



Complete Anatomical Resolution of Massive Subhyaloid Hemorrhage Secondary to Proliferative Diabetic Retinopathy Following

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Abstract

A 27-year-old man with poorly controlled type 1 diabetes presented with sudden, painless visual loss. Fundus examination revealed a large premacular preretinal hemorrhage in the setting of proliferative diabetic retinopathy. Optical coherence tomography confirmed a dome-shaped subhyaloid hemorrhage located between the internal limiting membrane and posterior hyaloid. Intravitreal anti-VEGF therapy was administered. At two-month follow-up, complete anatomical resolution was observed on OCT with significant visual improvement.

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Introduction

Proliferative Diabetic Retinopathy (PDR) represents an advanced stage of diabetic retinal disease characterized by retinal ischemia-induced neovascularization. Fragile neovascular complexes are prone to rupture, leading to vitreous or preretinal hemorrhage. When blood accumulates between the posterior hyaloid and the Internal Limiting Membrane (ILM), a subhyaloid hemorrhage forms, often presenting as a well-demarcated premacular dome-shaped lesion.

Case presentation

A 27-year-old male with a 15-year history of type 1 diabetes mellitus presented with sudden, painless decreased vision in his right eye. His medical history was significant for poor glycemic control and irregular ophthalmologic follow-up.

Clinical examination revealed markedly reduced best-corrected visual acuity in the affected eye. The anterior segment was unremarkable. Fundus examination showed a large dome-shaped preretinal hemorrhage involving the posterior pole and active neovascularization consistent with proliferative diabetic retinopathy. No tractional retinal detachment was observed.

Spectral-domain OCT demonstrated a hyperreflective preretinal collection located between the ILM and posterior hyaloid with multiple punctiform echoes, confirming the subhyaloid component. The underlying retinal layers were relatively preserved.



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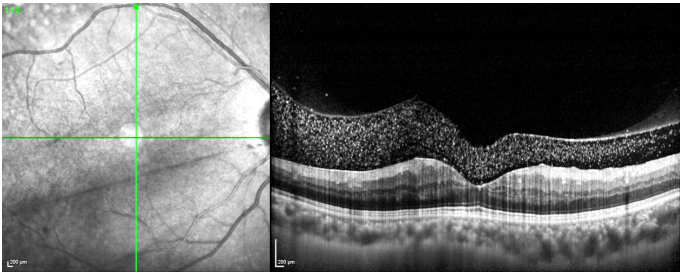


Figure 1: Spectral-domain Optical Coherence Tomography (OCT) at baseline. OCT scan demonstrating a hyperreflective pre-retinal collection located between the Internal Limiting Membrane (ILM) and the posterior hyaloid. The lesion exhibits a dome-shaped convex configuration with multiple punctiform hyperreflective echoes, confirming the subhyaloid component of the hemorrhage. The underlying retinal architecture appears relatively preserved.

Management and outcome

Intravitreal anti-VEGF therapy was initiated as first-line treatment. The patient was closely monitored, and surgical intervention was considered if no improvement occurred. After completion of an induction regimen, OCT at two months demonstrated complete resolution of the hemorrhage with restoration of normal foveal contour and significant visual improvement.

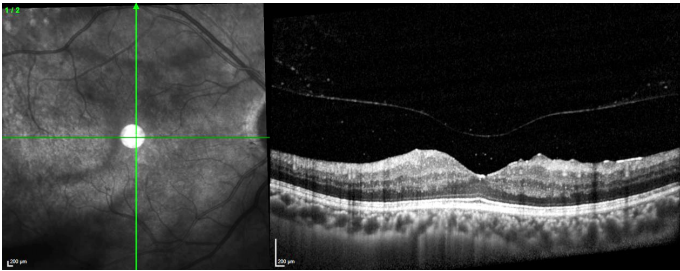


Figure 2: Spectral-domain OCT at two-month follow-up after anti-VEGF therapy. Complete resolution of the preretinal/subhyaloid hemorrhage is observed with restoration of normal foveal contour. No residual traction or structural macular damage is detected.

Discussion

Subhyaloid hemorrhage in PDR results from rupture of fragile neovascular vessels along the vitreoretinal interface. OCT is critical for distinguishing subhyaloid from sub-ILM hemorrhage and for guiding management. Anti-VEGF therapy reduces VEGF-driven neovascular activity and may facilitate spontaneous hemorrhage resorption, potentially avoiding early vitrectomy in selected patients.

Conclusion

Massive subhyaloid hemorrhage is a vision-threatening complication of proliferative diabetic retinopathy. OCT is essential for diagnosis and follow-up. Intravitreal anti-VEGF therapy may represent an effective initial treatment option in selected cases.

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