


# Case of HIV presenting as retinal artery occlusion with further complications of Burkitt's lymphoma and CMV retinitis

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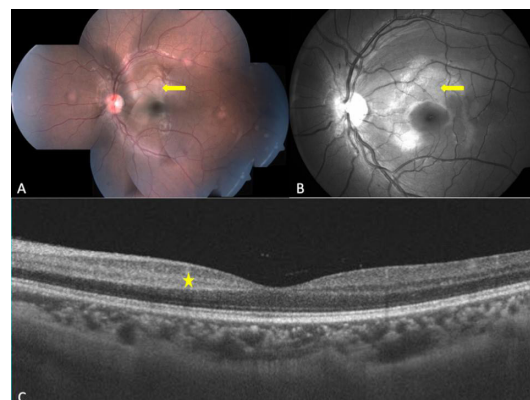
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## DESCRIPTION

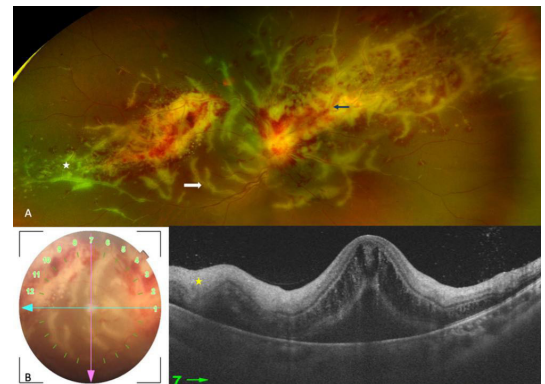
An early adolescent girl presented to our retina service following a sudden diminution of vision in her left eye 3 days earlier. Her right eye best-corrected visual acuity (BCVA) was 20/20 and her left was 20/25. Her intraocular pressures were normal. Anterior segment examination of both eyes was unremarkable. Fundus examination of the left eye revealed retinal whitening superior to the fovea with few dot blot and flame-shaped haemorrhages at the posterior pole. The right retina was normal. Ocular coherence tomography of the left eye showed corresponding hyper-reflectivity localised to the inner plexiform and inner nuclear layers superior to the fovea with a normal arm-to-retina time on fundus fluorescein angiogram (figure 1).

A working diagnosis of branch retinal artery occlusion (BRAO) was made. Given her age, the nature of the presentation and having denied any systemic comorbidities, she was further investigated for possible vascular disorders, hypercoagulable states and autoimmune diseases. The only abnormal result was an erythrocyte sedimentation rate of 70 mm/hour. We elected to monitor her, but she missed her follow-ups.

After 2 years, she returned with a sudden drop in vision in her right eye. Examination revealed a right BCVA of counting fingers and a left of 20/20. Her right eye anterior segment

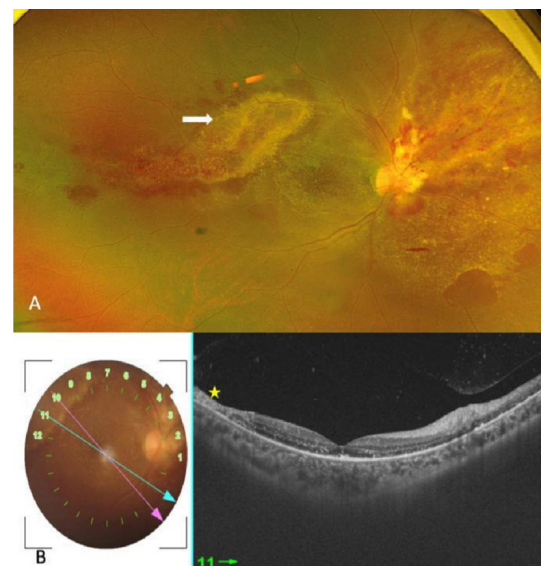


**Figure 1** (A) Left eye fundus image shows retinal whitening superior to the fovea (yellow arrow) with a few dot haemorrhages at the posterior pole. (B) Red free image of the left eye demarcating the area of retinal whitening (yellow arrow) and retinal haemorrhages. (C) Optical coherence tomography image of the left eye showing corresponding hyper-reflectivity of the inner plexiform and inner nuclear layers superior to the fovea.



**Figure 2** (A) Optos fundus image of the right eye shows mixed pattern cytomegalovirus retinitis characterised by fulminant retinitis (black arrow), granular variant (white star) and frosted branch angiitis (white arrow). (B) Optical coherence tomography image showing nebulous pattern vitritis along with full thickness retinitis (yellow star) and cystoid macular oedema.

was normal. There were more than two cells in the right anterior vitreous. Fundus examination of the right eye showed disc oedema with full



**Figure 3** (A) Optos fundus image of the right eye showing resolution of the retinitis (white arrow) with residual retinal atrophy and thinning as seen at 1-month follow-up. (B) Corresponding optical coherence tomography showing residual retinal atrophy (yellow star).



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## Images in...

thickness mixed pattern cytomegalovirus (CMV) retinitis with vasculitis while the left eye was normal (figure 2). On further probing, she revealed seropositivity with HIV for the past 2 years and was currently on EPOCH-R protocol (rituximab, etoposide phosphate, prednisone, vincristine sulfate (Oncovin), cyclophosphamide, and doxorubicin hydrochloride (hydroxydaunorubicin)} for Burkitt's lymphoma and highly active anti-retroviral therapy (HAART). Thus, with a clinical diagnosis of CMV retinitis, the patient was started on an induction dose of oral valganciclovir 900 mg two times per day and two times per week intravitreal ganciclovir injection (2.5 mg/0.1 mL). This resulted in a rapid resolution of her retinitis, leaving retinal atrophy and thinning in the areas of previous fulminant retinitis over 1 month (figure 3). The BCVA during her visit 8 months after presenting as CMV retinitis was 20/80 in the right eye and 20/20 in the left eye. We did not consider testing for HIV during the initial presentation of focal retinal artery occlusions. However, in retrospect we believe testing for HIV should be part of investigations for a case of focal retinal artery occlusions in young adults.

### Patient's perspective

I consulted for retina services following sudden diminution of vision in the left eye. I was told the condition in the right eye was acute in nature and was advised further systemic investigations to diagnose the cause for the same. Having diagnosed with seropositivity and viral retinitis on follow-up, I was treated with oral and intravitreal injections following with my vision improved and stabilised.

### Learning points

- ▶ Branch arterial occlusion as a sole presenting feature of HIV is a possibility.
- ▶ Young adults presenting with focal arterial occlusions should be tested for HIV.
- ▶ Mixed pattern retinitis can be noted in eyes with cytomegalovirus (CMV) retinitis with immunosuppression.
- ▶ Prolonged follow-ups are often needed in cases of HIV, wherein HIV retinopathy, vascular occlusion and infections such as CMV in our case are possible.

Arterial occlusions in young adults are rare with the aetiology predominantly being autoimmune diseases, hypercoagulable states or trauma.<sup>1 2</sup> In the present HAART era, HIV microvasculopathy is noted only in treatment-naïve patients or those with or patients with low CD4+ counts.<sup>3</sup> We hypothesise that the BRAO in our patient could have been due to elevated levels of circulating immune complexes and immunoglobulins in the background of retropositivity, thereby causing increased erythrocyte aggregation and blood stasis.<sup>4</sup> HIV as an underlying aetiology, being missed primarily, was only diagnosed when she developed Burkitt's lymphoma.

Our patient presented with a mixed pattern retinitis with infiltrative disc oedema on follow-up showcasing all three clinical variants simultaneously. To the best of our knowledge, such a presentation has never been reported. Optical coherence tomography showed a full-thickness retinitis pattern with a nebulous pattern of vitritis which resolved on treatment.<sup>5</sup>

In conclusion, we report this case to highlight that occlusive vasculopathy in HIV, although rare, might be the only ocular presenting sign of HIV. CMV retinitis can lead to acute vision loss during the course of HIV and/or secondary to medications for Burkitt's lymphoma.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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### REFERENCES

- 1 Ward M, Etzel J, Sauerzopf S, et al. Retinal artery occlusions and risk factors in the young. *Invest Ophthalmol Vis Sci* 2021;62:3200.
- 2 Zahavi A, Rosenblat I. Traumatic central retinal artery occlusion: case report and review of the literature. *J J Clin Case Rep* 2015;1.
- 3 Sudharshan S, Nair N, Curi A, et al. Human immunodeficiency virus and intraocular inflammation in the era of highly active anti retroviral therapy-an update. *Indian J Ophthalmol* 2020;68:1787–98.
- 4 Engstrom RE, Holland GN, Hardy WD, et al. Hemorheologic abnormalities in patients with human immunodeficiency virus infection and ophthalmic microvasculopathy. *Am J Ophthalmol* 1990;109:153–61.
- 5 Invernizzi A, Agarwal A, Ravera V, et al. Optical coherence tomography findings in cytomegalovirus retinitis: a longitudinal study. *Retina* 2018;38:108–17.

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