FROM THE PARISH NURSE….

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MACULAR DEGENERATION

Signs and Symptoms – Increasingly blurred central vision

Involutional macular degeneration is the most frequent cause of legal blindness in the United States and Great Britain. (The criteria for legal blindness may vary from state to state. A common standard is a vision of 20/200 or less in the better eye while using well-fitted glasses.) This disorder most often affects the elderly.

The macula, from the Latin meaning "spot," is located in the central portion of your retina. The macula is responsible for your central vision. In early stages of macular degeneration, small deposits form and blood vessels grow in the macular region between the retina and its supporting layer of choroid tissue. If these vessels leak plasma or blood, the retinal cells responsible for central vision are damaged. Eventually a scar may develop, producing considerable impairment of central vision.

Diagnosis

Early diagnosis of macular degeneration is vital to successful treatment. The disease usually develops gradually and painlessly. It typically affects both eyes, either simultaneously or one after the other.

A damaged or disease macula causes difficulty in reading small print and seeing distant objects such as street signs. Fortunately, side vision is retained, so that if you have the ailment, you can walk about and even cross streets unaided. If you notice any decrease in your central vision, see your ophthalmologist as soon as possible. Better yet, have your eyes examined once a year once you reach age 50.

Your physician can test for macular degeneration during a routine examination. He or she may perform a test known as fluorescein angiography to evaluate the blood vessel pattern in the eye and detect the presence of abnormal blood vessels. In this test a special dye is injected into a vein of the arm, and it then flows to the vessels of the eye. A series of photographs of the retina is then taken and the dye identifies any problems with the blood vessels.

Treatment

The only well-established treatment for macular degeneration is laser therapy to coagulate abnormal (leaking) blood vessels to prevent or slow further loss of vision. Such therapy is useful for a minority of persons during only the early stages of the disease.

Your ophthalmologist may ask you to use an Amsler grid to help prevent loss of vision from macular degeneration. By checking the pattern of the grid daily with each eye, subtle changes in your vision may be apparent. These changes may be due to fluid leaking from blood vessels. If changes occur, see your ophthalmologist without delay.

RETINAL DETACHMENT

Signs and Symptoms

- Sensation of flashing lights
- Many floaters in the eye
- Blurred vision
- Shadow over a portion of the field of vision

The retina is a thin, transparent membrane in the back portion of your eye. The retina contains the rods and cones that are sensitive to light. In addition, the retina contains the nerves that carry impulses from the rods and cones to the optic nerve, which, in turn, leads to the brain. The retina is essentially the film that processes the images projected by the cornea and lens.

Behind the retina is a layer of tiny blood vessels. This layer supplies oxygen and nutrients, which are essential for your eye to function properly.

Retinal detachment results if the retina separates from this layer of blood vessels.

Most cases of retinal detachment are associated with a tear or hole in the retina. This defect, which may be caused by trauma to the eye or by changes in the vitreous fluid of the eye due to aging, allows fluid from the vitreous to leak under the retina and lift it from the underlying layer. Occasionally a tumor or an inflammatory disorder affecting the back portion of the eye is responsible for detached retina.

Each year approximately 20,000 people in the United States suffer a retinal detachment. There are several risk factors. Nearsighted people are more prone to retinal detachment than others. The condition is more common among men than women, and it is more common among whites than among people of other races. The problem occasionally affects more than one member of the same family, so there may be a genetic factor.

Diagnosis

Retinal detachment is a medical emergency requiring immediate attention. The condition is painless. However, symptoms almost always appear before the retina detaches. As the vitreous shrinks and sags, it may tug on the retina, producing the sensation of flashing lights. If the tugging is strong enough and causes a retinal tear, small blood vessels may be damaged, allowing blood to seep into the vitreous and causing hazy vision and the sudden appearance of new floaters (dark or light spots or specks or lines in the field of vision; see Spots and Floaters).

Not all tears or holes in the retina progress to a retinal detachment. If a detachment does occur, however, the portion of your visual field corresponding to the detached part of the retina becomes lost. You will perceive this vision loss as a shadow or curtain moving over your eye.

If you have any of these symptoms, see your ophthalmologist immediately or go to the emergency room of your local hospital. The physician will examine your eye and may use ultrasonography to get a precise picture of the condition of your eye.

Treatment

Surgery is the only effective therapy for retinal detachment. If a tear or hole is treated before detachment develops or if a retinal detachment is treated before the macula (the portion of the retina responsible for central vision) has detached, your vision probably can be saved.

When a retinal tear or hole has not yet progressed to a detachment, your physician may use one of two techniques. A laser procedure is often used to prevent further detachment. In this process, known as photocoagulation, a laser beam is directed to the damaged area of the retina. The treated area then forms a scar, which usually holds the retina to the underlying tissue. The other method, known as cryopexy, uses intense cold. An ice probe is applied to the outer portion of the eye that covers the defect. This produces an inflammation that leads to formation of a scar (as in laser therapy), which holds the retina to the underlying tissue.

A major advantage of photocoagulation and cryopexy is that they can be performed on an outpatient basis. If your retina does become detached, however, you may be admitted to the hospital for further operation.

Surgical reattachment of the retina is usually performed by pushing the scleral layer of the eye back against the retina with a technique called scleral bucking. In this procedure the wall of the eye (sclera) is indented (buckled) over the defect. Silicone, either in the form of a soft sponge or a solid piece, is stitched to the outer surface of the sclera. When there are several tears or holes or an extensive detachment, scleral buckles sometimes are placed around the entire circumference of the eye.

Occasionally scar tissue forms in the vitreous, either before or after operation, and prevents reattachment of the retina. When this happens, the scar must be removed surgically and scleral bucking must be performed. In some complicated cases, injection of air or other gases or silicone oil into the vitreous cavity helps push the retina back against the wall of the eye. You may need to avoid strenuous activities for 3 to 4 weeks after the operation.

LASERS AND EYE DISEASE

During the past 10 years, advances in laser technology have made possible effective treatment of various eye ailments. Sometimes lasers are used to seal a tear or to cauterize a blood vessel.

Diabetic Retinopathy

One of the more frequent applications of laser therapy is for diabetic retinopathy. This condition seems to be caused mainly by a reduction of the oxygen supplied to the tissues of the retina due to blood vessel deterioration consequent to diabetes.

By making numerous small burns in the periphery of the retina with the laser, the amount of retina that uses up oxygen is reduced and the remaining retina then has an adequate supply of oxygen. At each of the small burns there is, of course, no vision, but because they are mainly around the periphery, they cause only minimal impairment of vision.

For the most part, the results of laser therapy in persons with diabetes have should begin as soon as retinopathy threatens vision.

If you have diabetes, be sure to get regular examinations by an ophthalmologist.

Glaucoma

Physicians use a technique called laser iridotomy in treating acute glaucoma (a sudden increase of pressure within the eye.) In this procedure, which can be done in a physician's office, a small openings made in the iris to relieve built-up pressure between the iris and lens. Chronic glaucoma also can be treated with laser therapy to reduce intraocular pressure.

Retinal Detachment

Lasers are used to treat retinal detachment. Retinal detachment is a very serious disorder in which the retina located at the back of the eye becomes partially detached from the choroid tissue that nourishes it. If the retina is not reattached quickly, severe loss of vision may result. Lasers are now used to help seal the retinal tears that precede detachment.

Macular Degeneration

In its early stages, macular degeneration can be treated with laser therapy, although results are often disappointing. In this disorder, blood vessels grow between the central portion of the retina (macula) and choroid tissue. These vessels often leak blood, causing scarring and loss of vision. If the condition is diagnosed early, lasers can seal the blood vessels.

Secondary Cataract

After a cataract operation vision may decrease gradually because a thin membrane within the eye (the posterior lens capsule) sometimes clouds up. The posterior lens capsule is left in the eye during most cataract operations because it is safer for the eye and it supports the intraocular lens implant.

If the posterior lens capsule causes blurred vision, the problem often can be solved with a laser beam. The procedure is usually performed in the ophthalmologist's office or on an outpatient basis a hospital.

Orbital and Eyelid Tumors

New types of lasers are sometimes helpful for treating tumors around the eye. Your ophthalmologist will advise you as to whether this is indicated.

Litin, S. C., & Nanda, S. (2018). Mayo Clinic family health book. Rochester, MN: Mayo Clinic.