

INTRODUCTION

DISEASE DEFINITION

Retinal vein occlusion (RVO) is the second most common retinal vascular disorder following diabetic retinopathy and is often associated with vision loss.⁴ Retinal vein occlusion occurs when there is a partial or complete obstruction of a retinal vein, and it is classified by the location of the occlusion. An obstruction of the retinal vein at or posterior to the optic nerve head is referred to as a central retinal vein occlusion (CRVO), and a complete or partial obstruction at a branch or tributary of the central retinal vein is referred to as a branch retinal vein occlusion (BRVO). An RVO involves either a complete or partial decrease in venous outflow within the retinal circulation with varying degrees of retinal vascular leakage, leading to both macular edema and an increase of intravenous pressure that results in intraretinal hemorrhages.⁴ Branch retinal vein occlusions typically occur at an arteriovenous crossing point, where there is a common adventitial sheath, and are more commonly detected in the superior temporal quadrant.⁵ The major risk factors for RVO include systemic arterial hypertension, arteriosclerosis, and diabetes.⁶

A hemiretinal vein occlusion (HRVO) is an occlusion occurring at the disc that commonly involves half of the neurosensory retinal venous drainage, either the superior or inferior hemifield. This pattern occurs in 90% of HRVOs.⁷ Some patients with HRVO may have two distinctive central retinal veins referred to as hemicentral retinal veins; one drains the superior and the other drains the inferior retinal hemisphere. Occlusion of one trunk is referred to as a hemi-CRVO.⁸ In general, HRVOs are clinically similar to BRVOs and have a visible occlusion near a branch point. However, hemi-CRVOs are clinically similar to CRVOs—no crossing point is visible and there is increased risk of late-developing iris and angle neovascularization and secondary elevated intraocular pressures (IOPs). Differentiation between an HRVO and a hemi-CRVO is not always possible.

The loss of vision that is associated with a vein occlusion usually occurs from macular ischemia or edema, retinal hemorrhages, vitreous hemorrhage, epiretinal membrane formation, rubeosis iridis, and neovascular glaucoma.⁴ Other findings associated with RVOs include retinal arterial macroaneurysm formation and cilioretinal artery occlusions.

All vein occlusions are ischemic to varying degrees. The retina drained by the occluded vessels releases hypoxia-related factors such as vascular endothelial growth factor (VEGF), and thus there is a spectrum of nonperfusion.⁹

PATIENT POPULATION

The patient population includes people over 40 years of age, but RVOs most commonly occur in the 6th to 7th decade of life.^{10, 11} Retinal vein occlusions are relatively uncommon in individuals under age 40.

CLINICAL OBJECTIVES

- ◆ Identify patients at risk for developing RVO
- ◆ Encourage management of potential risk factors for both CRVO and BRVO, including optimizing systemic blood pressure and diabetes as well as control of glaucoma and ocular hypertension
- ◆ Increase awareness of both ophthalmologists and primary care physicians of the higher risk of cardiovascular and stroke complications in patients presenting with RVO
- ◆ Monitor for signs of posterior or anterior segment neovascularization and neovascular glaucoma in all eyes with most RVOs, because a nonischemic can become an ischemic RVO
- ◆ Treat or follow patients who have vision loss or those at risk for vision loss after RVO and consider a systemic workup for patients under 50 years of age
- ◆ Minimize treatment side effects that might adversely impact vision and/or vision-related quality of life
- ◆ Provide or refer the patient for visual rehabilitation services when permanent visual impairment results from the disease