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Case Report

# Bilateral acute herpetic viral retinitis: A rare case report

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## Abstract

Herpetic viral retinitis, which includes acute retinal necrosis (ARN) and progressive outer retinal necrosis (PORN), is a rare but devastating vision-threatening condition caused primarily by herpes simplex virus (HSV) and varicella-zoster virus (VZV). It is characterized by necrotizing retinitis, often beginning in the peripheral retina and progressing centrally. Unlike uveitic or diabetic macular edema, macular edema and neurosensory detachment are uncommon due to the predominance of ischemic necrosis and vascular occlusion over exudation. A 20-year-old male presented with defective vision in both eyes for one week. His vision loss was gradual and associated with mild pain. Examination revealed hand movement (HM+) vision in the right eye and 6/36 vision in the left eye, improving to 6/24 with pinhole correction. Fundoscopic findings included retinal necrosis, splinter hemorrhages, and macular edema. Spectral domain OCT showed neurosensory detachment and cystic spaces. The TORCH profile was positive for herpes virus IgM and IgG. Treatment with intravenous acyclovir followed by oral acyclovir and steroids resulted in significant visual improvement (6/9 in the right eye, 6/6 in the left eye) after one month. Macular edema and neurosensory detachment are rare in herpetic viral retinitis because the primary pathological mechanism is retinal necrosis rather than inflammatory leakage or choroidal dysfunction. Most cases of vision loss are due to retinal ischemia, vascular occlusion, or rhegmatogenous retinal detachment rather than macular swelling or subretinal fluid accumulation.

**Keywords:** Herpetic viral retinitis, Retinal necrosis, Neurosensory detachment, TORCH profile, Acyclovir, Steroids.

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## 1. Introduction

Herpetic viral retinitis is a spectrum of viral retinal infections, most notably acute retinal necrosis (ARN), progressive outer retinal necrosis (PORN), and cytomegalovirus (CMV) retinitis. ARN, the most common among immunocompetent patients, presents with retinal arteritis, necrotizing retinitis, often beginning in the peripheral retina and progressing centrally,[1,2] vitritis, and high risk of retinal detachment.[3] Prompt clinical suspicion and immediate antiviral therapy are crucial, as visual prognosis can be severely affected in delayed cases.[4] PORN is more aggressive, seen in immunocompromised individuals, with minimal inflammation and rapid retinal destruction.[5]

Unlike uveitic or diabetic macular edema, macular edema and neurosensory detachment are uncommon due to the predominance of ischemic necrosis and vascular occlusion over exudation.[1,2]

The immune response is often acute and destructive, with CD4 and CD8 lymphocyte infiltration leading to retinal cell apoptosis and necrosis. Unlike choroidal diseases, herpetic retinitis rarely causes extensive choroidal dysfunction, thereby reducing the chance of neurosensory detachment.[6] Progressive necrosis often leads to retinal atrophy and tractional or rhegmatogenous retinal detachment as opposed to exudative detachments.[7]

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## 2. Case Report

### *2.1. Clinical presentation*

A 20-year-old male presented with a sudden onset of defective vision in both eyes, worse in the right eye, for one week. The vision loss was gradually progressive and accompanied by mild ocular pain, with no other relevant ocular and systemic features.

### *2.2. Ophthalmic examination*

1. Right eye:
2. Vision: HM+
3. Anterior segment: Normal
4. Fundus: Hazy media due to vitreous haze and cells, temporal pallor of the optic disc, superior margin blurring, retinal necrosis, splinter hemorrhages, and macular edema. (**Figure 1**)

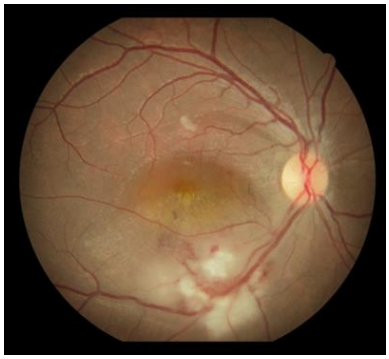

**Figure 1:** Right eye fundus

1. Left eye:
2. Vision: 6/36 (improving to 6/24 with pinhole correction)
3. Anterior segment: Normal
4. Fundus: Hazy media due to vitreous haze and cells, normal optic disc margins, multiple confluent necrotic retinal lesions in the superotemporal quadrant, absent foveal reflex. (**Figure 2**)

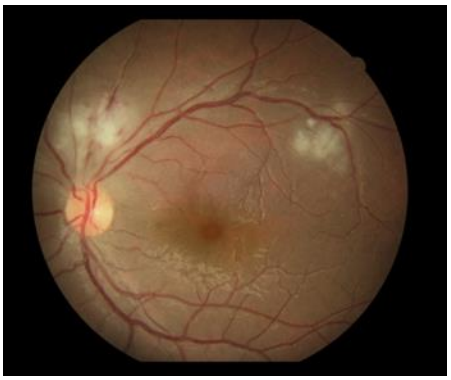

**Figure 2:** Left eye fundus

### *2.3. Diagnostic findings*

1. Spectral domain OCT
2. Right eye: Neurosensory detachment, cystic spaces, retinal thickening (CMT: 429 microns) (**Figure 3**)
3. Left eye: Parafoveal neurosensory detachment, cystic spaces, retinal thickening (CMT: 271 microns) (**Figure 4**)

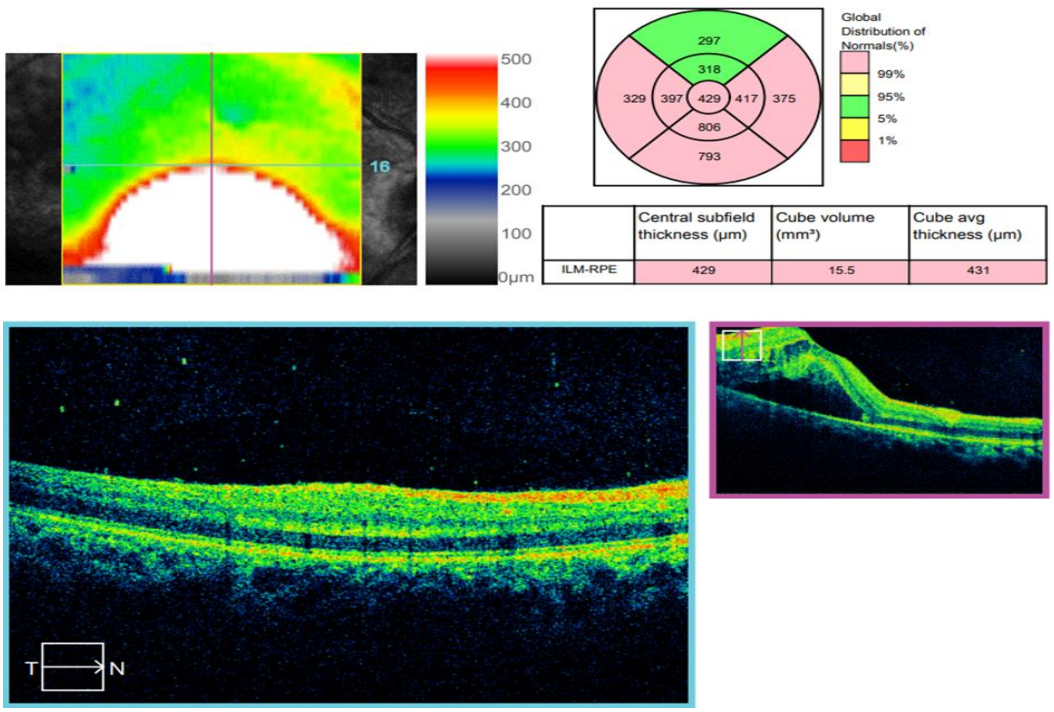


**Figure 3:** Right eye OCT macula

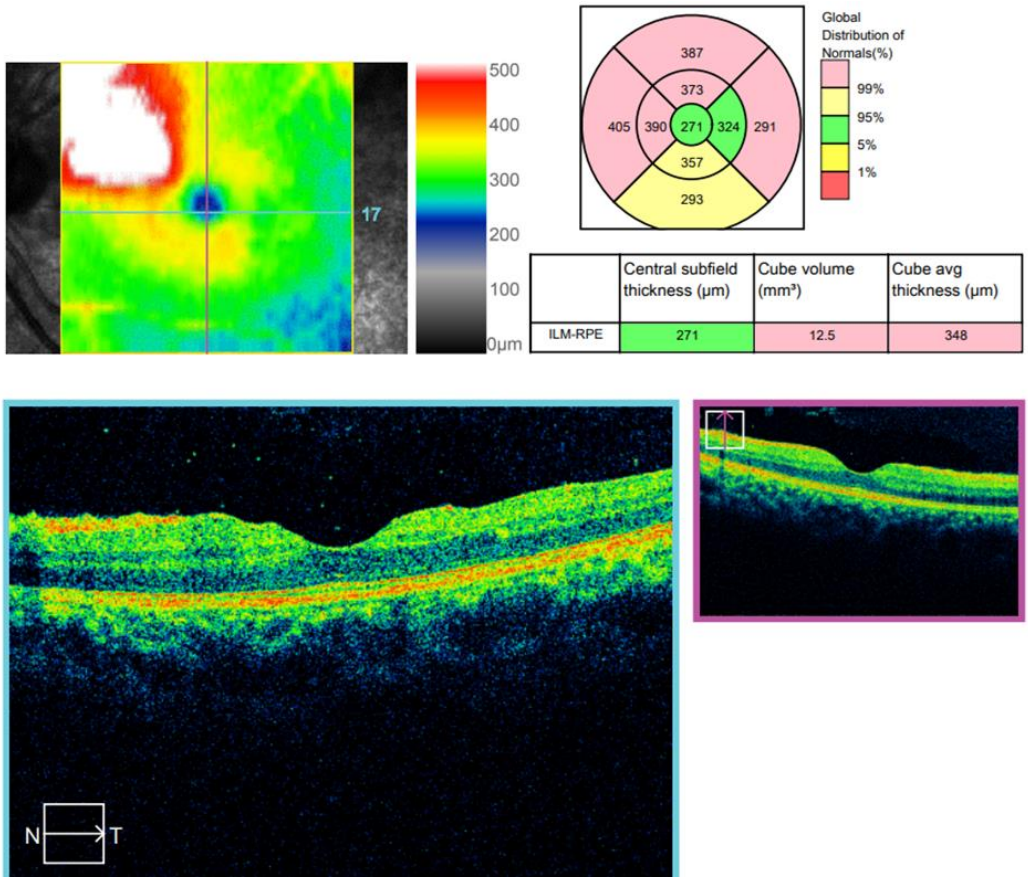


**Figure 4:** Left eye OCT macula

*2.4. Laboratory Investigations*

1. TORCH profile: IgM (1.59 IV) and IgG (1.20 IV) positive for herpes simplex virus
2. Complete blood picture: Normal
3. ESR: 35 mm/hr
4. HIV, HBsAg, and Syphilis serology: Negative
5. Ultrasound abdomen: Normal, no hepatosplenomegaly

## 3. Treatment

Antiviral therapy remains the mainstay of treatment in ARN. Standard management includes intravenous acyclovir (10 mg/kg every 8 hours) for 7–10 days followed by oral therapy (800 mg five times daily for at least four weeks). Adjunctive corticosteroid therapy may reduce intraocular inflammation and optic nerve involvement when introduced after antiviral cover.[8,9]

Topical agents, including non-steroidal anti-inflammatory drugs (e.g., nepafenac) and cycloplegics like cyclopentolate, offer symptomatic relief and control of anterior segment inflammation. Early intervention significantly lowers the risk of bilateral involvement and long-term sequelae such as optic atrophy, macular scarring, and tractional retinal detachment.

## 4. Discussion

This case highlights a rare bilateral manifestation of herpetic viral retinitis in an immunocompetent young adult. ARN is typically unilateral at onset, with bilateral involvement reported in 30–70% of untreated or delayed cases.[3] The presence of neurosensory detachment and cystoid macular changes in this case is atypical, underscoring the diagnostic value of spectral domain OCT in detecting early retinal changes not evident on fundoscopy.

The positive TORCH serology confirmed active herpes virus infection, aligning with literature emphasizing the role of serologic support in diagnosis alongside clinical judgment. While PCR from aqueous humor remains the gold standard for pathogen identification, TORCH testing is still useful in resource-constrained settings.[4]

The combination of systemic acyclovir and oral corticosteroids provided significant anatomical and visual recovery, reinforcing current evidence that dual therapy improves outcomes when steroids are introduced after antivirals.[8] Visual acuity improvement from HM+ to 6/9 (right eye) and 6/6 (left eye) is remarkable, given the potential for poor prognosis in ARN without early intervention.[5]

Retinal necrosis, vasculitis, and risk of detachment necessitate vigilant follow-up. Prophylactic laser photocoagulation has been shown to reduce retinal

detachment in some cases, though not used here due to the location of lesions.[9]

## 5. Limitations

This case contributes to limited literature on bilateral ARN with macular involvement and highlights the importance of imaging, serology, and timely therapeutic intervention.

## 6. Conclusion

Herpetic viral retinitis, particularly ARN, requires rapid diagnosis and prompt treatment to prevent irreversible vision loss. Although rare, bilateral involvement and macular edema can occur even in immunocompetent individuals. This report emphasizes early OCT imaging, serologic diagnosis, and aggressive antiviral therapy as critical steps in preserving visual function.

## 7. Source of Funding

None.

## 8. Conflicts of Interest

None.

## 9. Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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