

AYURVEDIC MANAGEMENT OF POST-FEBRILE MACULAR HEMORRHAGE WITH SPECIAL REFERENCE TO URDHVAGA RAKTAPITTA: AN OCT-DOCUMENTED CASE REPORT

Dr. Aishwarya Suhas Sheth^{*1}, Dr. Santosh Rahinj²

¹Postgraduate Scholar, Department of Shalakya Tantra (Netra Roga), Dr. D. Y. Patil College of Ayurveda and Research Centre (DPU), Pimpri, Pune, Maharashtra, India.

²Associate Professor and Guide, Department of Shalakya Tantra (Netra Roga), Dr. D. Y. Patil College of Ayurveda and Research Centre (DPU), Pimpri, Pune, Maharashtra, India.

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*Corresponding Author

Dr. Aishwarya Suhas Sheth

Postgraduate Scholar, Department of Shalakya Tantra (Netra Roga), Dr. D. Y. Patil College of Ayurveda and Research Centre (DPU), Pimpri, Pune, Maharashtra, India.



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ABSTRACT

Background: Macular hemorrhage is a potentially sight-threatening retinal disorder characterized by bleeding within the macular region, leading to sudden impairment of central vision. The condition may develop secondary to retinal vascular disorders, trauma, inflammatory conditions, or post-febrile vascular alterations. Management in conventional ophthalmology is largely directed toward the underlying cause, and spontaneous recovery is often awaited in selected patients. However, no universally accepted pharmacological treatment exists for uncomplicated post-febrile macular hemorrhage. From an Ayurvedic perspective, hemorrhagic manifestations involving structures above the clavicle may be conceptually correlated with *Urdhvaga Raktapitta*, resulting from vitiation of *Pitta Dosha and Rakta Dhatu*. **Objective:** To evaluate the functional and anatomical outcomes of Ayurvedic management based on *Raktapitta Chikitsa Siddhanta* in a patient with post

-febrile macular hemorrhage using best-corrected visual acuity (BCVA), fundus examination, and spectral-domain Optical Coherence Tomography (OCT). **Case Presentation:** A 28-year-old male presented with sudden painless diminution of vision in the right eye for five days following a recent febrile illness. Best-corrected visual acuity was 3/60 in the affected eye.

Fundus examination revealed localized macular hemorrhage associated with retinal thickening, while OCT demonstrated a hyper-reflective lesion involving the macular region with increased central macular thickness (358 μm). The patient underwent a comprehensive Ayurvedic treatment protocol comprising *Deepana–Pachana*, *Pratimarsha Nasya*, *Raktachandanadi Bidalaka*, *Shamana Aushadhi*, and *Pathya–Apathya* for 30 days. **Results:** Following completion of therapy, BCVA improved from 3/60 to 6/6 (partial). Fundus examination demonstrated marked resolution of the macular hemorrhage with restoration of the normal foveal appearance. OCT showed substantial reduction of the hyper-reflective lesion and normalization of retinal architecture, while central macular thickness decreased from 358 μm to 261 μm , indicating objective anatomical recovery. No recurrence or deterioration was observed during the subsequent four-week follow-up. **Conclusion:** The present case demonstrated encouraging functional and structural recovery following Ayurvedic management based on *Pitta-Shamana* and *Rakta-Stambhana* principles. Integration of classical Ayurvedic therapeutics with modern retinal imaging enabled objective monitoring of treatment response. Although spontaneous resolution cannot be completely excluded in isolated post-febrile retinal hemorrhage, the favorable clinical outcome observed in this patient suggests that Ayurvedic intervention may have a supportive role in selected cases. Further prospective studies involving larger patient populations are required to establish efficacy and reproducibility.

KEYWORDS: Macular hemorrhage, *Urdhvaga Raktapitta*, Ayurveda, Shalakya Tantra, Optical Coherence Tomography, OCT, Retinal hemorrhage, *Pitta*, *Rakta Dhātu*, Case report.

2. INTRODUCTION

Macular hemorrhage is a potentially vision-threatening retinal condition characterized by the accumulation of blood within the intraretinal, subretinal, sub-retinal pigment epithelial, or sub-internal limiting membrane layers involving the macular region. Since the macula is responsible for central vision, colour perception, and fine visual discrimination, even a localized hemorrhage may result in sudden and significant impairment of visual acuity. Rather than representing a distinct disease entity, macular hemorrhage is a clinical manifestation of various underlying retinal vascular and systemic disorders that require careful evaluation and appropriate management.^[1,2]

The etiological spectrum of macular hemorrhage includes retinal vein occlusion, retinal arterial macroaneurysm, diabetic retinopathy, hypertensive retinopathy, age-related macular

degeneration, pathological myopia, ocular trauma, Valsalva retinopathy, blood dyscrasias, inflammatory disorders, and infectious or post-febrile vascular insults. In young adults, post-febrile retinal hemorrhage is an uncommon but recognized presentation, believed to result from transient endothelial dysfunction, immune-mediated vascular injury, increased capillary permeability, or platelet abnormalities following systemic infection. Depending upon the location, size, and duration of hemorrhage, patients may present with sudden painless diminution of vision, metamorphopsia, central scotoma, or distortion of images.

Persistent hemorrhage within the macular region adversely affects retinal metabolism and photoreceptor function. Breakdown products of blood, particularly iron, may induce oxidative stress, inflammatory responses, and photoreceptor toxicity, thereby increasing the risk of irreversible retinal damage if resolution is delayed. Consequently, early recognition and continuous monitoring of retinal architecture are essential for preserving visual function.

Fundus examination remains the primary clinical investigation for detecting retinal hemorrhage; however, Optical Coherence Tomography (OCT) has become indispensable for evaluating retinal layer involvement, localization of hemorrhage, assessment of central macular thickness, and objective monitoring of structural recovery. Spectral-domain OCT provides high-resolution cross-sectional imaging that enables precise documentation of anatomical changes throughout the treatment period.

Management of macular hemorrhage in contemporary ophthalmology is primarily directed toward the underlying cause. Observation is often recommended in uncomplicated cases where spontaneous resolution is anticipated, whereas intravitreal anti-vascular endothelial growth factor therapy, focal laser photocoagulation, pneumatic displacement, or pars plana vitrectomy may be considered in selected patients depending on the etiology and severity. Despite these therapeutic options, no universally accepted medical treatment specifically accelerates the resolution of isolated post-febrile macular hemorrhage while simultaneously restoring retinal architecture. This highlights the need to explore complementary therapeutic approaches that may facilitate functional and anatomical recovery.

From an Ayurvedic perspective, hemorrhagic disorders are broadly described under Raktapitta, a condition resulting from aggravation of Pitta Dosha leading to vitiation of Rakta Dhatu. Classical texts explain that when vitiated Rakta manifests in organs situated above the clavicle (*Urdhvabhaga*), the condition is termed *Urdhvaga Raktapitta*. The close

physiological relationship between Pitta and Rakta (*Ashraya–Ashrayi Bhava*) forms the basis of the disease process, wherein aggravated Pitta produces qualitative and quantitative derangement of Rakta, ultimately resulting in hemorrhagic manifestations. In ocular involvement, this pathological process affects the Drishti Mandala, producing visual disturbances that may be conceptually correlated with retinal hemorrhagic disorders.

The principles of *Raktapitta Chikitsa* emphasize Pitta Shamana, *Rakta Prasadana*, *Rakta Stambhana*, and restoration of normal tissue homeostasis through appropriate *Shamana Aushadhi*, *Kriyakalpa*, dietary regulation (*Pathya–Apathya*), and lifestyle modification. Although these principles are well described in classical Ayurvedic literature, clinical documentation demonstrating objective retinal recovery using modern imaging modalities remains limited.

The present case report describes the successful Ayurvedic management of a post-febrile macular hemorrhage correlated with *Urdhvaga Raktapitta*, in which improvement was assessed using best-corrected visual acuity, fundus examination, and serial spectral-domain OCT. The report highlights the integration of classical Ayurvedic therapeutic principles with contemporary ophthalmic diagnostic techniques for objective evaluation of clinical outcomes.

3. CASE PRESENTATION

Patient Information

A 28-year-old male presented to the Outpatient Department (OPD) of Shalakya Tantra (Netra Roga) with a chief complaint of sudden, painless diminution of vision in the right eye for five days. The visual symptoms were preceded by a febrile illness approximately one week earlier. The patient denied any history of ocular trauma, redness, ocular pain, photophobia, discharge, floaters, flashes of light, or diplopia.

There was no previous history of diabetes mellitus, systemic hypertension, bleeding disorders, cardiovascular disease, autoimmune disorders, or long-term medication use. The patient also had no history of previous ocular surgery, retinal disease, high myopia, anticoagulant therapy, or similar episodes in the past. Family history was non-contributory.

Chief Complaints

- Sudden painless diminution of vision in the right eye since 5 days.
- Difficulty in viewing distant objects.

- Blurring of central vision.

History of Present Illness

The patient was apparently healthy until five days before presentation, when he experienced sudden blurring of vision in the right eye following recovery from an acute febrile illness. The diminution of vision was painless, non-progressive, and not associated with redness, watering, headache, or trauma. Since the symptoms persisted without improvement, he sought consultation at the Shalakya Tantra OPD.

Past History

- No history of Diabetes Mellitus.
- No history of Systemic Hypertension.
- No history of Tuberculosis.
- No bleeding disorders.
- No previous retinal disease.
- No previous ocular surgery.
- No significant drug history.

Personal History

- Appetite: Normal
- Sleep: Sound
- Bowel habits: Regular
- Micturition: Normal
- Diet: Mixed
- Addiction: Nil

Family History

No significant family history of retinal disorders, hereditary ocular diseases, diabetes mellitus, hypertension, or bleeding disorders was elicited.

Clinical Examination**General Examination**

Parameter	Findings
General Condition	Fair
Built	Moderate
Nourishment	Moderate
Pulse	90/min
Blood Pressure	130/90mmofHg
Temperature	Afebrile
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Clubbing	Absent
Lymphadenopathy	Absent
Edema	Absent

Systemic Examination

- Cardiovascular System – Within normal limits.
- Respiratory System – Within normal limits.
- Central Nervous System – Within normal limits.
- Per Abdomen – Within normal limits.

Ocular Examination**Visual Acuity**

Eye	Distance Vision	Near Vision
Right Eye	3/60	N6
Left Eye	6/6 (Partial)	N6

Intraocular Pressure

Eye	IOP
Right Eye	14.6 mmHg
Left Eye	18.9 mmHg

Anterior Segment Examination

Anterior segment examination of both eyes was unremarkable. The eyelids, conjunctiva, cornea, anterior chamber, iris, pupil, and crystalline lens appeared normal. Pupillary reactions were brisk and equal in both eyes, with no evidence of relative afferent pupillary defect.

Posterior Segment Examination

Fundus examination of the right eye revealed a localized hemorrhage involving the macular

region associated with mild retinal thickening and subtle vascular tortuosity. The optic disc appeared healthy with well-defined margins. Peripheral retina was unremarkable.

Fundus examination of the left eye was within normal limits.

Investigations

Fundus Examination

Right Eye

- Localized macular hemorrhage.
- Mild retinal thickening.
- Slight vascular tortuosity.
- No evidence of retinal detachment.
- Optic disc healthy.

Left Eye

- Normal fundus.

Optical Coherence Tomography (OCT)

Spectral-domain OCT of the right eye demonstrated a hyper-reflective lesion involving the macular region with increased central macular thickness measuring **358 μm** , consistent with macular hemorrhage. Distortion of normal foveal architecture with associated retinal thickening was observed.^[3]

OCT of the left eye was within normal limits.

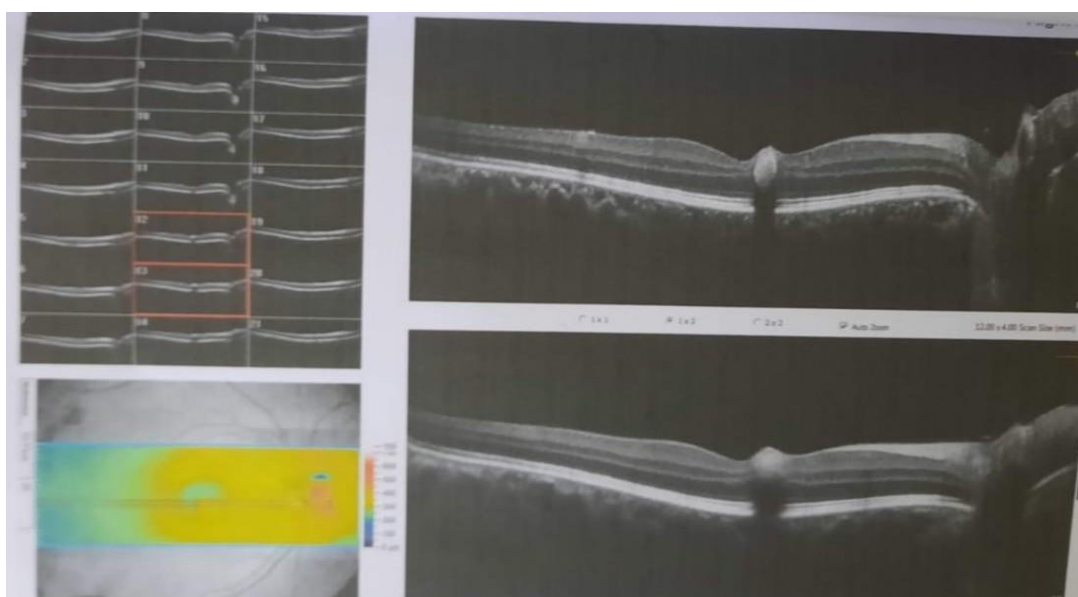


Figure 1: Pretreatment SD-OCT of Right Eye.

Diagnosis

Post-febrile Macular Hemorrhage (Right Eye)

(*Urdhvaga Raktapitta* involving the *Drishti Mandala* due to *Pitta–Rakta Dushti*).^[4]

Differential Diagnosis

The following conditions were considered and excluded based on history, clinical examination, and OCT findings:

- Retinal vein occlusion
- Diabetic retinopathy
- Hypertensive retinopathy
- Valsalva retinopathy
- Choroidal neovascular membrane
- Traumatic retinal hemorrhage
- Retinal arterial macroaneurysm

4. AYURVEDIC ASSESSMENT

Ayurvedic Diagnosis

Urdhvaga Raktapitta involving *Drishti Mandala* (Right Eye)

The diagnosis was established based on the patient's clinical presentation, history of a recent febrile illness, ocular findings, and the Ayurvedic principles of *Pitta Prakopa*, *Rakta Dushti*, and *Urdhvaga Gati*. The sudden onset of painless visual impairment with retinal hemorrhage involving the macular region was conceptually correlated with *Urdhvaga Raktapitta*, wherein aggravated *Pitta* vitiates *Rakta* and manifests in structures above the clavicle, including the eye.^[5,6]

Ashtavidha Pariksha

Parameter	Findings
Nadi (Pulse)	90/min; <i>Pitta</i> predominance
Mala (Stool)	<i>Prakrita</i>
Mutra (Urine)	<i>Prakrita</i>
Jihva (Tongue)	<i>Sama</i>
Shabda (Speech)	<i>Prakrita</i>
Sparsha (Touch)	<i>Anushna-Sheeta</i>

Parameter	Findings
Druk (Vision)	<i>Vikruta (diminished vision in the right eye)</i>
Akruti (Build)	<i>Madhyama</i>

Dashavidha Pariksha

Parameter	Findings
<i>Prakriti</i>	<i>Pitta–Kapha</i>
<i>Vikriti</i>	<i>Pitta–Rakta Dushti</i>
<i>Sara</i>	<i>Madhyama</i>
<i>Samhanana</i>	<i>Madhyama</i>
<i>Pramana</i>	<i>Madhyama</i>
<i>Satmya</i>	<i>Madhyama</i>
<i>Satva</i>	<i>Avara–Madhyama</i>
<i>Ahara Shakti</i>	<i>Madhyama</i>
<i>Vyayama Shakti</i>	<i>Madhyama</i>
<i>Vaya</i>	<i>Yuva (28 years)</i>

Samprapti Ghataka

Component	Findings
Dosha	Predominantly <i>Pitta</i> with <i>Rakta</i> involvement
Dushya	<i>Rakta, Rasa</i>
Agni	<i>Manda (following Jwara)</i>
Ama	<i>Present initially</i>
Srotas	<i>Raktavaha Srotas</i>
Srotodushti	<i>Sanga and Vimargagamana</i>
Udbhava Sthana	<i>Amashaya</i>
Sanchara Sthana	<i>Raktavaha Srotas</i>
Adhisthana	<i>Drishti Mandala (Macular region)</i>

Component	Findings
<i>Vyakta Sthana</i>	<i>Netra</i>
<i>Rogamarga</i>	<i>Madhyama Rogamarga</i>
<i>Swabhava</i>	<i>Ashukari</i>
<i>Roga Marga</i>	<i>Abhyantara</i>

Nidana Panchaka

Nidana

- Recent febrile illness
- Aggravation of *Pitta* following *Jwara*
- *Rakta Dushti*

Purvarupa

No definite Purvarupa could be elicited.

Rupa

- Sudden painless diminution of vision
- Macular hemorrhage
- Blurred central vision
- Retinal thickening on OCT

Upashaya

- Improvement following *Pitta-Shamana* and *Rakta-Stambhana* Chikitsa.

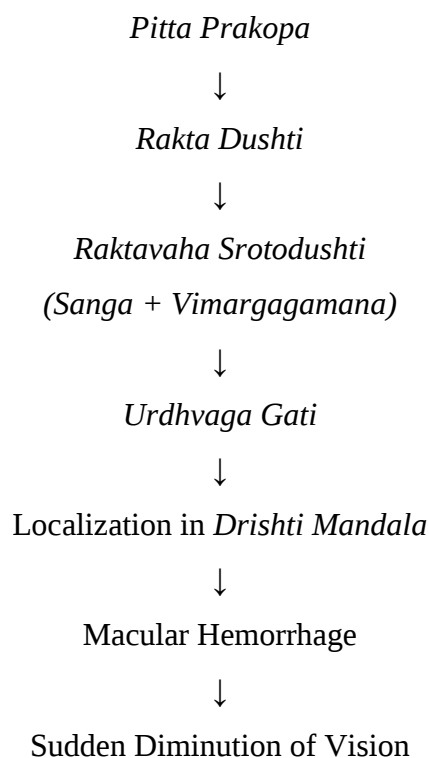
Samprapti

Aggravated *Pitta Dosha* following the febrile episode vitiated *Rakta Dhatu* due to the *Ashraya–Ashrayi* relationship. The vitiated *Rakta* circulated through the *Raktavaha Srotas* and localized in the *Drishti Mandala*, producing hemorrhage within the macular region. The resulting disruption of retinal architecture manifested clinically as sudden diminution of vision. Ayurvedic management aimed at *Pitta Shamana*, *Rakta Prasadana*, *Rakta Stambhana*, and restoration of normal ocular physiology.

Samprapti

Jwara (Febrile Illness)





5. TREATMENT PROTOCOL

Treatment Principle

The treatment was planned according to the principles of *Raktapitta Chikitsa*, with the primary objectives of *Pitta Shamana*, *Rakta Stambhana*, *Rakta Prasadana*, and restoration of normal retinal architecture. Initially, *Deepana–Pachana* therapy was administered to improve *Agni* and eliminate *Ama*, thereby facilitating better therapeutic response. Subsequently, *Shamana Chikitsa* and appropriate *Kriyakalpa* procedures were employed to pacify vitiated *Pitta–Rakta*, stabilize retinal microvasculature, promote resolution of hemorrhage, and improve visual function.^[7,8,9,10]

Table 1: Therapeutic Interventions.

S. No.	Intervention	Formulation	Duration	Dose and Administration	Therapeutic Rationale
1	<i>Deepana–Pachana</i>	<i>Aampachak Vati</i>	Day 1–5	250 mg twice daily before meals with lukewarm water	Improves <i>Agni</i> , digests <i>Ama</i> , and prepares the body for subsequent <i>Shamana</i> therapy.
2	<i>Bidalaka</i>	<i>Raktachandana</i> , <i>Vasa</i> , <i>Nimba</i> , <i>Patola</i> and <i>Yashtimadhu</i> with milk	Day 6–12	Local application once daily	Provides local <i>Pitta-Shamana</i> , <i>Rakta-Stambhana</i> , and <i>Shothahara</i> effects, helping reduce

					ocular inflammation.
3	<i>Pratimarsha Nasya</i>	<i>Panchendriya Vardhana Taila</i>	Day 6–30	Two drops in each nostril every morning	Nourishes the organs above the clavicle (<i>Urdhvajatrugata</i> region), pacifies <i>Urdhvaga Doshas</i> , and supports ocular health.

Table 2: Internal Medicines (Shamana Chikitsa).

S. No.	Medicine	Duration	Dose	Probable Ayurvedic Action
1	<i>Chandrakala Rasa</i>	Day 6–30	250 mg twice daily after meals with water	<i>Pitta-Shamana</i> , <i>Rakta-Prasadana</i> , <i>Rakta-Stambhana</i> , and cooling effect on vitiated Rakta.
2	<i>Mauktika Kamadugha Rasa</i>	Day 6–30	250 mg twice daily before meals with water	Pacifies <i>Pitta</i> , strengthens <i>Rasa</i> and <i>Rakta Dhatu</i> , and alleviates burning and hemorrhagic manifestations.
3	<i>Avipattikara Churna</i>	Day 6–30	3 g at bedtime with lukewarm water	Mild <i>Virechana</i> , regulates <i>Pitta</i> , improves digestion, and prevents upward movement of aggravated <i>Pitta</i> .
4	<i>Vasaguduchyadi Kashaya</i>	Day 6–30	10 mL twice daily after meals with lukewarm water	<i>Pitta-Shamana</i> , <i>Rakta-Prasadana</i> , anti-inflammatory, and supports tissue healing.
5	<i>Dhamasa–Jatamansi–Vasa Churna with Godanti Bhasma and Madhu</i>	Day 6–30	<i>Dhamasa</i> 500 mg + <i>Jatamansi</i> 500 mg + <i>Vasa</i> 500 mg + <i>Godanti Bhasma</i> 250 mg with honey, twice daily	Promotes <i>Rakta-Stambhana</i> , <i>Pitta-Shamana</i> , antioxidant activity, and facilitates gradual absorption of retinal hemorrhage.

Pathya–Apathya

Pathya (Recommended)

The patient was advised to consume a Pitta-pacifying diet consisting predominantly of Madhura and Tikta Rasa foods. Easily digestible preparations such as *Mudga Yusha*, *Yavagu*, milk, pomegranate, grapes, coconut water, bottle gourd, and green leafy vegetables were recommended. Adequate hydration, sufficient sleep, mental relaxation, and avoidance of excessive visual strain were emphasized throughout the treatment period.

Apathya (To be Avoided)

The patient was instructed to avoid spicy, sour, salty, fermented, fried, and excessively hot foods, along with alcohol, smoking, prolonged screen exposure, excessive sunlight, night awakening, emotional stress, and strenuous physical exertion, as these factors are considered to aggravate Pitta Dosha and may adversely affect ocular healing.

Treatment Timeline**Duration Treatment**

Day 1–5 *Deepana–Pachana with Aampachak Vati*

Day 6–12 *Bidalaka + Pratimarsha Nasya initiated*

Day 6–30 Internal *Shamana* medicines continued

Day 30 Clinical examination, fundus evaluation, and OCT assessment

Week 8 Follow-up examination with stable visual acuity

Scientific Basis of the Treatment

The therapeutic approach was designed to address both the Ayurvedic pathogenesis and the clinical manifestations of the disease. *Deepana–Pachana* improved digestive and metabolic function, facilitating effective action of subsequent medications. *Shamana* formulations were selected to pacify aggravated Pitta, purify and stabilize *Rakta Dhatu*, reduce inflammatory changes, and promote physiological tissue repair. *Pratimarsha Nasya* and *Bidalaka* were incorporated as adjunctive therapies to support ocular nourishment and local Pitta pacification. The prescribed *Pathya–Apathya* regimen complemented the pharmacological interventions by minimizing factors that could further aggravate Pitta and impede retinal recovery.

Excellent. This section is critical because reviewers look for objective evidence that supports the clinical outcome. Instead of simply stating that the patient improved, we'll present the findings in a structured, publication-ready format.

6. RESULTS

The patient completed the prescribed 30-day Ayurvedic treatment protocol without any adverse events. Clinical improvement was assessed through serial evaluation of best-corrected visual acuity (BCVA), intraocular pressure (IOP), fundus examination, and spectral-domain Optical Coherence Tomography (OCT).

A progressive improvement in both functional vision and retinal anatomy was observed during the treatment period. The patient reported gradual reduction in blurred central vision with significant improvement in distance vision. No recurrence of symptoms or deterioration in visual acuity was observed during the additional four-week follow-up.

Table 3: Clinical Outcome Before and After Treatment.

Parameter	Right Eye (Before)	Right Eye (After 30 Days)	Left Eye
Best Corrected Visual Acuity (Distance)	3/60	6/6 (Partial)	6/6 (Partial)
Near Vision	N6	N6	N6
Intraocular Pressure	14.6 mmHg	14.6 mmHg	18.9 mmHg
Fundus Examination	Localized macular hemorrhage with retinal thickening	Marked resolution of hemorrhage with restoration of macular contour	Normal
OCT Findings	Hyper-reflective macular lesion with retinal thickening	Resolution of hyper-reflective lesion with restoration of retinal architecture	Normal

Table 4: Changes in Central Macular Thickness (CMT).

Evaluation	CMT (μm)
Before Treatment	358
After 30 Days	261
Absolute Reduction	97 μm
Percentage Reduction	27.1%

The reduction in central macular thickness observed on OCT corresponded with improvement in retinal morphology and visual acuity, suggesting objective anatomical recovery.

Functional Outcome

Best-corrected visual acuity improved from **3/60** at presentation to **6/6 (Partial)** after completion of treatment. The patient also reported complete resolution of central blurring and was able to resume routine visual activities without difficulty.

Anatomical Outcome

Fundus examination demonstrated a marked reduction in macular hemorrhage with restoration of the normal foveal appearance. Serial spectral-domain OCT showed progressive reduction in the hyper-reflective hemorrhagic lesion, normalization of retinal contour, and reduction in retinal thickness from **358 μm** to **261 μm**, indicating structural recovery of the

macula.

Safety Assessment

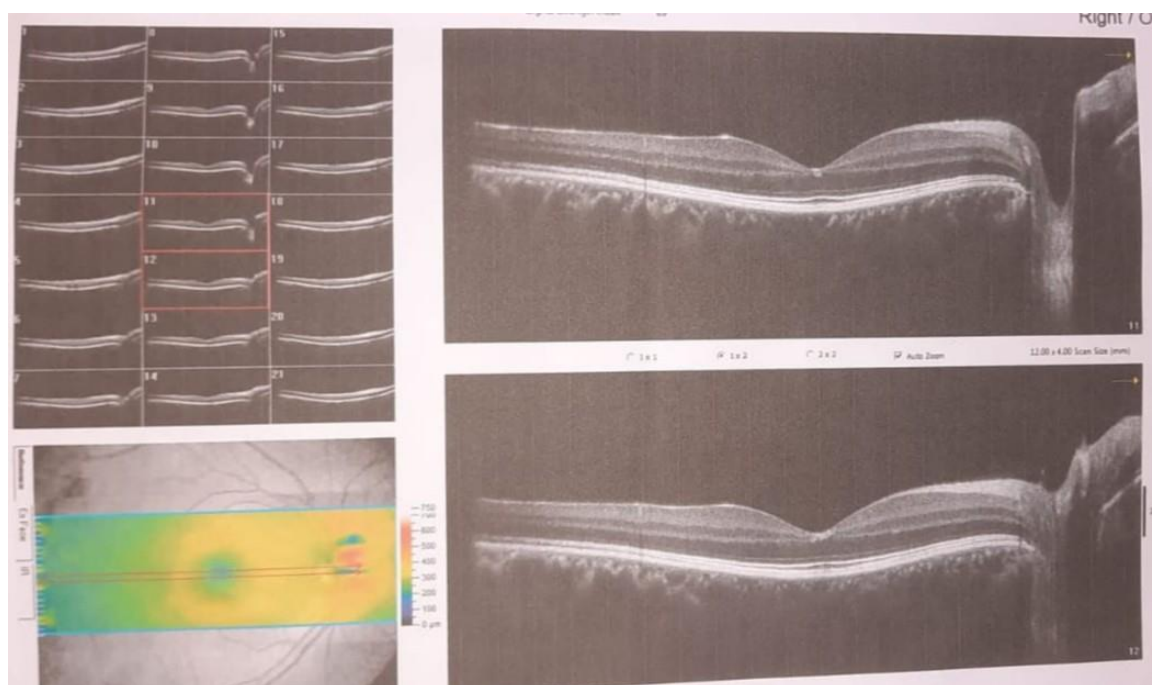
No ocular irritation, allergic reaction, elevation of intraocular pressure, systemic adverse effects, or treatment-related complications were observed during the treatment period or the four-week follow-up.

Follow-up

The patient was followed for an additional four weeks after completion of therapy. Visual acuity remained stable, and no recurrence of retinal hemorrhage or deterioration in SD-OCT findings was observed during the follow-up period.

Figure 2: SD-OCT of the right eye after completion of treatment demonstrating marked reduction of the hyper-reflective lesion, restoration of the foveal contour, and reduction in central macular thickness to 261 μm .

Suggested Figure Layout in the Manuscript



- | Figure | Description |
|----------|------------------------------------|
| Figure 1 | Fundus photograph before treatment |
| Figure 2 | OCT before treatment |
| Figure 3 | Fundus photograph after treatment |
| Figure 4 | OCT after treatment |

7. DISCUSSION

Macular hemorrhage is a clinically significant retinal condition characterized by extravasation of blood into the macular region, resulting in disruption of retinal architecture and impairment of central vision. Visual prognosis depends on the extent, location, and duration of the hemorrhage, as prolonged contact of blood with the neurosensory retina may induce photoreceptor damage through oxidative stress, inflammatory mediators, and iron toxicity. Therefore, timely management aimed at preserving retinal structure and function is essential.

The present case involved a 28-year-old male who developed sudden painless diminution of vision following a recent febrile illness. Fundus examination demonstrated a localized macular hemorrhage, while spectral-domain OCT confirmed a hyper-reflective lesion with increased central macular thickness. The absence of systemic vascular disease, diabetes mellitus, hypertension, trauma, or other known retinal pathology suggested a post-febrile retinal vascular insult as the probable underlying cause.^[4]

From an Ayurvedic perspective, this clinical presentation can be conceptually correlated with *Urdhvaga Raktapitta* involving the *Drishti Mandala*. Classical Ayurvedic texts describe *Raktapitta* as a disorder caused by aggravation of *Pitta Dosha*, which subsequently vitiates *Rakta Dhatu* because of their *Ashraya–Ashrayi* relationship. When vitiated *Rakta* manifests in organs situated above the clavicle (*Urdhvabhaga*), including the eye, the condition is termed *Urdhvaga Raktapitta*. The sudden onset of retinal hemorrhage following fever may therefore be interpreted as a manifestation of *Pitta–Rakta Dushti*, resulting in *Raktavaha Srotodushti* with *Vimargagamana* of *Rakta*.^[5,6]

The treatment protocol was designed according to the principles of *Raktapitta Chikitsa*, emphasizing *Pitta Shamana*, *Rakta Prasadana*, *Rakta Stambhana*, and restoration of tissue homeostasis. Initially, *Deepana–Pachana* therapy was administered to improve *Agni* and eliminate *Ama*, thereby creating a favourable physiological environment for subsequent *Shamana Chikitsa*. Although retinal hemorrhage is a localized ocular pathology, Ayurveda considers correction of systemic metabolic disturbances essential for achieving sustained therapeutic benefit.

The internal formulations were selected based on their classical indications and pharmacological properties. *Chandrakala Rasa* and *Mauktika Kamadugha Rasa* possess

cooling (*Sheeta*), *Pitta-Shamana*, and *Rakta-Prasadana* properties, making them suitable for hemorrhagic disorders attributed to aggravated *Pitta*. *Avipattikara Churna*, through its mild *Virechana* action, helps regulate *Pitta* and prevent its upward movement (*Urdhvaga Gati*). *Vasaguduchyadi Kashaya* is traditionally indicated in conditions involving *Pitta* and *Rakta Dushti* and is recognized for its anti-inflammatory and tissue-protective properties. The combination of *Dhamasa*, *Jatamansi*, *Vasa*, and *Godanti Bhasma* was selected to support *Rakta Prasadana*, reduce inflammatory changes, and promote physiological resolution of hemorrhagic pathology.^[9,10]

Local therapies also formed an important component of management. *Pratimarsha Nasya* with *Panchendriya Vardhana Taila* was administered because *Nasya* is considered the principal therapy for disorders affecting the *Urdhvajatrugata* region. It is traditionally believed to nourish sensory organs and support ocular function. *Raktachandanadi Bidalaka* was used as an adjunctive local therapy for its *Pitta-Shamana*, *Shothahara*, and *Rakta-Stambhana* properties, which may help alleviate local inflammatory changes.^[7,8]

Objective assessment using spectral-domain OCT provided valuable evidence of anatomical recovery. The reduction in central macular thickness from 358 μm to 261 μm , together with restoration of normal retinal contour, paralleled the improvement in best-corrected visual acuity from 3/60 to 6/6 (partial). The concordance between functional improvement and imaging findings strengthens the clinical observations documented in this case.

Modern ophthalmic management of isolated post-febrile macular hemorrhage is often conservative, with observation until spontaneous resolution occurs, provided no vision-threatening underlying pathology is identified. In the present case, the favorable temporal association between the structured Ayurvedic intervention and progressive clinical improvement suggests that the therapeutic regimen may have contributed to the observed recovery. However, owing to the inherent nature of a single case report, a definite causal relationship cannot be established, and spontaneous improvement cannot be completely excluded.

A notable strength of this report is the integration of classical Ayurvedic therapeutic principles with contemporary retinal imaging. The use of serial OCT enabled objective documentation of retinal structural changes throughout the treatment period, thereby improving the scientific rigor of the case. Such integration provides a useful framework for

evaluating traditional therapeutic interventions using modern diagnostic modalities.

The principal limitation of this report is that it represents the clinical outcome of a single patient without a control group. Consequently, the findings cannot be generalized to all cases of macular hemorrhage. Furthermore, the natural course of post-febrile retinal hemorrhage may include spontaneous resolution in some patients. Well-designed prospective studies involving larger sample sizes, standardized treatment protocols, longer follow-up, and multimodal retinal imaging are required to further evaluate the role of Ayurvedic management in retinal hemorrhagic disorders.

Serial SD-OCT imaging served as an objective method for monitoring anatomical recovery. Baseline OCT demonstrated a focal hyper-reflective lesion with increased central macular thickness, while follow-up imaging showed restoration of retinal morphology and reduction in retinal thickness. These structural changes paralleled the improvement in best-corrected visual acuity, supporting the clinical observations in the present case.

8. CONCLUSION

The present case demonstrates favorable functional and anatomical recovery in a patient with post-febrile macular hemorrhage managed using Ayurvedic principles of Raktapitta Chikitsa. The treatment protocol, comprising Deepana–Pachana, Shamana Aushadhi, Pratimarsha Nasya, Bidalaka, and adherence to Pathya–Apathya, was associated with marked improvement in best-corrected visual acuity and progressive resolution of retinal hemorrhage documented by serial fundus examination and spectral-domain Optical Coherence Tomography (OCT).^[11,12]

The reduction in central macular thickness from 358 μm to 261 μm , restoration of normal retinal architecture, and improvement of visual acuity from 3/60 to 6/6 (partial) indicate encouraging functional and structural outcomes. The use of OCT provided objective evidence for monitoring treatment response and enhanced the scientific documentation of this case.

Although spontaneous recovery may occur in selected cases of post-febrile macular hemorrhage, the favorable temporal association observed in this patient suggests that Ayurvedic intervention may have contributed to the clinical improvement. However, as this is a single case report, no definitive conclusions regarding efficacy can be drawn.

This case highlights the potential role of integrative ophthalmic practice, where classical

Ayurvedic therapeutic principles are evaluated using modern retinal imaging. Further prospective controlled clinical studies with larger sample sizes and longer follow-up are required to establish the safety, efficacy, and reproducibility of this therapeutic approach.

Clinical Significance

This case illustrates that Ayurvedic management based on Pitta-Shamana and Rakta-Prasadana principles, when objectively monitored using OCT, may have potential as a complementary approach in selected patients with post-febrile macular hemorrhage. Integration of traditional therapeutic concepts with contemporary retinal imaging can facilitate evidence-based documentation in Ayurvedic ophthalmology.^[11,12]

Learning Points

- Post-febrile macular hemorrhage can present with sudden painless diminution of central vision in young adults.
- Spectral-domain OCT is valuable for diagnosing and objectively monitoring retinal structural recovery.
- Ayurvedic management based on *Raktapitta Chikitsa Siddhanta* may be considered as a complementary therapeutic approach in carefully selected cases.
- Integration of classical Ayurvedic principles with modern ophthalmic investigations enhances the scientific quality of clinical documentation.
- Well-designed clinical studies are necessary before generalizing the findings of this single case.

Patient Consent

Written informed consent was obtained from the patient for publication of the clinical details and accompanying retinal images. Every effort has been made to protect the patient's identity and maintain confidentiality.

Ethical Considerations

As this manuscript describes a single clinical case managed during routine patient care, no experimental intervention was performed. Written informed consent for publication was obtained from the patient. The report has been prepared in accordance with the ethical principles of the Declaration of Helsinki.

Author Contributions

Dr. Aishwarya Suhas Sheth contributed to patient examination, diagnosis, clinical management, literature review, data collection, interpretation of findings, and preparation of the manuscript.

Dr. Santosh Rahinj supervised patient management, provided academic guidance, critically reviewed the manuscript, and approved the final version for publication.

Both authors have read and approved the final manuscript.

Conflict of Interest

The authors declare that there are no conflicts of interest related to this publication.

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