

## **AYURVEDIC MANAGEMENT OF CHRONIC SUPEROTEMPORAL BRANCH RETINAL VEIN OCCLUSION: A CASE REPORT**

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### **ABSTRACT**

Branch retinal vein occlusion (BRVO) is a common retinal vascular disorder and an important cause of visual impairment, often complicated by macular edema. Chronic cases may show persistent symptoms despite conventional treatment. *Ayurveda* does not describe BRVO as a distinct entity; however, its clinical features can be correlated with *Triteeyapatalagata Timira* involving *Raktavaha srotas*. A 55-year-old female presented with painless diminution of vision in the left eye for one year and was previously diagnosed with superotemporal BRVO with macular edema. She approached our Ayurveda hospital due to persistence of blurriness of vision. Based on Ayurvedic principles, the condition was managed with *Vata-Rakta shamana*, *srotoshodhana*, and *shothahara* therapies, including internal medications, *nasya*, and *kriyakalpas*. Following treatment, the patient showed improvement in visual acuity and partial resolution of retinal hemorrhages. This case

suggests that Ayurvedic management may serve as a supportive and rehabilitative approach in chronic BRVO with macular edema. Further clinical studies are required to validate these findings.

**KEYWORDS:** Branch Retinal Vein Occlusion, *Triteeyapatalagata timira*, *Kriyakalpa*.

## INTRODUCTION

Branch retinal vein occlusion (BRVO) is a common retinal vascular disorder and a significant cause of visual impairment in the middle-aged and elderly population. It occurs due to obstruction of a branch of the retinal vein, most commonly at arteriovenous crossing points, leading to venous congestion, retinal hemorrhages, and macular edema.<sup>[1,2]</sup> Among its subtypes, superotemporal BRVO is the most frequently observed and is often associated with involvement of the macular region, resulting in diminished vision.<sup>[1]</sup>

Macular edema is the leading cause of visual loss in BRVO and plays a crucial role in determining the visual prognosis. Conventional management includes intravitreal anti-vascular endothelial growth factor therapy, steroids, and laser photocoagulation;<sup>[3]</sup> however, chronic cases may show incomplete recovery or persistent symptoms despite treatment.<sup>[4]</sup> This necessitates exploration of complementary approaches aimed at improving retinal circulation and reducing edema.

In *Ayurveda*, although BRVO is not described as a distinct clinical entity, its features can be correlated with *triteeyapatalagata timira*<sup>[5]</sup> involving *Raktavaha srotas*. Vata and Rakta dushti with *srotorodha*<sup>[6]</sup> form the basic pathological basis of vascular disorders affecting the eye. Ayurvedic management focuses on *dosha shamana*, *srotoshodhana*, and *shothahara* measures to restore normal circulation and visual function.

The present case report highlights the role of Ayurvedic management in a chronic case of superotemporal branch retinal vein occlusion with macular edema, demonstrating its potential as a supportive and rehabilitative approach in retinal vascular disorders.

## CASE PRESENTATION

A 55-year-old female patient presented to the Outpatient Department of Shalakya Tantra, Sri Jayachamarajendra Ayurveda and Unani Hospital, Bengaluru, with complaints of sudden, painless blurring of vision for distant objects in the left eye since one year.

### History of Present Illness

The patient was apparently asymptomatic one year prior, following which she experienced a sudden onset of painless diminution of vision in the left eye, predominantly affecting distance vision. The visual disturbance was non-progressive over the past one year. There was no associated redness, burning sensation, pain, discharge, flashes, floaters, diplopia, or headache.

The patient had been diagnosed with superotemporal branch retinal vein occlusion (ST-BRVO) with macular edema in the left eye one year ago at a modern ophthalmology hospital. She received treatment there; however, details of the treatment were not available. As the visual symptoms persisted, the patient subsequently approached the Ayurveda hospital for further management.

### **Past Medical History**

The patient was a known case of hypothyroidism for the past 12 years and was on regular oral medication (Thyronorm 25 mg). There was no history of diabetes mellitus, hypertension, or other systemic illnesses.

### **Past Ocular History**

There was no history of ocular trauma, surgery, or allergic eye disease. No similar complaints were reported in the past.

### **Family History**

Family history was non-contributory, and all family members were reported to be healthy.

### **Ocular Examination**

On extraocular examination, both eyes appeared normal. Slit-lamp examination revealed normal lids, conjunctiva, cornea, anterior chamber, iris, and lens in both eyes.

Intraocular pressure (IOP) was within normal limits in both eyes.

### **Fundus Examination**

Fundus examination of the left eye revealed features suggestive of superotemporal branch retinal vein occlusion (ST-BRVO), consistent with the previous diagnosis. The right eye fundus was within normal limits.

### **Systemic Examination**

General physical and systemic examination did not reveal any abnormalities. Her pulse rate was 72 per min and Blood pressure was 120/80 mmHg.

**Table 1: Extra ocular examination.**

Structure	Examination	Right Eye	Left eye
Eyelids	Position	Normal	Normal
	Movements	Normal	Normal
	Lid margin	NAD	NAD
Lacrimal apparatus	Lacrimal Sac	NAD	NAD
	Puncta	Normal	Normal
Eyeball	Position	Symmetrically placed	Symmetrically placed
	Visual Axis	Normal	Normal
	Size	Normal	Normal
	Movements	Normal	Normal

**Table 2: Slit lamp examination.**

Structure	Examination	Right Eye	Left eye
Conjunctiva	Congestion	Absent	Absent
	Follicle	Absent	Absent
	Papillae	Absent	Absent
Cornea	Size	Normal	Normal
	Shape	Circular	Circular
	Sheen	Present	Present
	Surface	Smooth	Smooth
Anterior Chamber	Depth	Normal	Normal
Pupil	Size	3mm	3mm
	Shape	Round, Regular	Round, Regular
	Reactions	Normal	Normal
Iris	Color	Brown	Brown
	Pattern	Normal	Normal
Lens	Transparency	Clear	Clear

**Table 3: Visual acuity.**

Visual acuity	Unaided Distant vision	Pin hole	BCVA	Near Vision
Both eye	6/12p	-	6/6	N8
Right eye	6/12p	6/9	6/6	N8
Left eye	CF @ 1m	No Improvement	2/60	N36

**Table 4: Fundus examination.**

Structure	Right eye	Left eye
Media	Clear	Clear
Optic disc	Normal	Normal
Macula	Foveal Reflex +	No Foveal reflex Flame shaped hemorrhages at supero temporal region
Retinal Blood vessels	Normal	Tortuous
Background	Normal	Normal

### Diagnosis

Based on the history and clinical findings, the patient was diagnosed as a case of:

Superotemporal Branch Retinal Vein Occlusion (ST-BRVO) with macular edema in the left eye, chronic in nature.

### ***NIDANA PANCHAKA***

#### ***Nidana***

Based on Ayurvedic principles, the probable etiological factors involved in this case are:

- *Vata* aggravating factors such as mental stress, irregular sleep, and advancing age
- Chronic systemic illness leading to *Rakta dushti* (impurity of blood), in this case long-standing hypothyroidism
- *Mandagni* and *ama* formation causing obstruction in *Sukshma srotas*.
- *Srotorodha*<sup>[6]</sup> (obstruction of channels) in *Raktavaha srotas*
- Degenerative changes in blood vessels leading to loss of vascular elasticity

These factors result in *Vata* predominant *Tridosha* involvement with *Rakta dushti*, predisposing to vascular occlusion in the eye.

#### ***Purvarupa***

Prodromal symptoms were not clearly elicited in this patient. However, possible symptoms described in Ayurveda include:

- Heaviness of the eye
- Mild or intermittent blurring of vision
- Eye fatigue

These symptoms may go unnoticed until the onset of the disease.

#### ***Rupa***

The clinical features observed in the present case include:

- Sudden, painless diminution of vision in the left eye
- Blurring of vision for distant objects
- Absence of pain, redness, burning sensation, or discharge

These symptoms can be correlated to *tritya patalagata timira*.<sup>[5]</sup>

#### ***Samprapti***

Due to long-standing *nidana sevana* such as advancing age, mental stress, irregular sleep, and the presence of a chronic systemic disorder, *Vata dosha* becomes aggravated. The aggravated *Vata*, because of its *chala* and *ruksha guna*, disturbs the normal circulation of *Rakta dhatus*.

and initiates *Rakta dushti*. Simultaneously, *mandagni* at the level of *dhatu* metabolism leads to *ama* formation, which further vitiates *Rakta* and increases *srotorodha*.

The vitiated *Vata* and *Rakta* together enter the *Raktavaha srotas* and produce *srotodushti* in the form of *sanga* (obstruction). As the eye is a highly vascular and *sira-pradhana* organ, the pathological process localizes in the ocular vessels, particularly the retinal veins. Due to *sira-avarodha*, there is *stagnation of Rakta*, increased pressure within the affected *sira*, and impairment of normal circulation.

As a result of this *avarodha*, *kleda* accumulates in the retinal tissue, leading to *shotha* in the macular region, which clinically manifests as macular edema. The involvement of *Drishti mandala* and disruption of normal nourishment of the visual apparatus results in *avyaktadarshana* and *drishtikshaya*.<sup>[7]</sup> The chronicity of the condition further leads to *sthana-samshraya* and stabilization of the disease, making it a *Vata-Rakta pradhana triteeya patalagata timira*, corresponding to superotemporal branch retinal vein occlusion with macular edema.

### Ayurvedic Diagnosis

- The condition can be diagnosed as a *Vata* predominant *tridoshaja triteeyapatalagata timira* associated with *Rakta* affecting the eye, involving *Raktavaha srotas*, corresponding to Branch Retinal Vein Occlusion with macular edema.

**Table 5: Treatment given.**

Timeline	Treatment Given	Observation
Day 1 (03/01/2025)		UADVA: 6/12p OD, CF@1m OS. PH: 6/9 OD, NIPH OS. UANVA: N8 OD, N36 OS. BCDVA: 6/6 OD, 2/60 OS. Fundus examination: features of ST BRVO
Day 1- 5 (03/01/2025- 07/01/2025)	<i>Bidalaka</i> with <i>Mukkadi Choorna</i> and <i>Durva Swarasa</i> <i>Shirokipichu</i> with <i>Balahathadi taila</i> <i>Lavana Bhaskara choorna</i> ½ tsp BD before food <i>Mahavasakadi kashaya</i> 15ml BD Before Food with 30 ml of warm water <i>Mahamajistadi kashaya</i> 15 ml BD	UADVA: 6/9p OD, 4/60OS. PH: 6/9 OD, NIPH OS. UANVA: N8 OD, N24p OS. BCDVA: 6/6 OD, 2/60 OS.

	Before food with 30 ml of warm water	
Day 6 - 12(08/01/2025- 14/01/2025)	<i>Pradhamana Nasya</i> with <i>panchamritaloha guggulu choorna</i> 1 pinch in each nostril	UADVA: 6/6p OD, 6/60OS. PH: 6/6 OD, NIPH OS. UANVA: N8 OD, N18p OS. BCDVA: 6/6 OD, 6/60 OS.
Day 13 – 19 (15/01/2025- 21/01/2025)	<i>Nasya</i> with <i>Anutaila</i> 12 drops in each nostril <i>Bidalaka</i> with <i>mukkadi choorna</i> and <i>Durva Swarasa</i> Tab <i>Punarnava Mandura</i> 1 BD After food <i>Gokshuradi Kashaya</i> 20 ml BD before food with 40 ml of warm water	UADVA: 6/6p OD, 6/36pOS. PH: 6/6 OD, NIPH OS. UANVA: N8 OD, N18 OS. BCDVA: 6/6 OD, 6/60 OS. Fundus examination: mild resolution in flame shaped hemorrhages

## RESULTS

Following Ayurvedic management, the patient showed gradual improvement in visual acuity in the left eye. Unaided distant vision improved from counting fingers at 1 meter to 6/36 (partial), with improvement in near vision from N36 to N18. The right eye remained normal throughout the treatment period.

Fundus examination of the left eye showed mild resolution of flame-shaped hemorrhages in the superotemporal quadrant, suggesting reduction in venous congestion. Intraocular pressure remained within normal limits in both eyes. No adverse events were observed during treatment.

## DISCUSSION

Branch retinal vein occlusion (BRVO) is a common retinal vascular disorder caused by venous compression at arteriovenous crossings, resulting in venous stasis, hemorrhage, and macular edema. The superotemporal quadrant is most frequently affected, as observed in the present case. Macular edema remains the primary cause of visual impairment and largely determines the prognosis.

In this case, a 55-year-old female presented with chronic superotemporal BRVO with macular edema of one-year duration. Although classical systemic risk factors such as hypertension and diabetes mellitus were absent, the presence of long-standing hypothyroidism may have contributed to microvascular dysfunction and impaired retinal circulation. Persistence of symptoms despite prior modern treatment highlights the chronic nature of the disease and the need for supportive therapeutic approaches.

From an Ayurvedic perspective, the condition can be understood as a *Vata*-predominant *Triteeyapatalagata timira* associated with *Rakta dushti* involving *Raktavaha srotas*. Obstruction of ocular vessels (*sanga*) leads to stagnation of *Rakta* and accumulation of *kleda*, manifesting as macular edema and painless diminution of vision, comparable to *Timira* affecting deeper *patalas*.

The Ayurvedic treatment adopted in this case focused on *Vata-Rakta shamana*, *srotoshodhana*, and *shothahara* measures through internal medications, *nasya*, and *kriyakalpa*<sup>8</sup> (local ocular therapies). The patient showed gradual improvement in visual acuity along with partial resolution of retinal hemorrhages, suggesting improved retinal circulation and reduction of edema.

This case indicates that Ayurvedic interventions may serve as effective supportive therapy in chronic BRVO with macular edema. Further studies with larger sample sizes and objective imaging parameters are required to substantiate these findings.

## CONCLUSION

This case demonstrates that chronic superotemporal branch retinal vein occlusion with macular edema can be effectively managed using an Ayurvedic approach based on classical principles. *Vata-Rakta* predominant *Triteeyapatalagata timira* involving *Raktavaha srotas* provides a logical Ayurvedic explanation for the disease pathology. The integrative treatment protocol focusing on *Vata-Rakta shamana*, *srotoshodhana*, and *shothahara* measures resulted in improvement in visual acuity and partial resolution of retinal hemorrhages. Ayurvedic interventions may thus serve as a beneficial supportive and rehabilitative modality in the management of chronic BRVO. However, larger clinical studies with objective assessment tools are required to establish the role of Ayurveda in retinal vascular disorders.

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