

What You Should Know About Macular Pucker

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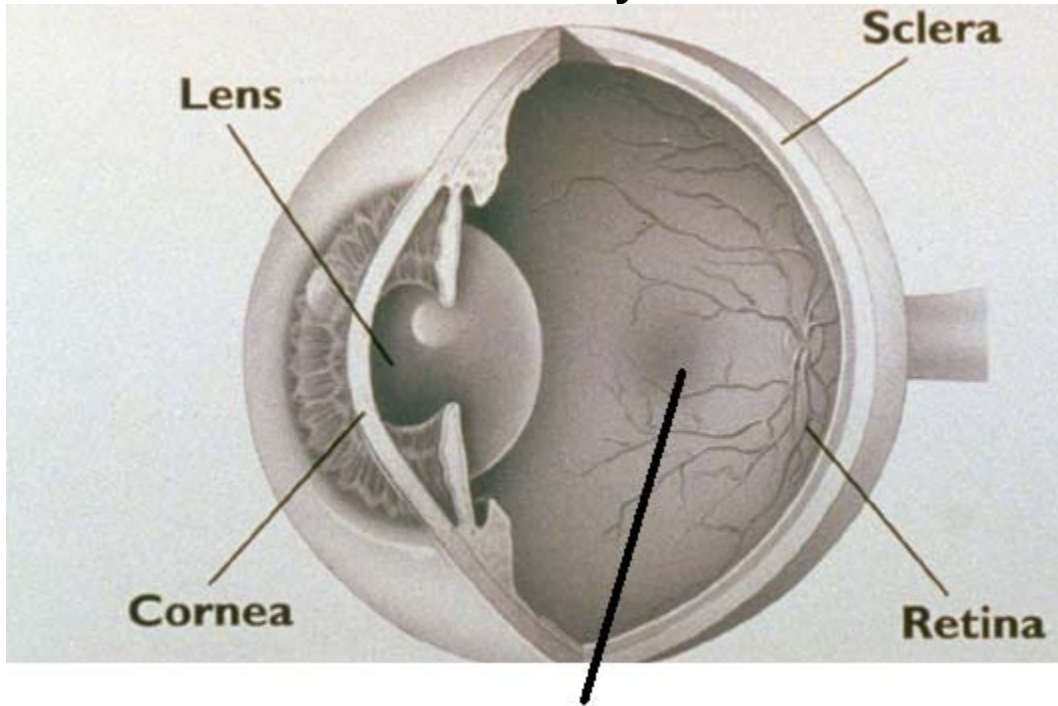
Macular pucker is a condition in which a membrane grows over the surface of the retina and contracts, wrinkling the retina and leading to distortion and blurring of vision. The symptoms usually come on gradually. Vision may be reduced to only a minor degree or may be severely reduced. If vision is reduced significantly, the membrane can be removed surgically, usually resulting in visual improvement. Macular puckers are relatively common. In different population based studies, anywhere from 3.4-18.5% of adults have been found to have a macular pucker.(1)

What Causes Macular Pucker?

At birth, the vitreous jelly that fills the eye is firmly attached to the retina, which lines the back surface of the eye. With aging, the vitreous becomes liquefied and begins to separate from the retina. In most cases, the separation is a smooth one and is unnoticed by the patient. Sometimes, however, there are firmer adhesions of the vitreous to the retina and the separation leads to a rip in the inner membrane of the retina. Cells within the retina can migrate through the rip onto the surface of the retina and multiply to form a membrane. As this membrane matures, it can

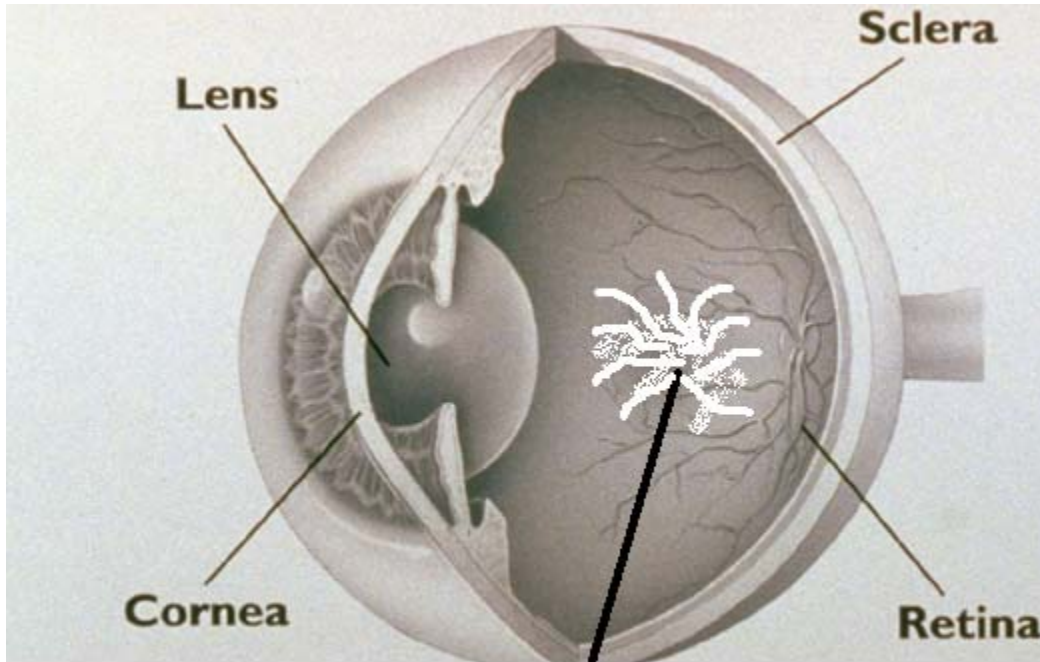
contract and wrinkle the underlying retina to which it is attached. The figure below illustrates this process.

Normal Eye



Macula

Eye With Macular Pucker



Pucker Over the Macula

What Happens If Nothing Is Done?

In some instances, the membrane causing the macular pucker can spontaneously separate from the retina and allow the retina to unwrinkle with spontaneous improvement in vision. For this reason all macular puckers should be observed for some period of time after they are recognized. Although there are no rigorously conducted studies addressing how frequently this occurs, the best evidence from the literature suggests that 1-2% will so improve. In another group of patients, perhaps 65-70%, the vision remains stable indefinitely. Finally, some patients, perhaps 30%, have progressive wrinkling and gradual worsening of vision. No patient goes blind from macular pucker. The peripheral vision is always intact even when central vision is impaired.

What Can Be Done About Macular Pucker?

When vision is impaired to the point that the patient's functioning and quality of life are disrupted, an operation called a vitrectomy can be performed to improve vision. In a vitrectomy, the vitreous jelly that fills the back of the eye is removed with a suction-cutter and the membrane is peeled from the surface of the retina with fine instruments under a microscope. Approximately 85% of patients having this operation will experience improved, but generally not normal (20/20) vision. Approximately 10% of patients will have a technically successful operation, but will not have improved vision because of permanent damage to the cells from the period of wrinkling. Approximately 5% of patients will have worse vision as a result of surgical complications such as retinal tears, hemorrhage, infection, or glaucoma. Almost all patients will develop a cataract earlier in the eye which has had a vitrectomy than in the fellow eye.

Summary

Macular pucker is a condition in which the retina is wrinkled and vision reduced due to a membrane overlying the retina. Sometimes the reduction in vision is minimal and nothing should be done except periodic examination. In other cases, the vision is

significantly reduced. In these cases, surgery can be performed to remove the membrane and improve vision.

Should you have questions after reading this document, please submit them by going to the home page of this website and clicking on Contact at the bottom of the page.

Updated 7/5/2009.

Reference List

- (1) Duan XR, Liang YB, Friedman DS, et al. Prevalence and associations of epiretinal membranes in a rural Chinese adult population: the Handan Eye Study. *Invest Ophthalmol Vis Sci* 2009; 50:2018-2023.