away from the retina and may at some point be pulled free (this is called a vitreous detachment). Once in awhile, this pulling results in one or more tears or tiny holes in the retina. Then, the fluid from the vitreous compartment of the eye can leak through the hole(s) and get under the retina. Retinal tears may also result from a hard blow or injury to the eye, though this is rather rare.

Symptoms of a Retinal Tear

Because the retina is such a sensitive part of the visual system, anything that disturbs it will cause visual symptoms. When it tears, you are likely to have a sudden appearance of floaters—a shower of "cobwebs" in your field of vision—which may be accompanied by "flashes," a sensation of seeing a flashing bright light. Though it is normal to have a few floaters, and everyone has them, a sudden increase in their number and size is a warning that small amounts of blood and debris have suddenly appeared in the vitreous. The flashes are sensations from the retina as it is pulled or torn, or is rubbed by the loosened vitreous.

If a tear breaks a larger retinal blood vessel, the blood spilling into the vitreous can cause a massive increase in floaters or even total loss of vision in that eye. The floaters will usually decrease in a few weeks or months and vision will improve, as long as the retina does not detach.

Symptoms of a Retinal Detachment

Most retinal tears do not cause problems and are not especially dangerous. However, if fluid starts to leak through them, the retina will start to peel (like wallpaper) and the detachment process begins. At first, you may have no symptoms, especially if the detachment is off to the side. Later, a "curtain" of darkness will start moving in and block out vision from one direction (the position depends on the location of the detachment).

When the peeling process reaches the central zone of the retina (the macula), vision will suddenly and dramatically blur. As time goes on (which could be hours, days, or weeks), the curtain will continue to darken more and more of your vision, until you are left only able to see bright light.

Examination

A complete eye examination will be done after your pupils have been dilated (enlarged) with eye drops. The back of the eye will be examined with a special ophthalmoscope (worn on the doctor's head like a miner's light) and with a slit lamp (clinical microscope). Sometimes a gonioscope (a special type of contact lens with built-in mirrors) is placed on the eye so the retina can be closely visualized.

The ophthalmoscope shines a very bright light into your eye. The light will be uncomfortable, but it is absolutely necessary for a careful and accurate evaluation. Every retinal tear and hole must be found. A drawing will be made to identify their positions and the extent of the detachment. This drawing will later serve as a "map" during surgery for locating the precise areas needing

repair.

Treatment

For certain retinal tears or holes found before a detachment has developed, or, rarely, if the detachment is new and very small, treatment may consist only of laser or cryotherapy, and this will not require hospitalization.

Once a retinal detachment has occurred, however, all holes and tears that have allowed fluid to collect under the retina must be sealed. If a detachment is extensive, its repair requires major eye surgery. Whether you are hospitalized or not, and what type of anesthesia will be used, will depend on how complicated the detachment is.

One or a combination of procedures and appliances may be required. These are some common ones:

Cryotherapy: extremely cold probes applied to a small area outside of the eyeball overlying the retinal tears, to "freeze-burn" the tissue, seal the tears, and create an eventual scar that will "stick" the retina to that spot.

Lasers: High-energy light beams that burn the tissue and help seal tears and holes. This is usually used as a supplement to surgery. Despite a general impression to the contrary, a laser can only rarely be used alone, without surgery, to treat a detachment.

Silicone surgical explants: rubber-like spongy material or flexible strips sewn to the outside (scleral) surface of the eye to compress ("buckle") the eyeball over tears and detached areas and help bolster the retina (hence the term "scleral buckle").

Drainage: surgically draining the fluid from under the detached retina, to allow the retina to settle back down into its normal position. (Sometimes the fluid is not drained, but left to absorb on its own.)

Vitreous surgery: removing opaque debris and membranes from the inside of the eye and from the retinal surface.

Intraocular gas: injection of bubbles of air or special gasses into the eye to push or hold the retina in place; sometimes liquid silicone is used.

After Surgery

Medications: you will need to use various types of eye drops and/or ointments, possibly for several weeks.

Activities: Will be somewhat restricted, since it takes a few weeks for the retinal tears to become firmly "welded". Once recovery is complete, most patients can lead a completely normal life. If you plan to take part in a sport that exposes your eyes to injury, however, always wear polycarbonate protective goggles or a facemask. Direct blows to any eye can be harmful, but they are especially risky to one that was previously detached.

Regular examinations: There is some risk that the retina can detach again, and you are also at greater risk for a detachment to occur in the other eye/so it is important to have regular, annual examinations. (Regular examinations are also important if you have any condition that predisposes you to a retinal detachment, such as extreme myopia.) Preventive laser treatment or cryotherapy may be advised for tears found in either eye, though usually they are merely identified and watched.

Prognosis

With modern therapy, over 90% of detachments can be successfully treated and the retina reattached. However, the visual outcome is not always predictable. The best visual result (which can approach normal) will occur if treatment takes place before the critical, center part of the retina (the macula) has detached. If the macula has already detached when the repair is undertaken, the best vision you can expect is usually poor, about 20/200. Still, the side vision in that eye can be normal, so that eye will almost always be a useful one despite its lesser acuity. Even under the best of circumstances, and even after multiple attempts at repair, treatment sometimes fails and all vision may eventually be lost.