

Severe Hypertensive Retinopathy Presenting as Bilateral Vision Loss Patient Presentation

Pooja Kanodia¹, Nishant Kanodia², Rahul³, Khushboo Singhal⁴

¹Department of Ophthalmology, Prasad Institute of Medical Sciences, Lucknow, UP, India

²Department of Medicine, Hind Institute of Medical Sciences, Lucknow, UP, India

³Senior Consultant & Vitreoretinal Surgeon, Star Eye Hospital, Lucknow, UP, India

⁴Department of Physiology, Subharti Medical College, SVSU, Meerut, UP, India

ABSTRACT

Background: The retina provides a unique *in-vivo* diagnostic window into systemic microvasculature. Severe hypertensive retinopathy is a critical prognostic indicator for acute target-organ damage and signifies a high risk for life-threatening cardiovascular and cerebrovascular events.

Case Presentation: A 48-year-old male presented with a two-month history of progressive, painless bilateral vision loss and frequent morning headaches. Clinical examination revealed a significantly elevated blood pressure of 210/120 mmHg and reduced visual acuity (20/40 OD, 20/60 OS). Dilated funduscopy demonstrated classic signs of severe hypertensive retinopathy, including widespread arteriolar narrowing, flame-shaped hemorrhages, cotton-wool spots, and mild optic disc edema.

Management and Outcome: The presence of optic disc swelling and severe hypertension prompted immediate referral to the emergency department for a hypertensive emergency. The patient was treated with a carefully titrated intravenous antihypertensive regimen. At a 3-month follow-up, his blood pressure was well-controlled on oral medications, visual acuity improved to 20/25 bilaterally, and fundoscopic examination revealed complete resolution of the retinal hemorrhages and cotton-wool spots.

Conclusion: This case highlights the critical importance of routine fundoscopic evaluation in patients with undiagnosed, or poorly controlled hypertension presenting with visual disturbances. Rapid recognition of severe hypertensive retinopathy and immediate medical intervention can successfully reverse visual deficits and mitigate severe systemic morbidity.

doi: 10.61081/htnj/26v12i206

INTRODUCTION

A 48-year-old male presented to the primary care clinic complaining of a progressive, painless decline in his vision over the past two months. He noted that his vision occasionally “went blank” while reading. He reported frequent morning headaches but denied any focal neurological deficits, chest pain, shortness of breath, or a prior history of ocular disease.

Clinical Findings

Upon initial examination, his visual acuity was reduced to 20/40 in the right eye and 20/60 in the left eye. Vital signs revealed a

significantly elevated blood pressure of 210/120 mmHg.

Fundoscopic Examination

Dilated fundus examination revealed classic signs of severe hypertensive retinopathy in both eyes. The findings included:

- Widespread arteriolar narrowing and arteriovenous (AV) nicking.
- Multiple flame-shaped retinal hemorrhages.
- Scattered cotton-wool spots (areas of retinal ischemia).
- Mild optic disc edema in the left eye, raising concern for malignant hypertension.

Corresponding author

Khushboo Singhal (khushboosinghal10@gmail.com)

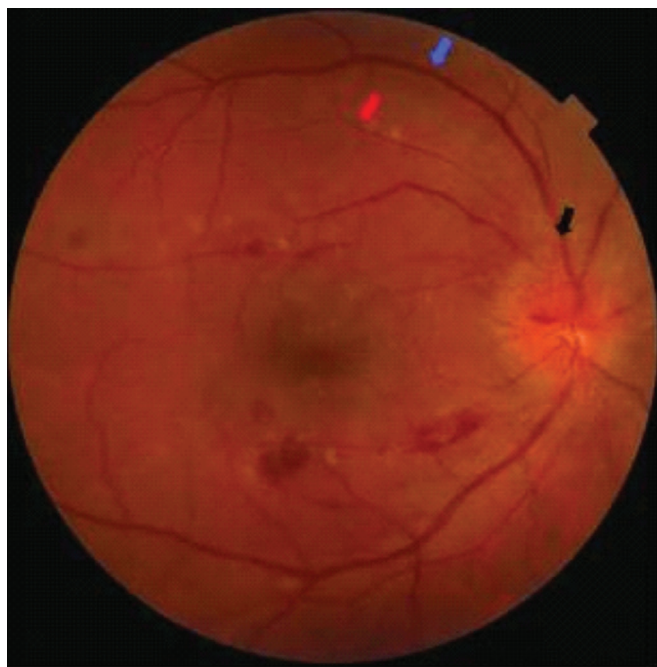


Figure 1: Fundus photo of patient.

Diagnostic Assessment

The eye is the only organ where changes in blood vessels due to systemic hypertension can be studied *in-vivo*. The presence of moderate to severe hypertensive retinopathy correlates strongly with uncontrolled blood pressure and poses a significant risk for systemic cardiovascular and cerebrovascular events.¹

Grading the retinopathy is crucial for risk assessment; severe hypertensive retinopathy (characterized by hemorrhages, exudates, and papilledema) is a well-established prognostic indicator for end-organ damage. Specifically, patients presenting with hypertensive retinopathy exhibit a significantly higher overall risk for stroke, necessitating routine screening and emergent systemic management.² The pathophysiology involves the breakdown of the blood-retinal barrier and subsequent necrosis of smooth muscle and endothelial cells.³

Management and Outcome

Given the presence of optic disc swelling and markedly elevated blood pressure, the patient was immediately referred to the emergency department for hospital-based care to manage hypertensive emergency.¹ He was admitted and started on a carefully titrated intravenous antihypertensive regimen to lower his blood pressure safely over 24 to 48 hours, preventing ischemic damage to the brain and kidneys.

At a 3-month follow-up, his blood pressure was well-controlled on oral antihypertensive medications. His visual acuity improved to 20/25 in both eyes, and a repeat fundoscopic exam showed the complete resolution of the cotton-wool spots and retinal haemorrhages.

CONCLUSION

This case of severe hypertensive retinopathy underscores the critical importance of routine fundoscopic evaluation in patients presenting with visual disturbances and undiagnosed or poorly controlled hypertension. The retina serves as a unique diagnostic window into the systemic microvasculature, where clinical signs such as flame hemorrhages, cotton-wool spots, and papilledema are not merely ocular findings, but ominous indicators of acute target-organ damage.

Rapid recognition of these retinal changes is paramount; it immediately shifts the clinical paradigm from routine hypertension management to hypertensive emergency. As demonstrated in this case, timely identification and immediate referral for carefully titrated, intravenous blood pressure reduction can reverse visual deficits and, more importantly, mitigate the high risk of life-threatening cardiovascular, cerebrovascular, and renal events. Ultimately, this highlights the necessity for seamless collaboration between primary care, ophthalmology, and emergency medicine to ensure rapid intervention and prevent irreversible systemic morbidity.

REFERENCES

1. Kosteva K, Kaufman EJ, Kinch A. Case report: The role of hypertension retinopathy graduation in the management of systemic cardiovascular disease. *J Family Med Prim Care*. 2024 Feb;13(2):787-791. doi: 10.4103/jfmpc.jfmpc_1772_22. Epub 2024 Mar 6. PMID: 38605783; PMCID: PMC11006077.
2. Wang Z, Feng L, Wu M, Ding F, Liu C, Xie G, Ma B. Hypertensive retinopathy can predict stroke: A systematic review and meta-analysis based on observational studies. *J Stroke Cerebrovasc Dis*. 2024 Nov;33(11):107953. doi: 10.1016/j.jstrokecerebrovasdis.2024.107953. Epub 2024 Sep 1. PMID: 39227002.
3. Wong TY, Mitchell P. Hypertensive retinopathy. *N Engl J Med*. 2004 Nov 25;351(22):2310-7. doi: 10.1056/NEJMra032865. PMID: 15564546.

How to cite this article: Kanodia P, Kanodia N, Rahul, Singhal K. Severe Hypertensive Retinopathy Presenting as Bilateral Vision Loss Patient Presentation. *Hypertens J*. 2026;12(2): 78-79

Source of support: Nil, **Conflicts of interest:** None