Retinal Artery Occlusion

Retinal artery occlusion is a blockage of one or more arteries within the retina, inside the back of the eye, usually resulting in sudden painless loss of vision. A central retinal artery occlusion (CRAO) is a blockage that affects the entire retinal arterial circulation, while a branch retinal artery occlusion (BRAO) affects only a portion of the retina. Retinal artery occlusion is often referred to as a stroke in the retina. Of note, retinal artery occlusion is different from a retinal vein occlusion, which is also sometimes referred to as a stroke in the retina.

What causes a retinal artery occlusion?

The retina is fed by a system of blood vessels (arteries and veins) like a tree, with the trunk in the optic nerve and branches extending to the farthest edges of the retina. A central retinal artery occlusion (CRAO) is blockage of blood flow to the retina in the main trunk with sudden, severe vision loss throughout the visual field of one eye. A branch retinal artery occlusion (BRAO) is blockage along a branch of the tree. If a branch retinal artery occlusion is located away from the center of the retina, central vision may be unaffected. If the artery occlusion affects the central retina, both distance and reading vision may be severely limited. The blockage may last only a few seconds, or it may be permanent.

The most common risk factors for retinal arterial occlusion are atherosclerosis, hypertension, and diabetes. An embolus or “floating log jam” such as cholesterol or a detached blood clot may originate in the heart or carotid arteries in the neck and block a retinal artery. Carotid artery disease is present in about half of patients with CRAO. If presenting before age 30, retinal artery occlusion is more often associated with migraine, trauma, certain medications or coagulation disorders (blood disorders that cause easy clotting). In elderly patients, a disease called giant cell arteritis can cause inflammation of the central retinal artery, resulting in occlusion.

Evaluation of retinal artery occlusion

Your retinal surgeon may order diagnostic tests in the office to determine the degree of damage caused by the artery occlusion. Blood flow in the affected area may be permanently reduced. In some cases, the eye may grow abnormal blood vessels. These complications of BRAO or CRAO can be detected by a combination of clinical examination and imaging tests.

Fluorescein angiography (FA) evaluates blood flow in the retina with a series of photographs taken after intravenous injection of a synthetic dye (fluorescein) which contains no iodine. Carotid studies, magnetic resonance angiogram, echocardiogram, and blood tests may be ordered to look for medical problems which may be life-threatening if untreated.

Bay Area Retina Associates

Diseases & Surgery of the Retina and Vitreous www.bayarearetina.com

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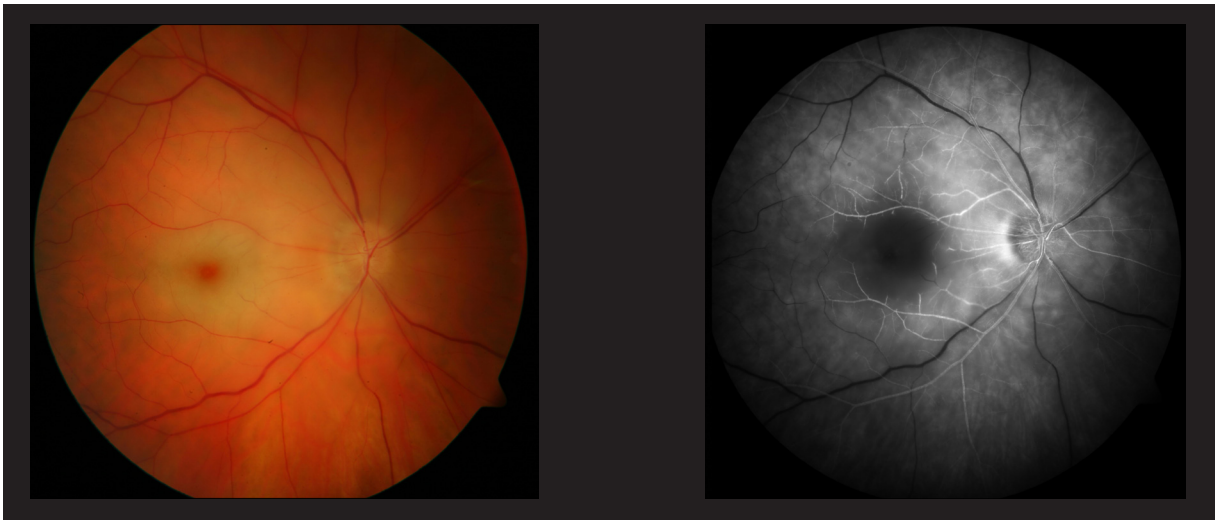

Whitening of the central retina and a "cherry red spot" are typical findings of central retinal artery occlusion.

In cases of retinal artery occlusion, fluorescein angiography often reveals a delay in arterial retinal blood flow.

Treatment of retinal artery occlusion

While it is important to identify and treat the underlying cause of a retinal arterial occlusion, there are no well-established medical or surgical techniques for treating the actual occlusion. Interventions that have been tried over the last few decades but are not supported by high quality medical evidence include: Massage of the eye to increase blood flow, decrease eye pressure, and dislodge the occlusion; Removal of fluid from the front of the eye to lower eye pressure; Sublingual nitroglycerin (nitroglycerin tablet placed under the tongue); and Hyperbaric oxygen therapy. In most cases, these interventions are not recommended and time will determine the degree to which vision may return.

Separate from the vision loss caused directly by the artery occlusion, secondary complications may occur months or even years later. New abnormal blood vessels (neovascularization) may grow in the front of the eye, causing glaucoma, sometimes with pain and further loss of vision. Neovascularization can be treated with laser and injections of medicine into the eye, but these treatments do not restore vision.
In all cases, treatment of underlying medical conditions (such as diabetes, high blood pressure, carotid artery disease, or heart disease) is critical to prevent stroke or blood vessel blockage elsewhere in the body.

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Bay Area Retina Associates is a group practice of retinal surgeons. All members of the group are board certified by the American Board of Ophthalmology and have completed fellowship training in the medical and surgical care of retinal diseases. All BARA surgeons have expertise in the treatment of common diseases such as AMD, diabetic retinopathy and retinal detachment, as well as rare diseases. BARA physicians see patients in eight offices around the East Bay, a community we have served for almost 40 years.