

## Leukostasis retinopathy treated with Anti-VEGF therapy

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### 1. Case report

A 48-year-old male otherwise asymptomatic presented to the eye clinic with sudden onset bilateral vision loss. Pertinent history revealed well-controlled Type II Diabetes Mellitus. Visual acuity was Counting Fingers on the right and 20/400 on the left. Intraocular pressure was elevated in both eyes, 54 mmHg in the right and 30 mmHg in the left. Anterior segment examination was remarkable for hyphema, 20% in the right and 10% in the left eye, and neovascularization of the iris was present in both eyes. Posterior segment examination was remarkable for vitreous hemorrhage in the right eye, attenuated vessels in the left eye, and diffuse scattered intraretinal hemorrhages (Fig. 1A) and bilateral macular edema and retinal thickening (Fig. 1B).

The patient reported that his diabetes mellitus was under excellent control and blood work confirmed glycosylated hemoglobin of 5.7. Further blood work revealed a WBC count of 341,000 WBC per microliter. Bone marrow biopsy confirmed chronic myeloid leukemia and the patient was treated with Dasatinib and has responded well to treatment. The patient's visual acuity 20 months after presentation, and after numerous intravitreal Bevacizumab injections, was best corrected to count fingers in the right eye and 20/40 in the left eye. The patient required glaucoma valve implants in both eyes to control intraocular

pressure. The patient developed retinal atrophy in both eyes 20 months after presentation (Fig. 2)

### 2. Discussion

In 1968, the first case of retinal neovascularization was reported in a patient with leukemia.<sup>1</sup> It is believed that the neovascularization occurs as a result of decreased peripheral perfusion and ischemia that results from the hyperviscosity. We are unaware of a report of leukemia with significant anterior segment ischemia combined with retina non-perfusion.

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### Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

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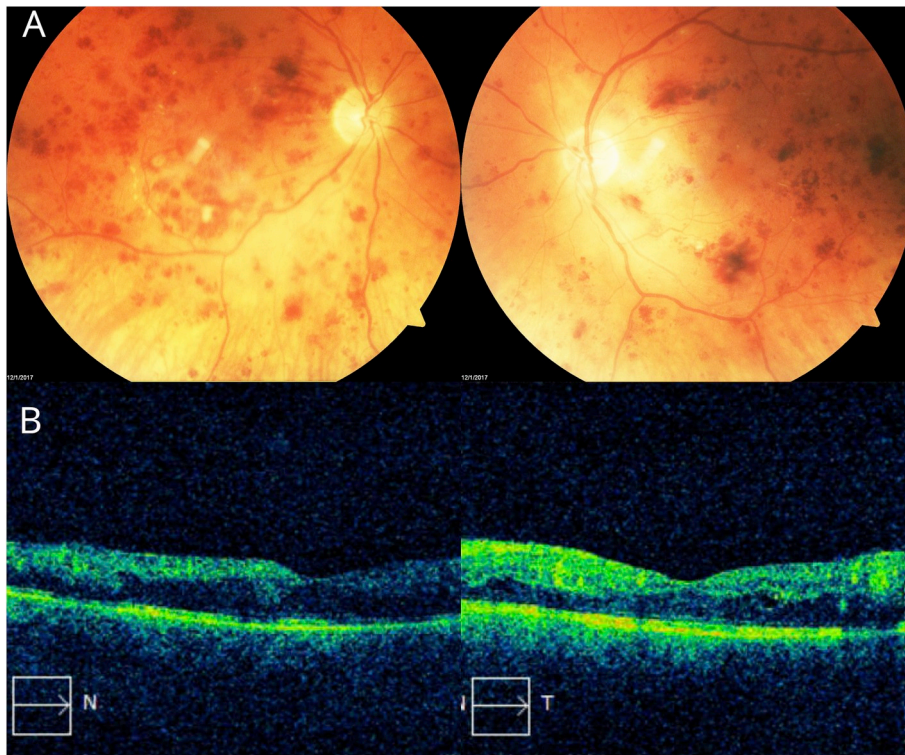


Fig. 1. A) Fundus photo right and left eyes and B) SD-OCT right and left eyes.

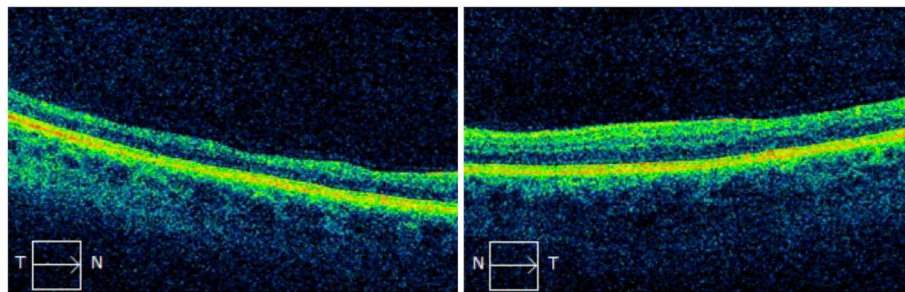


Fig. 2. SD-OCT right and left eye 20 months after anti-VEGF treatment.

**Declaration of competing interest**

The following authors have no financial disclosures: N.S., S.H.C.

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**Appendix A. Supplementary data**

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ajoc.2020.100677>.

**Reference**

1. Duke JR, Wilkinson CP, Sigelman S. Retinal microaneurysms in leukaemia. *Br J Ophthalmol.* 1968;52:368–374.