BLOODY BOWTIE

Simultaneous superonasal and superotemporal BRVO.



THE 2nd ANNUAL NIDEK IMAGE OF THE YEAR

Ultra-widefield image of a 57-year-old man demonstrating simultaneous superonasal and superotemporal branch retinal vein occlusion (BRVO) with an unoccluded branch between them.

IMAGE OF THE YEAR



NIDEK is pleased to announce **NIDEK IMAGE OF THE YEAR AWARD 2021**. *Now in its second year, the contest continues with the theme of* **"invisible to visible"** *in highlighting how the Mirante Scanning Laser Ophthalmoscope (NIDEK) helps bring new clarity to important anatomical findings. Based on online voting, eye care professionals from around the world resoundingly selected an image submitted by José Gerardo García-Aguirre, MD, a Professor of Ophthalmology, School of Medicine, Instituto Tecnológico y de Estudios Superiores de Monterrey, and an attending physician at Asociación para Evitar la Ceguera en México, both in Mexico City.*

A 57-year-old man was seen in our clinic for complaints of decreased vision and metamorphopsia in the left eye for 3 weeks. On initial examination, VA was 20/150, and the IOP was 27 mm Hg. Fundus examination revealed optic nerve excavation of 0.9, along with large areas of intraretinal microhemorrhages in the superonasal and superotemporal quadrants, with a space of intact retina between them. Other medical history included a history of uncontrolled systemic arterial hypertension. Multimodal imaging (standard field and ultra-widefield images of the retina, ultra-widefield fluorescein angiography [FA], structural OCT, and OCT angiography) was performed using the Mirante Scanning Laser Ophthalmoscope (NIDEK).

DIAGNOSIS AND TREATMENT

The clinical examination findings and imaging established a diagnosis of simultaneous superonasal and superotemporal BRVO with an unoccluded branch between them. Photographs of the retina were particularly useful in discovering hallmark signs of BRVO, including presence of intraretinal flame-shaped hemorrhages corresponding to a territory of a retinal vein (or in this case, two retinal veins) and presence of cotton-wool spots. Incidentally, this image was taken after performing FA, and the fluorescein is visible as a greenish hue around the affected vessels. In addition, FA demonstrated wide areas of capillary nonperfusion and late perivascular leakage. Structural OCT showed intraretinal and subfoveal fluid, hyperreflectivity of the intermediate retinal layers, and disorganization of retinal inner layers (Figure).

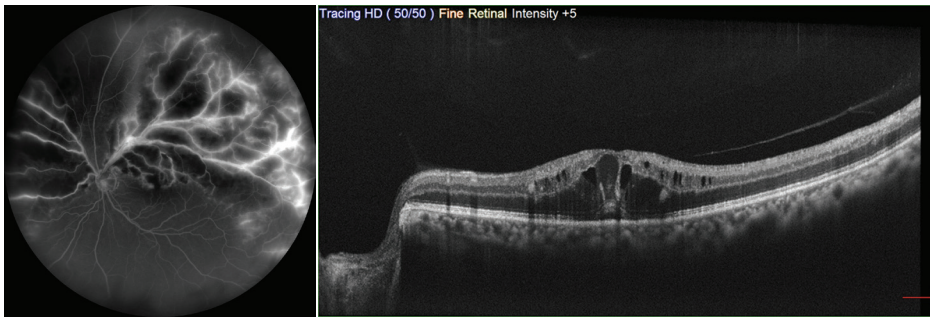


Figure. FA (left) and OCT B-scans (right) depict intraretinal and subfoveal fluid, hyperreflectivity of the intermediate retina layers, and disorganization of retinal inner layers.

As treatment for the BRVO, an anti-VEGF injection was performed at the time of the initial visit, followed by two additional injections given monthly (for a total of three injections). VA improved to 20/80, and the retinal hemorrhages and macular edema were reduced significantly.

In addition, we also noted previously undiagnosed primary open-angle glaucoma in both eyes. The patient was started on a topical combination of timolol and brimonidine twice a day in both eyes to manage ocular hypertension. Finally, the patient was referred to a cardiologist for a consultation regarding the systemic arterial hypertension.

DISCUSSION

The image findings in this study could be misinterpreted as superior hemicentral retinal vein occlusion. However, the presence of an intact area of retina between the two affected areas is indicative of two separate BRVOs, with a peculiar bowtie-like appearance (hence the title of the photograph). The high-resolution photograph available from the Mirante greatly facilitates making this important clinical distinction.

Moreover, the fact that several imaging modalities are available in the same device was quite helpful. In this case, we performed standard field and ultra-widefield photographs of the retina, ultra-widefield FA, structural OCT, and OCT angiography on the Mirante. The use of a single, multimodal device has benefits for clinical efficiency: acquisition times are reduced since the patient did not have to be moved to different devices. From a clinical perspective, each imaging modality provides unique data that add to the examination to aid interpretation and help with decision-making. Having access to multiple modes of imaging helps to confirm the diagnosis and eliminate the potential for conflicting findings that may affect the treatment and management plan. ■

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