



A Healthy 14-Year-Old Male with Blurry Vision in Both Eyes

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Introduction:

A 14 year-old healthy male was referred to our office reporting blurry vision in both eyes for 4 days. In addition, he reports occasional floaters in both eyes.

Exam:

Visual acuity was 20/400 in both eyes. The anterior segment exam was normal, and the anterior chamber was normal. There were no vitreous cells in either eye. The posterior segment exam (Figure 1) featured remarkable perivascular sheathing, mostly venular, in a “frosted branch” appearance. OCT revealed marked bilateral macular edema (Figure 2). Fluorescein angiogram was notable for late perivascular leakage (Figure 1).

Discussion:

A preliminary diagnosis of retinal vasculitis, specifically frosted branch angiitis, was made. The patient was referred to his primary care physician for infectious and laboratory work-up and started on 1mg/kg oral prednisone. One month later, the patient returned and was

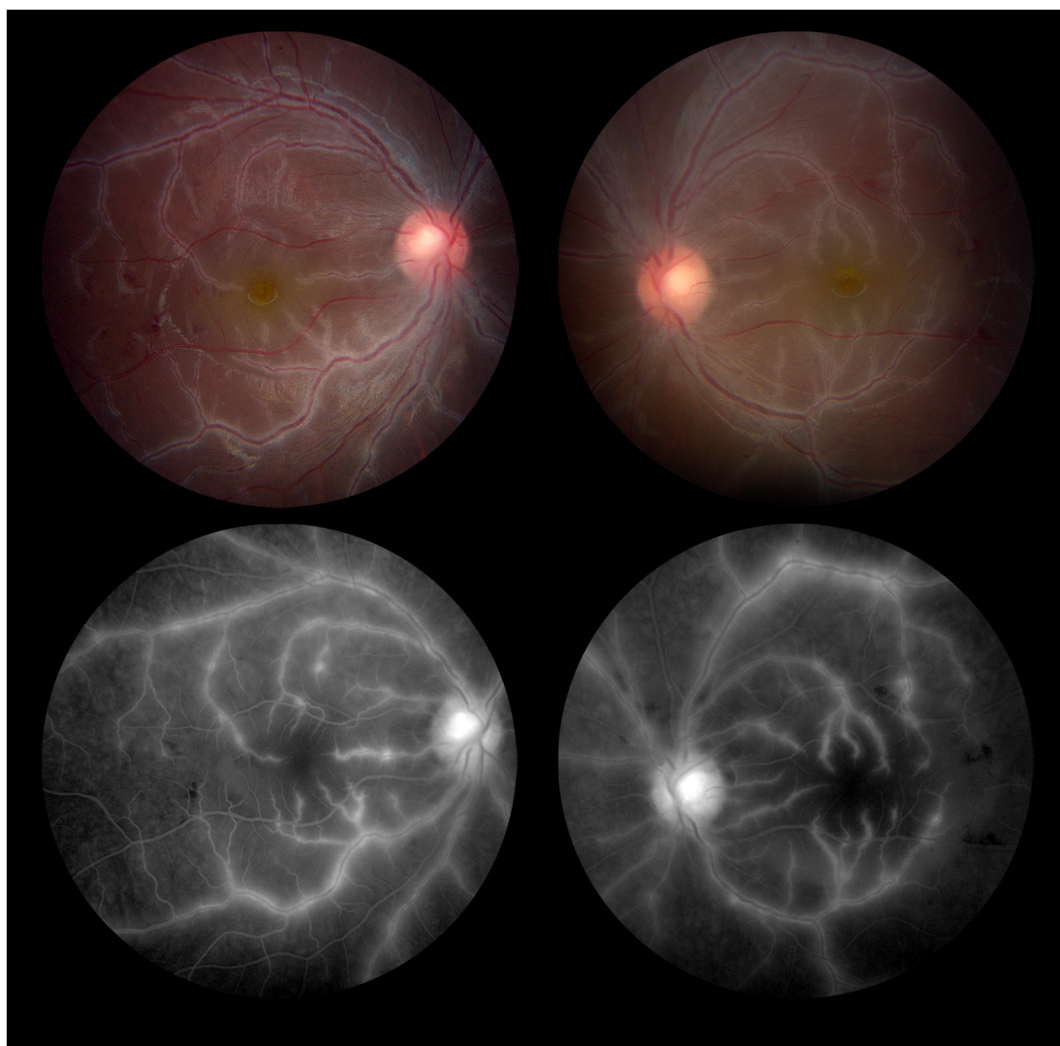


Figure 1: Fundus photos (top) and late FA frames (bottom) show “frosted branch” appearance.

found to have marked resolution of his vascular inflammation (Figure 3) and improving vision, 20/50 OU.

Frosted branch angiitis is a rare clinic entity with striking exam findings. First reported by Ito et al. in 1976, the phenotypic features include marked bilateral vascular sheathing of both retinal arteries and venules, similar to snow on a tree branch¹⁻². The findings generally occur in young healthy individuals with no known medical

history with vision loss presenting as a symptom potentially heralding systemic disease. Visual acuity can range from 20/100 to light perception with patients frequently reporting flashing lights and floaters from associated vitreous inflammation³⁻⁴. In addition to a dilated fundus examination and fundus photography, a fluorescein angiogram (FA) should be done on all patients presenting with this disease entity. An FA characteristically demonstrates late perivascular leakage (veins more than arteries) with no signs of large vessel occlusion. However, there may be signs of capillary non-perfusion or artero-venous anastomoses. The differential diagnosis for this phenotypic finding remains broad and often times is found to be idiopathic after a thorough history and laboratory workup. Nevertheless, several disease processes must be considered in the management of this disease compared to typical retinal vasculitis. Lymphoproliferative disease such as leukemia and lymphoma may present with frosted branch angiitis with lymphoplasmic infiltration into the perivascular space. Viral etiologies such as CMV or HIV retinitis may also present with this phenotypical appearance due to

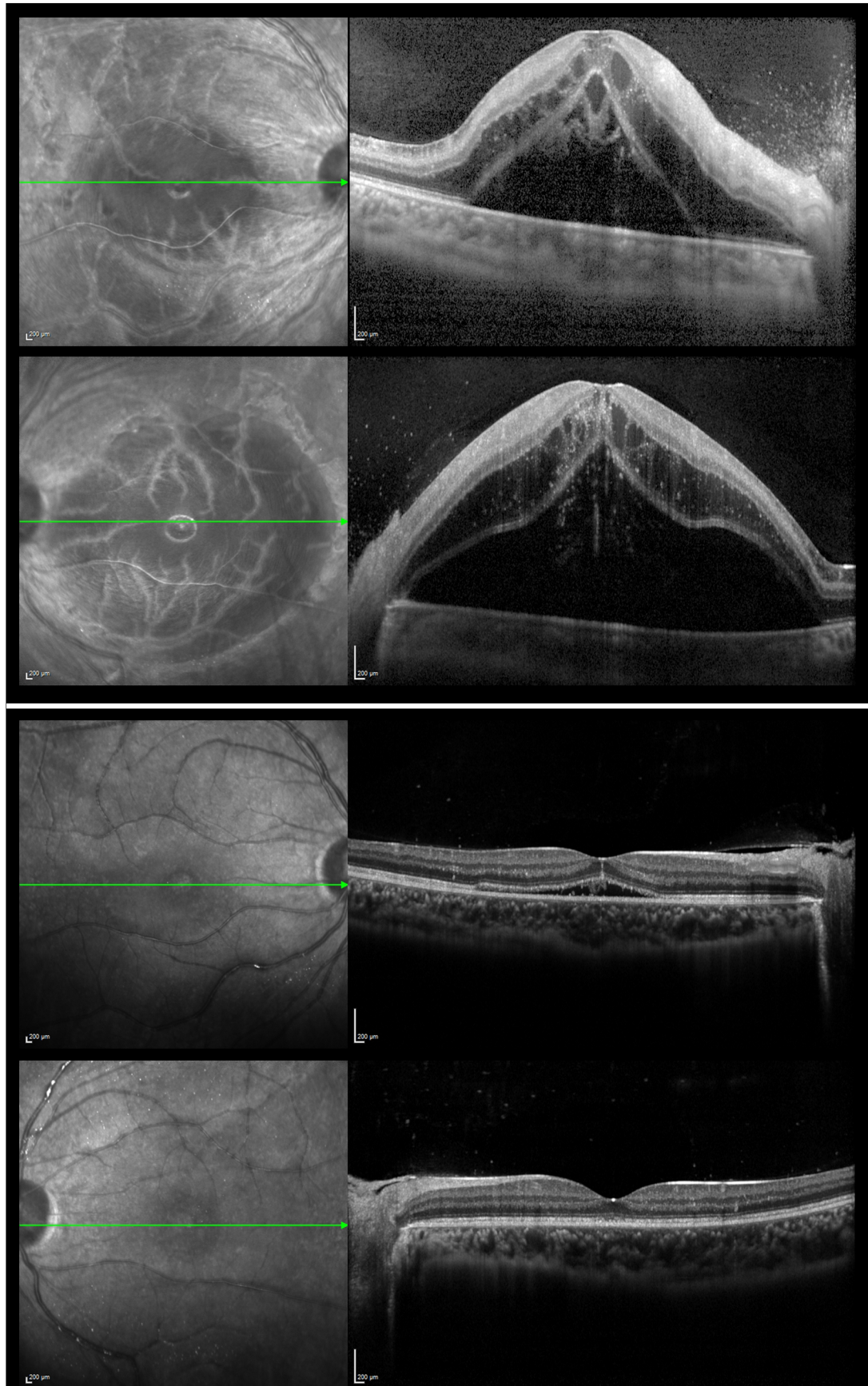


Figure 2: Initial optical coherence tomography (top) revealed bilateral macular edema. Follow-up OCTs one month later (bottom) showed a significant reduction in the inflammation.

immune complex deposition within vascular endothelial cells. Prompt referral to the patient's primary care physician should be undertaken if an underlying systemic disease process is found. Most idiopathic cases, as with our patient, respond well to a short course of systemic corticosteroid therapy. As this disease typically occurs in a younger population, the discussion of systemic side effects with steroid therapy is crucial including weight gain, behavioral changes, acne, and suppression of bone growth if used for a prolonged period.

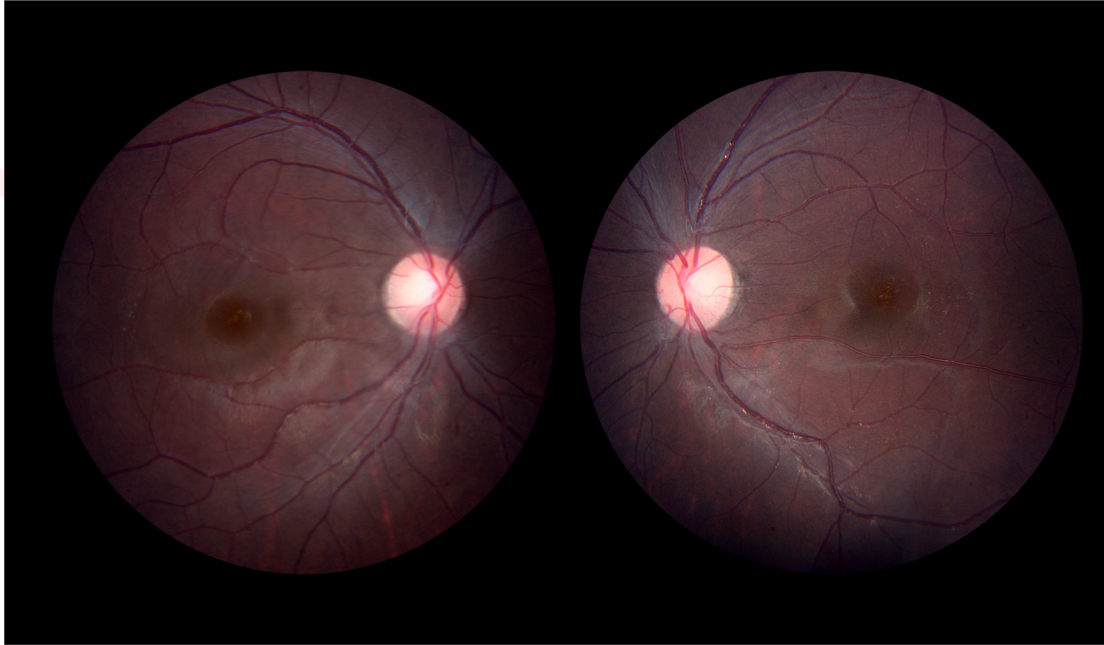


Figure 3: One month follow-up color photos also show marked resolution of vascular inflammation.

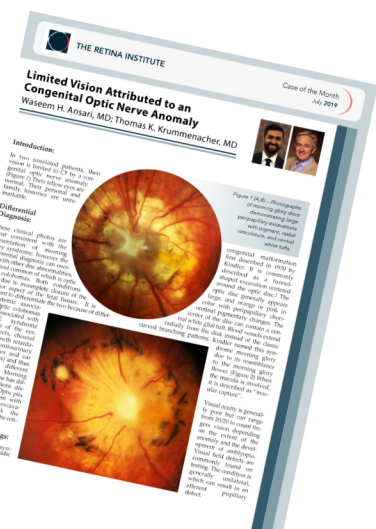
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