Case Lesson 48-2026

Central Retinal Vein Occlusion in a Young Adult

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Introduction:

Acute visual loss in young individuals is a very rare condition that may initially be misinterpreted as neurological or functional pathology. Careful clinical history and targeted ocular examination are essential to ensure accurate and timely diagnosis as Central Retinal Vein Occlusion (CRVO).Both arterial and venous central retinal occlusion are conditions more common in ophthalmology patients.

Case Presentation: A 25-year-old female presented with a sudden morning, painless blurred vision in the left eye with fluctuation during the same day. The patient had no past medical history.Her left eye vision remained blurred over the week.Three independent ophthalmologic evaluations were inconclusive and the patient was recommended to have a brain MRI which was normal.Neurological evaluation was normal considering it as suspected Multiple Sclerosis debut and suggested methylprednisolone for five days.A professor of ophtalmology oriented the patient one month later to the neurosurgeon.

A sudden monocular blurred vision in a young woman persisting without inflammatory immune disease,or venous events considered in good health after four unexplained causes from four expermented ophthalmologists was bizarre with a normal brain orbit MRI.A carefull anamnesis suggested a central venous occlusion. Revisiting his FO retina hemorrhagic events were evident (fig1) and the patient was sent back to another ophthalmologist with the target question,Is it an occlusion of the centralis retinae vein?

He confirmed the diagnosis of CRVO.

The panel of examinations followed;

- Thrombophilia screening (e.g., Factor V Leiden mutation)

- Evaluation for antiphospholipid syndrome
- Autoimmune screening (including systemic lupus erythematosus)
- Assessment of hypercoagulable states
- HLA-B51 testing

A carotid US Doppler was considered normal

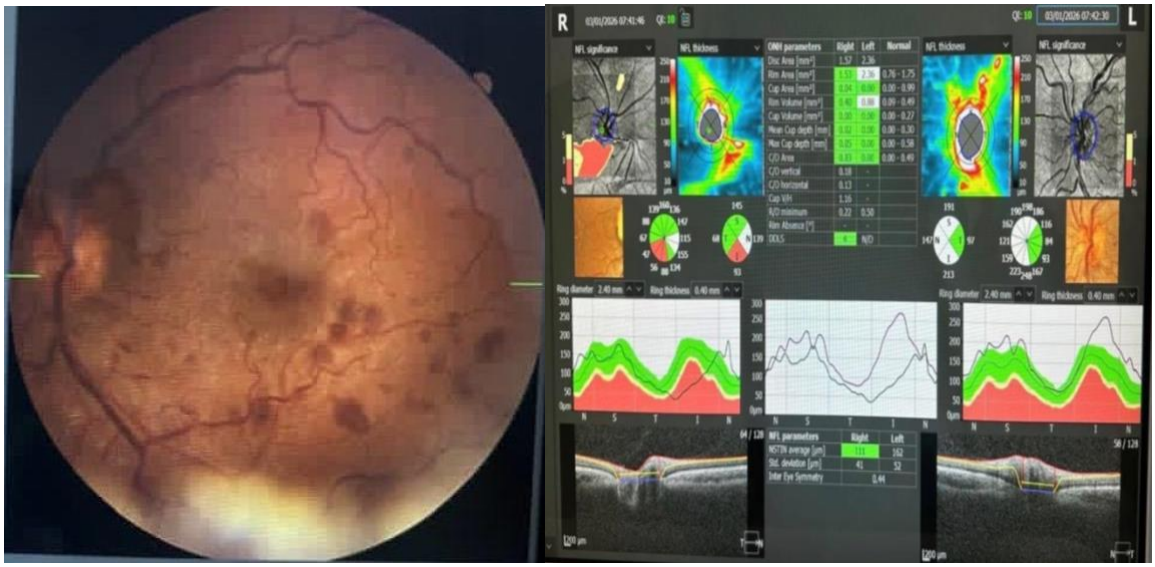

Fig 1: Dilated and tortuous retinal veins with diffuse intraretinal hemorrhages, findings highly suggestive of central retinal vein occlusion.

Discussion: CRVO results from obstruction of the central retinal vein, leading to impaired venous drainage, retinal ischemia, hemorrhage, and macular edema [3]. Its pathogenesis is explained by Virchow's triad, involving endothelial damage, venous stasis, and hypercoagulability [6]. Although CRVO predominantly affects individuals over the age of 50, its presence in younger patients needs a comprehensive search for underlying systemic etiologies [2,6]. In the present case, the acute onset of visual loss combined with characteristic fundoscopic findings clearly differentiates CRVO. In younger individuals, CRVO has been associated with inherited and acquired thrombophilic disorders, autoimmune diseases such as systemic lupus erythematosus and antiphospholipid syndrome, and hypercoagulable states [4,6]. Additional contributing factors may include oral contraceptive use, smoking, and dehydration, particularly in younger populations [6]. The normal MRI and neurological examination help exclude central nervous system causes of visual impairment, while a normal carotid Doppler study reduces the likelihood of embolic or ocular ischemic pathology. This case underscores the importance of recognizing acute visual loss as a clinical emergency, performing a detailed fundoscopic examination, and initiating a systematic and multidisciplinary etiological work-up in young patients presenting with CRVO.

Conclusion: CRVO in young adults is an uncommon but clinically significant condition that requires high diagnostic vigilance. This case underscores that acute visual loss should always

be treated as an emergency. Careful clinical history taking and fundoscopic examination are crucial for this diagnosis. Early recognition and targeted investigation are fundamental to identifying underlying systemic conditions and preventing further complications. [2,4,6]

References:

1. Flaxel CJ, Adelman RA, Bailey ST, et al. Retinal Vein Occlusions Preferred Practice Pattern®. Ophthalmology. 2023.
2. Rehak J, Rehak M. Retinal vein occlusion in younger patients. Eye (Lond). 2022.
3. Kolar P. Risk factors for central and branch retinal vein occlusion: a meta-analysis. Ophthalmologica. 2022.
4. Scott IU, VanVeldhuisen PC, Ip MS, et al. Management of retinal vein occlusion-related complications. JAMA Ophthalmol. 2023.
5. Laouri M, Chen E, Looman M, Gallagher M. The burden of disease of retinal vein occlusion. Clin Ophthalmol. 2021.
6. Pichi F, Shah VA, Tripathy K, Gill MK, Hsu J, Lim JI. Central Retinal Vein Occlusion. EyeWiki. American Academy of Ophthalmology; updated August 28, 2025