A 54-year-old woman with a 10-year history of insulin-dependent type 2 diabetes mellitus was referred by her optometrist because of the recent onset of blurriness in her right eye. Her optometrist told her that new blood vessel growth and leakage had developed.

A funduscopic examination demonstrated neovascularization of the optic disc, with blood in the vitreous directly over the macular area of the right eye. Dot and blot retinal hemorrhages were scattered throughout the posterior pole. A few hard exudates were also seen. A large preretinal hemorrhage was detected in the infranasal quadrant of the left eye. Because the bleeding was not near the patient's line of sight, she had not experienced visual difficulties in this eye. Proliferative diabetic retinopathy was diagnosed. The optic disc neovascular vessels had begun to leak, and the blood settling over the macula manifested as a cloud in the patient's vision. The patient's other retinal hemorrhages and hard exudates are common in moderate diabetic retinopathy. The preretinal hemorrhage in the left eye is another sign of proliferative diabetic retinopathy, which is treated with laser panretinal photocoagulation.

A 73-year-old woman presented for evaluation because of a sudden severe but painless loss of vision in her left eye 2 days earlier. Her medications included ramipril, 2.5 mg/d; aspirin, 81 mg bid; and a multivitamin. The patient's initial visual acuity was 20/20 in the right eye and light projection in the left eye. She had a left afferent pupillary defect. Results of the funduscopic examination of the right eye were unremarkable. The fundus of the left eye showed a foveal cherry-red spot; retinal whitening and opacification surrounding the fovea; and retinal arterial thinning with segmentation, or "boxcarring." Her seated blood pressure was 200/82 mm Hg in the right arm and 192/80 mm Hg in the left.

This patient had experienced an arterial occlusive event, probably of the central retinal artery in the left eye. This neuroretinal ischemic disorder is often associated with conditions that lead to embolus formation but is also seen in patients with coagulopathies, collagen vascular and inflammatory disorders, and vasculitides and in patients with systemic abnormalities such as untreated or undertreated hypertension and diabetes.

There is no effective treatment for patients who present several hours or days after onset. In acute presentations, ocular massage, rebreathing in a paper bag, or anterior chamber paracentesis may be tried. Systemic conditions must be identified and treated. This patient was referred to her internist for further evaluation.

A 82-year-old man with a history of cataracts in both eyes noticed a sudden painless diminution of vision in the left eye. He had no new headaches or jaw claudication. His medications included hydrochlorothiazide and atorvastatin. The patient's best corrected visual acuity was 20/25 in the right eye and 20/60 in the left. There was no light perception in the left eye. Results of the funduscopic examination of the left eye were unremarkable. The patient had experienced a central retinal vein occlusion.
Funduscopic Examination: Clarifying the Cause of Blurred Vision

Proliferative Diabetic Retinopathy

Arterial Occlusive Event

Ischemic Optic Neuropathy

Wet Macular Degeneration

Central Retinal Vein Occlusion

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CRVO requires just periodic monitoring; any systemic disorders, such as hypertension or diabetes, such as pegaptanib sodium. *

There are 2 categories of CRVO: nonischemic (perfused) and ischemic (nonperfused). Nonischemic CRVO requires just periodic monitoring; any systemic disorders, such as hypertension or diabetes,
must be addressed. The ischemic type is associated with a strong probability of neovascularization of
the iris, optic disc, and retina. This often leads to neovascular glaucoma and a blind, painful eye. This
condition is usually treated with laser panretinal photocoagulation unless, as in this patient's case,
retinal hemorrhaging prevents laser application. Investigational therapies such as radial optic
neurotomy are being tested in these severe cases. *

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