Lattice Degeneration

Factsheet

Signs & Symptoms
The patient is usually over age 20 and is nearly always asymptomatic, except for possible complaints of flashing lights (photopsia). There appears to be a higher incidence of myopia in patients with lattice degeneration. There is no racial or sexual predilection.

Lattice degeneration occurs in eight to 11 percent of the general population. It presents as a linear trail of fibrosed vessels within atrophied retina in a "lattice" pattern. It nearly always runs circumferentially between the equator and the ora serrata. The individual lesions are usually from one-half to six disc diameters and may run 360 degrees around the eye in a discontinuous pattern. There may be associated RPE hyperplasia, giving the lesion a pigmented appearance. Atrophic holes are often present in the lesion, occasionally large enough to encompass the entire lattice lesion. The incidence of atrophic holes in lattice degeneration ranges from 18 to 42 percent. A tractional linear tear will occur on the posterior edge of lattice lesions in 1.9 percent of lesions. Lattice degeneration is typically bilateral.

Pathophysiology
The etiology of lattice is questionable. It appears to be due to dropout of peripheral retinal capillaries with resulting ischemia, which induces thinning of all retinal layers. There is sclerosis of the larger vessels, with their lumen being filled with extracellular glial tissue, giving lattice degeneration its characteristic fibrotic appearance.

The retinal thinning has several effects: (1) the overlying vitreous will be disturbed, resulting in a pocket of liquefaction overlying the lattice lesion known as a lacuna; (2) the vitreous along the edges of the lattice lesion will undergo strong adhesion to the retina; and (3) the ischemia and retinal thinning will disturb the retinal pigment epithelium, resulting in RPE hyperplasia and a pigmented appearance.

Often the thinning becomes so profound that a full-thickness hole atrophies through the retina at the lattice lesion. The overlying liquefied vitreous has the ability to pass through the hole into the subretinal space and possibly lead to rhegmatogenous retinal detachment. This will occur in approximately two percent of cases of holes within lattice degeneration. Due to the liquefaction of the overlying vitreous, there is no vitreoretinal traction on the edges of a hole in lattice degeneration. If a posterior vitreous detachment occurs, the vitreoretinal traction along the posterior edge of a lattice lesion may result in a linear tear, with an ensuing progression to rhegmatogenous

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retinal detachment in 37 percent of cases.

Management

The main concern with lattice degeneration is the chance of progression to rhegmatogenous retinal detachment. With many types of retinal breaks, the area is often prophylactically sealed with laser photocoagulation or cryoretinopexy to prevent this. In lattice degeneration alone, prophylactic treatment is not practical in that the risk of detachment is only 0.1 to 0.7 percent in the phakic eye. Atrophic holes in phakic eyes with lattice degeneration also do not require prophylactic treatment, as the risk of progression to detachment is two percent or less.

Furthermore, prophylactic treatment of lattice lesions in eyes with greater than 6.00D of myopia yields no benefit. These lesions need only routine, yearly monitoring with the patient educated about signs and symptoms of retinal detachment. However, a linear tractional tear forming at the posterior border of a lattice lesion has about a 37 percent risk of progression to retinal detachment and therefore should receive prophylactic therapy.

Clinical Pearls

- Lattice degeneration both with and without atrophic holes is generally benign and does not require prophylactic treatment, as the complications of treatment are more severe than the natural history of the untreated condition.

- The ominous tractional tear at the posterior border of a lattice lesion is very difficult to see ophthalmoscopically. These tears will usually only become apparent upon scleral indentation. Perform scleral indentation, whenever possible, on every lattice lesion to look for an occult tractional tear.

The Retina is a thin, transparent tissue that lines the back inside wall of the eye. It works a bit like the film of a camera by using its sensitive receptors to capture images of light that enter the eye. These captured images are then changed into electrical impulses and transmitted to the brain where vision is interpreted. Without an intact retina, vision is not possible.

Different factors can cause the retina to tear and detach from the back wall of

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the eye. Tears often lead to detachments, although the retina can sometimes detach without first being torn. When detachment occrus, vision can only be saved by immediate medical attention to seal any existing tears and reattach the delicate membrane.