



A Suspicious Vessel

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Introduction:

A 66-year-old Caucasian female was referred to our office for evaluation of a “suspicious” iris vessel in her left eye. She had recently undergone cataract surgery three weeks prior to presentation on both eyes and the vessel was noted upon follow up. Her past ocular history was significant for myopia, prior LASIK

surgery on both eyes, cataracts which have now been removed and a mild epiretinal membrane in the left eye. Her past medical history consisted of obstructive sleep apnea, controlled type 2 diabetes, and hyperlipidemia. Her medications at the time of her visit with us were 81 mg aspirin, metformin, and simvastatin. She also was taking prednisolone, bromfenac, and moxifloxacin all twice daily in the left eye given her recent cataract extraction. Her family history was non-contributory. Her review of systems was negative and the patient denied any personal or family history of cancer.

Exam:

Visual acuity without correction was 20/40 in the right eye and 20/60 in the left eye. Intraocular pressures were 14 bilaterally. No periocular hyperpigmentation, rashes, abnormal blood vessels, or proptosis was present on external examination. Slit lamp biomicroscopy of the anterior segment revealed a well-placed

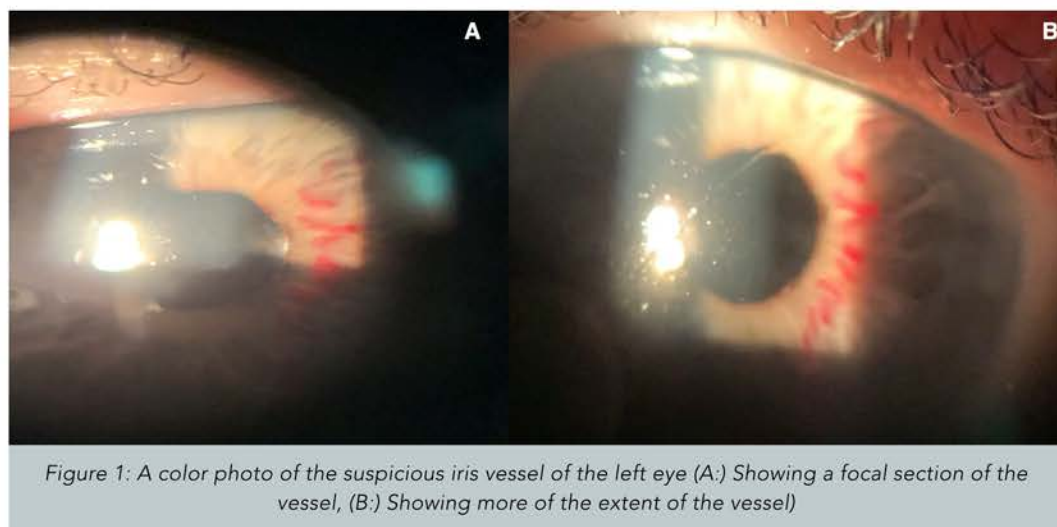


Figure 1: A color photo of the suspicious iris vessel of the left eye (A:) Showing a focal section of the vessel, (B:) Showing more of the extent of the vessel)

intraocular lens (IOL) in both eyes. A dilated, tortuous vessel was noted overlying the temporal iris in the left eye (Figure 1). No sentinel vessels were seen on the episcleral surface. Dilated fundus examination revealed vitreous syneresis in both eyes with a normal macula and periphery in the right eye. The left eye demonstrated a mild epiretinal membrane in the macula and the periphery was free of any breaks or abnormalities. Most notably there was NO evidence of diabetic retinopathy, posterior segment lesions or posterior segment neovascularization.

Gonioscopy of both eyes revealed an open angle with a visible ciliary body band. No abnormal neovascularization was appreciated. The prominent temporal vessel was noted to traverse in a vertical fashion from the superior angle to the inferior angle.

OCT was obtained and revealed a normal foveal contour in the right eye and an epiretinal

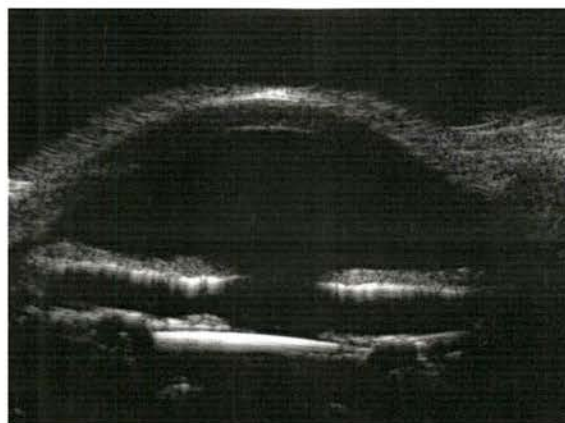


Figure 2: A UBM demonstrating a well-positioned IOL and absence of a ciliary body mass.

membrane in the left eye with minimal disruption of the foveal contour. B-scan ultrasonography did not demonstrate any peripheral retinal masses or abnormalities. Ultrasound biomicroscopy (UBM) was also performed and confirmed a well-positioned IOL in both eyes. No ciliary body masses or masses on the posterior surface of the iris were noted (Figure 2 and 3).



Figure 3: A UBM demonstrating an open angle without any evidence of an angle mass.

Fluorescein angiography (FA) was conducted, posterior and anterior segment photos during the FA were taken. No abnormal hyperfluorescence was noted and the posterior segment was free of any evidence of neovascularization or retinal ischemia. The FA highlighted the details of the left iris vessel well (Figure 4). A comparison between the normal radial iris vessels of the right eye and the left iris vessel was readily apparent (Figure 5).

Work-up:

Differential diagnosis for this patient included racemose hemangioma of the iris, cavernous hemangioma, capillary hemangioma, neovascularization of the iris and iris varix. Our patient denied any systemic changes or headaches. She also denied any history of prior blood vessel abnormalities or family history of such. Based on examination and findings on fluorescein angiography a diagnosis of an iris racemose hemangioma was made. Observation was recommended and the patient was told to follow up at regular intervals with her comprehensive ophthalmologist. Should any change occur in the vessel, she was advised to report back to our office for re-evaluation.

Discussion:

Iris racemose hemangiomas are a form of an arteriovenous malformation and are a benign entity. It is formed by the joining of an artery to a vein that results in complete bypass of the capillary network. In the case of this blood vessel abnormality, the iris is a fairly rare site for this to occur.

However, this may be due to the fact that

small or subtle versions of this may go undetected. Iris racemose hemangiomas tend to appear as a solitary, large and tortuous blood vessel that appears to be twice as large as the normal iris vasculature and will be intertwined within the stroma of the iris. These vessels will have a serpentine-like appearance and will take a course from the iris root to the stroma head near the peripupillary region followed by a course back to

the iris root again. In most cases this will be a unilateral finding. These vascular abnormalities are better visualized in lighter colored irises such as blue and green rather than more deeply pigmented ones such as brown. Occasionally, an associated prominent episcleral vessel can be seen in the limbal sclera. This is known as a "sentinel vessel," and can raise suspicion for a malignancy or an intraocular tumor as sentinel vessels can often be associated with posterior segment tumors. In our case, the patient did not have a sentinel vessel.

Most commonly these lesions will occur in asymptomatic patients. There does not appear to be any predisposing factors to the development of this lesion. Overall, these lesions do not cause problems for patients and many will go their entire lives without issues. However, it is possible to develop a hyphema, albeit rare.

A thorough clinic exam is critical to help narrow down

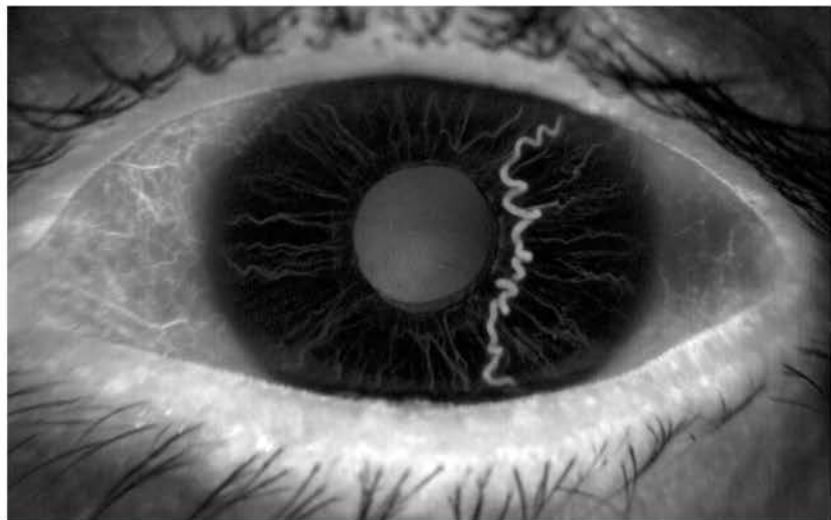


Figure 4: FA highlighting the Racemose Hemangioma of the iris in the left eye.

the differential diagnosis in these patients, paying close attention to the sclera and episclera for abnormal vessels. It is also important to look at the periocular tissues as well for any pigmentary changes or vascular prominences. Gonioscopy is helpful to follow the course of the vessel as it heads toward the iris root and to ensure no angle abnormalities exist. UBM is useful when there is a question of a mass on the posterior surface of the iris or in the angle as it will aid in revealing any unseen lesions.

A nice way to highlight these lesions is through fluorescein angiography, as this imaging modality will make the area in question readily apparent as seen in Figure 5. This is also helpful in distinguishing an iris racemose hemangioma from a neovascular process, as a neovascular process will cause hyperfluorescence in the later phases of the study. With the increased use of OCT Angiography, further studies are looking at ways to use it to delineate iris racemose hemangiomas as well with good success, but this is still being explored.

In general, iris racemose hemangiomas are managed with observation. Most patients are asymptomatic upon presentation and will not go on to develop problems secondary to these lesions. In cases where a spontaneous hyphema does occur, argon laser has been attempted to shrink the vessel with varying success. It is important to remind the patient to alert their eye care provider should they notice a change or feel that the vessel is enlarging.

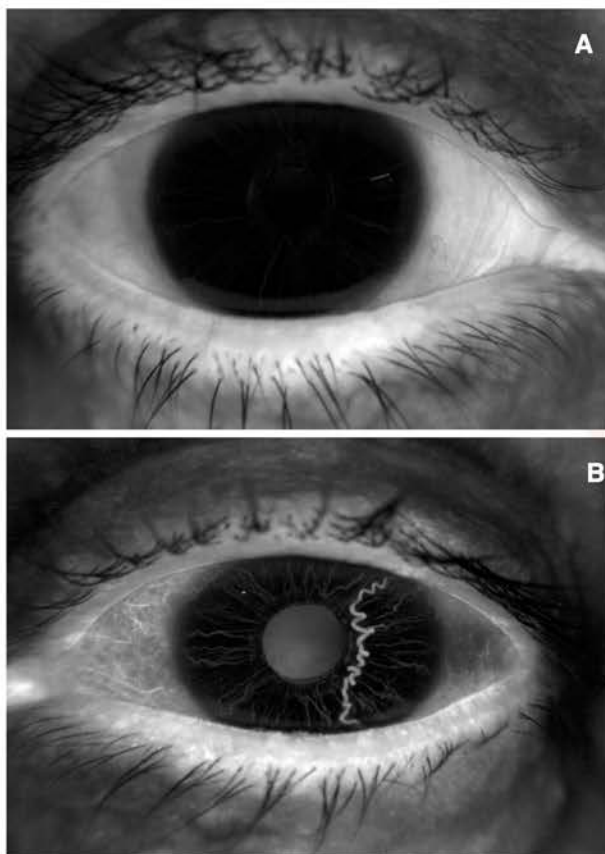


Figure 5: Normal radial iris vessels of the right eye (A) compared to the abnormal iris vessel of the left eye (B).

Take Home Points:

- Iris Racemose Hemangiomas are usually a benign finding and tend to be unilateral.
- In diabetic patients with abnormal iris vessels, neovascularization is important to keep on your differential diagnosis.
- UBM can be a useful tool to reveal any masses on the posterior surface of the iris or ciliary body tumors.
- Fluorescein angiography will highlight abnormal vasculature well and help differentiate from neovascularization.
- Iris Racemose Hemangiomas are better seen in lighter colored irises (blue, green) compared to darker ones (brown).
- Spontaneous hyphemas can develop with these vascular abnormalities, however this is not common.

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