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CLINICAL FEATURES, MULTIMODAL IMAGING, MANAGEMENT, AND VISUAL OUTCOMES IN POST-FEVER RETINITIS: A CASE SERIES FROM A RURAL TERTIARY CARE HOSPITAL

Ophthalomology

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ABSTRACT

Background: Post-fever retinitis (PFR) is an immune-mediated retinal inflammatory condition that manifests weeks after systemic febrile illness and may lead to severe visual impairment if not treated promptly [1,2]. **Objective:** To describe the clinical presentation, multimodal imaging features, treatment approaches, and visual outcomes in six patients diagnosed with PFR. **Methods:** A retrospective case series was performed over 6 months at a tertiary care eye hospital. 22 patients with retinitis following a recent febrile illness were included. Demographic details, systemic history, fundus findings, OCT/FFA characteristics, treatment strategies, and BCVA outcomes were analyzed. **Results:** All 22 patients presented within 2–4 weeks after recovery from fever with unilateral or bilateral painless vision loss. Posterior segment signs included cotton-wool spots, intraretinal hemorrhages, macular edema, vasculitis, and neurosensory detachment. OCT showed hyperreflective lesions involving the inner retinal layers with fluid accumulation. All patients improved with systemic corticosteroids and appropriate antimicrobials when indicated. **Conclusion:** Early recognition of PFR, exclusion of active infection, and prompt corticosteroid therapy-supplemented with targeted antimicrobial treatment when warranted-can preserve visual function and prevent long-term morbidity.

KEYWORDS

Post-fever retinitis, Immune-mediated retinitis, Retinal inflammation, Retinal vasculitis, Febrile illness

INTRODUCTION

Post-fever retinitis typically develops 2–6 weeks following a systemic febrile illness and is characterized by an immune-mediated inflammatory response targeting the retina [1,2]. Molecular mimicry, immune complex deposition, and retinal microvasculitis are suspected pathogenic mechanisms [3,7]. PFR is increasingly associated with vector-borne and bacterial infections such as dengue, chikungunya, rickettsial fever, and tuberculosis-conditions endemic in the Indian subcontinent [3,8–12].

Typical clinical manifestations include sudden painless diminution of vision with cotton-wool spots, hemorrhages, vasculitis, macular edema, and neuroretinitis [1,4,9,10]. OCT is particularly useful in demonstrating inner retinal hyper-reflectivity, neurosensory detachment, and macular edema [13,15].

Multiple reports highlight that early diagnosis and timely corticosteroid therapy-after excluding ongoing infectious replication-lead to favorable functional outcomes [1,4,5,11]. However, misdiagnosis can result in unnecessary antimicrobial use and delayed treatment, increasing the risk of permanent visual damage [6]. This case series contributes real-world evidence from a rural tertiary care hospital, emphasizing multimodal imaging and tailored therapy in optimizing outcomes.

Purpose

To describe the clinical presentation, imaging characteristics, management strategies, and outcomes in patients with post-fever retinitis, highlighting the significance of early recognition and appropriate therapy in preserving visual function.

Methods

A retrospective case series was conducted at a rural tertiary ophthalmology centre over 6 months from March 2025 to August 2025. 22 consecutive patients presenting with retinitis following a recent febrile illness were included. Data collected included demographics, systemic illness history, BCVA, ocular symptoms, fundus examination findings, and multimodal imaging (OCT and FFA).

A comprehensive infectious workup including blood serology, haematology, and radiologic tests where indicated was performed to exclude infectious uveitis aetiologies such as CMV, HSV, and toxoplasmosis [7,14,16]. Only after excluding active infection were systemic corticosteroids initiated. Ethical clearance and informed consent were obtained.

RESULTS

Demographic Profile

Of the 22 patients, 14 (63.6%) were males and 8 (36.3%) females. The mean age was 38.17 ± 14.42 years (range 16–50 years).

The highest incidence (36%) occurred among individuals aged 40–49 years.

Table 1: Demographic Details

Demographic Details	Frequency	Percentage
Males	14	63.6
Females	8	36.3

Table 2: Etiological Distribution

Systemic Etiology	Number of Cases
Rickettsial infection	1
Tuberculosis-associated retinitis	5
Dengue	12
Chikungunya	2
Post-encephalitic febrile illness (Leptospira IgM positive)	2
Total	22

Clinical Findings And Multimodal Imaging

All patients presented within 2–4 weeks following recovery from febrile illness, with complaints of painless vision loss, either unilateral or bilateral. Posterior segment examination revealed typical features of post-fever retinitis, including cotton-wool spots, intraretinal hemorrhages, vasculitis, macular edema, and neurosensory detachment.

Table 3: Retinal Features

Retinal signs	Number of Cases	Percentage
Neuroretinitis	18	83.3
Vasculitis	15	66.6

Macular edema	9	50
Retinal / Preretinal hemorrhages	6	33.33
Cotton wool spots	7	50

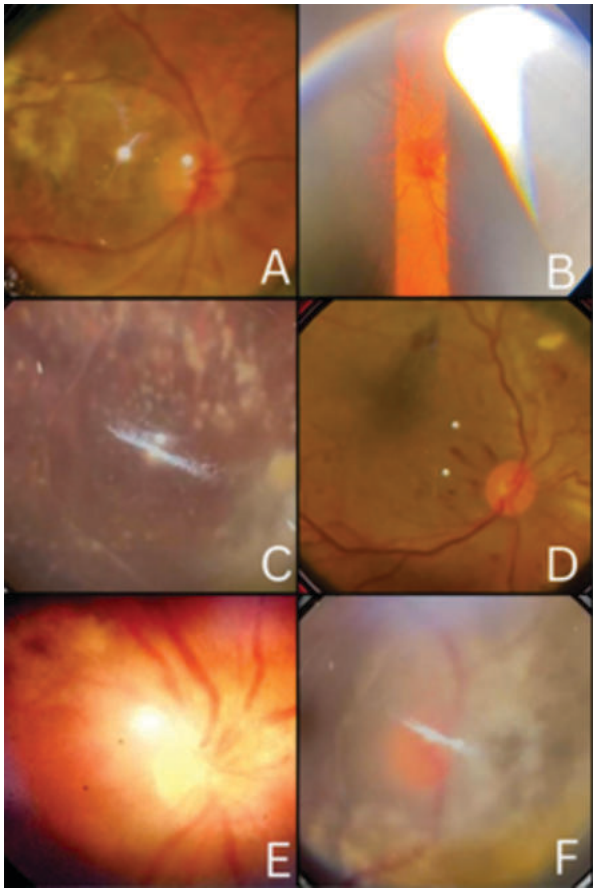

Fig 1: Retinal Features

A- Vasculitis. B- hyperemic disc with edema. C- resolving vitreous hemorrhage D- retinal hemorrhages with cotton wool spots. E- disc edema. F-resolving vitreous hemorrhage

The most common retinal signs included neuroretinitis(81.8%) and Vasculitis(68.1%), with the least seen patterns being preretinal hemorrhages and cotton wool spots.

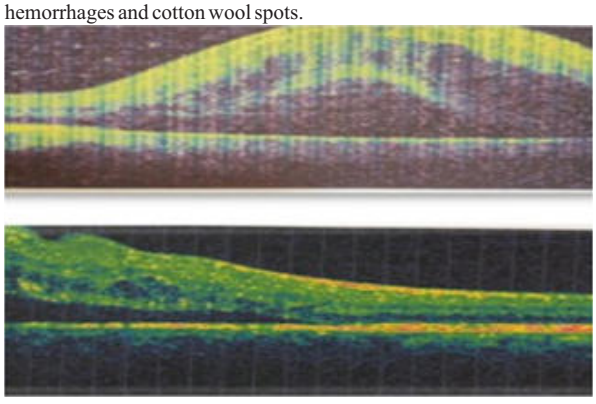

Fig 2: OCT patterns showing Sub retinal fluid with neurosensory detachment

Optical coherence tomography (OCT) imaging demonstrated inner retinal hyperreflective plaques, macular edema, and sub-retinal fluid consistent with previous descriptions in PFR . Fundus fluorescein angiography (FFA) showed patchy capillary non-perfusion and leakage in areas of vasculitis .

Table 4 : Oct Patterns

Oct features	Frequency	Percentage
Neurosensory detachment	16	66.66
Macular edema	8	66.66
Hypereflective plaques	14	100

Visual Outcome

All patients received systemic corticosteroid therapy after exclusion of active infection. Antimicrobial therapy was administered when indicated, such as doxycycline for rickettsial retinitis and continuation of anti-tubercular therapy in tuberculosis-associated cases.

Visual acuity improved significantly in all patients during follow-up . Cases secondary to tuberculosis demonstrated relatively slower improvement, consistent with prior reports indicating guarded prognosis in TB neuroretinitis [11]. None of the patients required intravitreal steroid injections.

Table 6: Visual Outcomes After Management

Visual Outcomes after treatment	Frequency	Percentage
Good recovery VA>6/18	16	72.7
Partial Improvemnet VA>6/60	6	27.2

DISCUSSION

This case series reinforces that PFR is an immune-mediated reaction triggered by a prior infection rather than an active infectious retinitis [1,2,7]. The predominance of macular involvement and inner-retinal hyper-reflective lesions parallels descriptions in chikungunya and dengue maculopathy [8–10]. Findings support the hypothesis that retinal microvasculitis drives the primary pathology [3,5,7].

Corticosteroids remain the cornerstone of treatment once active infection is excluded [1,2,11]. The response profile in our series-rapid improvement in all patients except slower recovery in TB-associated disease-mirrors outcomes reported in earlier TB neuroretinitis studies [11].

This study highlights essential clinical considerations: PFR must be suspected in any patient presenting with post-febrile visual decline [1–4].OCT should be performed early to establish activity and guide treatment [13,15]. Corticosteroids should be paired with antimicrobial coverage when systemic infectious triggers are known [6,10–12].

CONCLUSION

Post-fever retinitis is a vision-threatening but highly reversible immune-mediated retinal disorder. Early recognition, exclusion of active infection, and prompt corticosteroid therapy-with etiology-specific antimicrobial supplementation where indicated-lead to excellent structural and functional outcomes. Increasing clinician awareness can prevent delayed or inappropriate management.

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