

Vitreous Hemorrhage in the Setting of a Vascular Loop

Joy Huang, OD; Paul B. Greenberg, MD, MPH; and Joseph V. Mega Jr, OD

Although uncommon, vascular loops should be kept in the differential diagnosis of vitreous hemorrhage, and patients should seek care if experiencing new floaters or visual loss.

Dr. Huang is a Staff Optometrist at the Manchester VA Medical Center in New Hampshire. **Dr. Mega** is Chief of Optometry, and **Dr. Greenberg** is Chief of Ophthalmology, both at the Providence VA Medical Center in Rhode Island. Dr. Huang and Dr. Mega are adjunct faculty at New England College of Optometry in Boston, Massachusetts. Dr. Greenberg is Professor of Surgery (Ophthalmology) at Warren Alpert Medical School of Brown University in Providence. **Correspondence:** Dr. Huang (joy.huang@va.gov)

Vascular loops are rare congenital optic nerve anomalies that originate from the arterial or venous circulation; 90% arise from the arterial circulation.¹ Vascular loops are usually asymptomatic unless an arterial or venous occlusion, hyphema, and vitreous or preretinal hemorrhage should arise.¹⁻⁸ This article describes a patient who presented with a vitreous hemorrhage secondary to a vascular loop.

CASE PRESENTATION

A 67-year-old white male presented to the eye clinic at the Providence VA Medical Center in Rhode Island after experiencing floaters and “snowflakes” in the left eye for 2 days. The patient reported having no photopsias, loss of vision, preceding eye/head trauma, or Valsalva maneuver. His medical history was significant for well-controlled type 2 diabetes mellitus (known duration of 5 years), hypertension, hyperlipidemia, cor-

onary artery disease, and anemia. His medications included aspirin 81 mg, furosemide, clonidine, labetalol, valsartan, glipizide, and lantus injections.

The patient’s ocular history was significant for cataracts in both eyes. On examination, best-corrected visual acuity was 20/20 in each eye with intraocular pressures of 15 mm Hg in the right eye and 14 mm Hg in the left eye. Anterior segment examination was notable for I+ nuclear sclerotic cataracts in both eyes with red blood cells visible in the anterior chamber in the left eye. Dilated fundus examination in the right eye was notable only for a posterior vitreous detachment (PVD) and tortuous retinal vessels; there was mild haze in the left eye due to a vitreous hemorrhage, a fibrous vascular loop on the disc extending anteriorly into the vitreous, a nasal peripapillary hemorrhage, and a layered vitreous hemorrhage inferiorly (Figure 1).

No PVD, retinal break, or detachment was present in the left eye with scleral depression. No background diabetic retinopathy was present in either eye. Fluorescein angiography (FA) was notable in the left eye for blockage at the site of the loop through the midphase with faint hyperfluorescence in the later phase without vascular or disc leakage (Figures 2A and 2B).

The patient was diagnosed with a vitreous hemorrhage associated with a vascular loop in the left eye. At 1 month, the patient reported that the snowflakes had resolved in the left

FIGURE 1 Fundus Photograph of the Left Eye



Image shows a fibrous vascular loop and associated retinal and vitreous hemorrhages.

eye; on dilated fundus examination, both the nasal peripapillary hemorrhage and vitreous hemorrhage were resolving (Figure 3).

DISCUSSION

Salient features of this case include the prominent vascular loop at the disc extending anteriorly into the vitreous and an absence of features suggestive of one of the more common etiologies of vitreous hemorrhage, such as PVD, retinal tear/detachment, proliferative diabetic retinopathy (PDR), or retinal vein occlusion.

The incidence of venous loops is 1 in 9,000 with no associated systemic conditions.^{2,3} Typically unilateral, vascular loops arise at the optic disc from the central retinal artery or vein.¹⁻⁴ An arterial loop is a separate entity from a hyaloid artery.² The authors were unable to definitively determine whether the loop in this patient was arterial or venous in origin due to blockage from the associated retinal hemorrhage on FA.

Valsalva maneuver, vitreous traction, trauma, and loop torsion in patients with vascular loops can lead to amaurosis fugax, PVD, and hemorrhagic complications, such as hyphema and vitreous and retinal hemorrhages.^{1,3,6-8} In addition, retinal ischemia and thrombosis from the vascular loops can lead to retinal artery or vein occlusions.¹⁻⁸ Vitreous and retinal hemorrhages, such as in this patient, are often observed with complete resolution and visual acuity returning to baseline.^{4,5} For recurrent or nonresolving vitreous hemorrhages, a vitrectomy can be performed.^{3,6}

CONCLUSION

Patients with vascular loops should be educated to seek eye care if experiencing new onset floaters or visual loss.

Author disclosures

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FIGURE 2A Left Eye Blockage of the Vascular Loop at Midphase



FIGURE 2B Faint Hyperfluorescence Within Loop in Later Phase



FIGURE 3 Fundus Photograph of Left Eye at 1 Month Follow-up



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