

Summary for Retinacanada.com

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Retinal Detachment

Retinal detachment is a condition in which the retina, a light-sensitive tissue located at the back of the eye, is separated from the supportive underlying tissue. Retinal detachment often occurs spontaneously but can occur due to trauma, diabetes, inflammatory disorders, neoplasms or posterior vitreous detachment. Retinal detachment can be classified according to their mechanism of detachment: *rhegmatogenous* (break in the retina) or *non-rhegmatogenous* (leakage/exudation beneath the retina or traction on the retina). Typically, symptoms of retinal detachment include flashing lights, the sudden appearance of a large number of floaters, blurred vision and blindness in part of the visual field in one eye. Patients often describe retinal detachment as a black curtain being pulled over their visual field. Most patients with retinal detachment will need urgent surgery to reattach the retina to the underlying tissue with the goal of preserving almost all of their vision.

(1) Rhegmatogenous Retinal Detachment:

(i) Posterior Vitreous Detachment

The eye is mostly filled with vitreous humor, a gel-like substance that helps maintain the shape of the eye. The vitreous humor is in direct contact with the retina, a light-sensitive tissue located at the back of the eye. As we age, the vitreous humor slowly shrinks and pulls against the retina. Usually these connections between the retina and vitreous humor break resulting in a separation between these two layers. This process, which typically occurs in patients between the ages of 50 and 75 years old, is known as posterior vitreous detachment. The most common symptoms of posterior vitreous detachment include floaters, flashing lights in the peripheral vision and blurred vision. In most cases posterior vitreous detachment is not sight threatening and does not require any treatment. However, in certain cases posterior vitreous detachment can result in a macular hole, a retinal tear or retinal detachment, all of which will likely require surgical treatment to restore vision. In posterior vitreous detachment, the vitreous does not directly pull the retina directly off

but allows fluid accumulation through a tear that causes retinal detachment. While retinal tears usually develop soon after the onset of symptoms, occasionally a tear or detachment may not occur until months later.

Retinal tears are often located in the periphery of the retina and have little effect on vision. However, retinal tears can lead to retinal detachment. This occurs as vitreous humor flows through the retinal tear into the space in between the retina and its supporting layers. Retinal tears may occur without any symptoms but may also result in floaters, flashing lights, and decreased vision. Patients with retinal tears need urgent treatment, often with a laser, to create a scar around the tear and to prevent retinal detachment.

(ii) Traumatic retinal detachment

Traumatic retinal detachment occurs from an ocular injury that has resulted in the separation between the retina and its supporting layers. Symptoms of a traumatic retinal detachment are similar to a spontaneous retinal detachment and include floaters, flashing lights and decreased vision.

(2) Non-Rhematogenous Retinal Detachment

(i) Traction Retinal Detachment

Traction retinal detachment occurs when strong adhesions between the vitreous and the retina contract, resulting in the pulling and subsequent detachment of the retina from its underlying supporting layers. This type of retinal detachment is not associated with a retinal break, although occasionally a retinal detachment may have rhematogenous and non-rhematogenous components. The two most important causes of traction retinal detachment are proliferative retinopathies and perforating ocular trauma. Symptoms are similar to those described for rhematogenous retinal detachment but floaters and flashing lights are less frequent. Proliferative retinopathies include proliferative diabetic retinopathy, vitreomacular traction syndrome, retinopathy of prematurity, or sickle cell retinopathy, which can all lead to new blood vessels formation on the retina. These new vessels can pull on the retina and cause a retinal detachment.

(ii) Exudative Retinal Detachment

Exudative retinal detachments occur less frequently than rhegmatogenous or tractional retinal detachments. They occur as a result of fluid accumulation beneath the retina without a retinal break, and they are often associated with inflammatory conditions or choroids neoplasms or metastases. They can also occur spontaneously in a condition known as central serous retinopathy. Symptoms usually consist of decrease in vision in the absence of floaters and flashing lights. Therapy is directed towards treating the underlying cause.

(iii) Lattice Degeneration

Lattice degeneration is a disease of the eye where thinning of the peripheral retina in a lattice-like pattern occurs. Patients with lattice degeneration are typically asymptomatic and lesions are usually discovered incidentally during a routine dilated eye exam. Complications of lattice degeneration include the development of retinal tears and retinal detachment. While it is a relatively common finding that is observed in about 10% of individuals, only 1% of these individuals experience significant new tears or detachments. There is an increased prevalence of lattice degeneration in young myopic (near-sighted) individuals. The cause of lattice degeneration is unknown. Individuals diagnosed with asymptomatic lattice degeneration should undergo an annual dilated eye exam and monitor for the onset of new symptoms that indicate a retinal tear or detachment (large amount of floaters, flashing lights, decreased vision). In certain cases, laser treatment is performed to prevent retinal tears and detachment in asymptomatic high-risk individuals.