

Leukemic Retinopathy

Category(ies): Retina, Vitreous

Contributor: [Eric Chin MD](#)

Photographer: Cindy Montague, CRA and Brice Critser, CRA



Retinopathy associated with leukemia typically occurs in acute disease.

Patients may develop dilation, tortuosity, and beading of the retinal veins; vascular sheathing; cotton-wool spots; flame-shaped hemorrhages; Roth spots; sub-hyaloid and sub-internal limiting membrane hemorrhages. These changes are similar to those seen with severe anemia.

A 60-year-old female was referred for bilateral retinal hemorrhages. She noticed blurry since two months prior when she hit her head. She said her right eye gradually improved, but the left eye remained poor. She was told that this may be related to her blood pressure, but it was found to be normal (i.e. 118/70). She had a past ocular history of myopia, and a past medical history of hypertension.

BCVA with correction:

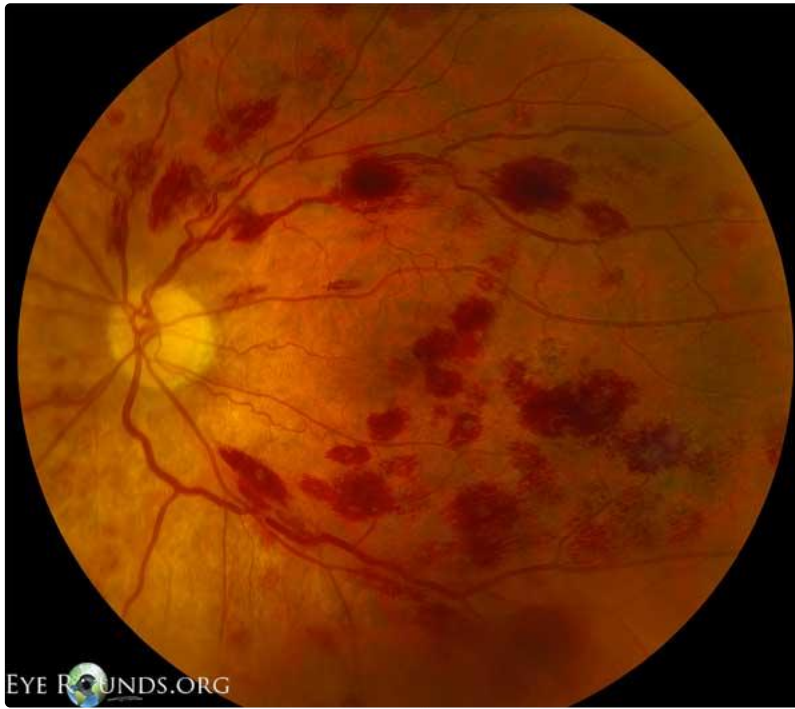
- OD: 20/125
- OS: 20/40

IOP: OD 13; OS 14

SLE: anterior segment unremarkable; 1+ NS OU; no AC cells; no vitreous cells



Image 1



EYE ROUNDS.ORG

Image 2: OS: many central and paracentral superficial hemorrhages, some with a white center (ie Roth spots); no cystoid macular edema

[Enlarge](#) [Download](#)

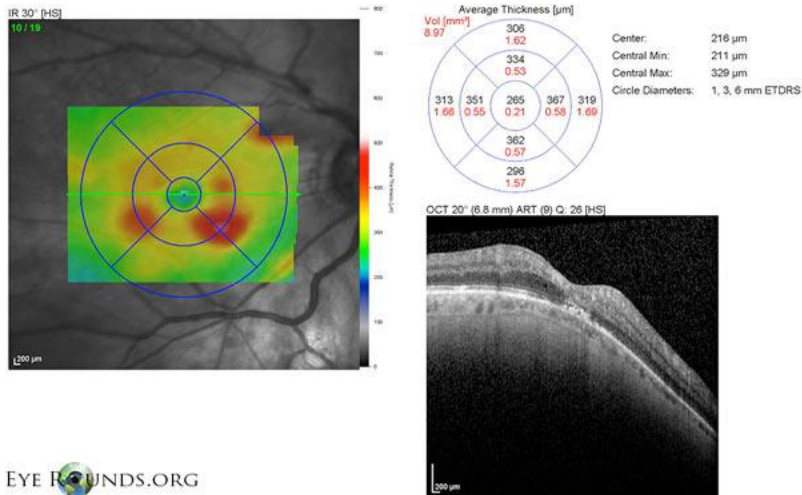


Image 3: OCT OD: irregularities of outer retinal layer in the fovea with scant patchy areas of inner retinal edema and opacifications

[Enlarge](#) [Download](#)

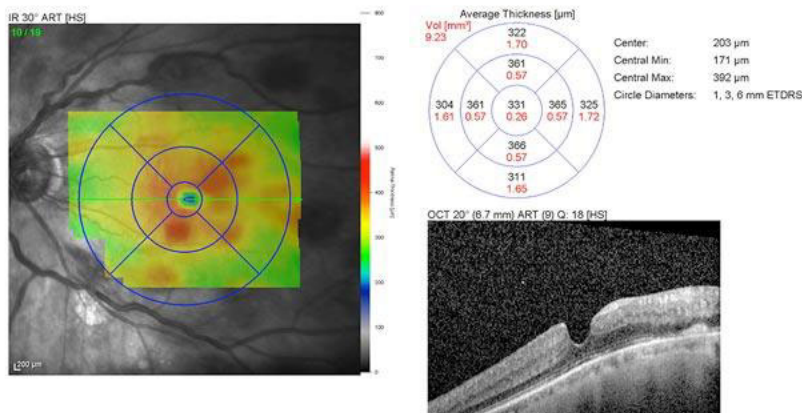




Image 4: OCT OS: early lamellar hole; scattered patchy areas of inner retinal opacifications in the parafoveal region

[Enlarge](#) [Download](#)

The patient presented with bilateral retinal hemorrhages and scattered Roth spots. A fluorescein angiogram was done which ruled out retinal venous occlusions and showed no evidence of vasculitis.

Upon further history, she reported mild fatigue and bruising on the upper and lower extremities for the past few weeks.

CBC, ESR, CRP, ANA were ordered, significant for the following:

WBC: 354.1 (normal 3.7-10.5)

RBC: 2.37 (normal 4-5.20)

Hb: 7.3 (normal 11.9-15.5)

Hct: 22 (normal 35-47%)

Plt: 81 (normal 150-400)

BP was checked in the clinic: 129/66

Patient was immediately referred to the hematology and oncology service. She was diagnosed with leukocytosis consistent with chronic myeloid leukemia, later found to be positive for the Philadelphia (Ph+) chromosome.

She was started on chemotherapy, and her follow-up fundus photos are shown below.



Images 5-8

[Enlarge](#) [Download](#)





Images 5-8

[Enlarge](#) [Download](#)



Images 5-8

[Enlarge](#) [Download](#)





Images 5-8

 [Enlarge](#)

 [Download](#)

Image Permissions:



Ophthalmic Atlas Images by [EyeRounds.org](#), [The University of Iowa](#) are licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](#).

Address

University of Iowa
Roy J. and Lucille A. Carver College
of Medicine
Department of Ophthalmology and
Visual Sciences
200 Hawkins Drive
Iowa City, IA 52242

[Support Us](#)

Legal

Copyright © 2019 The University of
Iowa. All Rights Reserved
[Report an issue with this page](#)
[Web Privacy Policy](#) |
[Nondiscrimination Statement](#)

Related Links

[Cataract Surgery for Greenhorns](#)
[EyeTransillumination](#)
[Gonioscopy.org](#)
[Iowa Glaucoma Curriculum](#)
[Iowa Wet Lab](#)
[Patient Information](#)
[Stone Rounds](#)
[The Best Hits Bookshelf](#)

EyeRounds Social Media

Follow



Receive notification of new cases,
[sign up here](#)
[Contact Us](#)
[Submit a Suggestion](#)