



ISSN 2456-3110

Vol 8 · Issue 7

July 2023

Journal of
**Ayurveda and Integrated
Medical Sciences**

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences



Maharshi Charaka
Ayurveda

Indexed

Management of Branch Retinal Vein Occlusion (BRVO) in Ayurveda - A Case Study

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ABSTRACT

Retina is the innermost tunic of the Eyeball; it is thin, delicate and transparent membrane. It is the most highly developed tissue of the Eye. Retinal arteriole and Vein share an adventitial sheath and because of Arteriolosclerosis thickening of arteriole is associated with compression of the Vein and this intern causes secondary changes including Venous endothelial cell loss, Thrombus formation and Occlusion.^[1] These changes appear in both arteriole and vein that contribute to Retinal Vein Occlusions. Branch Retinal Vein Occlusion caused when a single branch of the central vein is blocked due to an embolism and spasm. Retinal Vein Occlusion is the second most common retinal disease after Diabetic Retinopathy. BRVO has a good prognosis of 50 to 60% of eyes are reported to have an improved Visual Acuity or better.

Key words: Branch Retinal Vein Occlusion, Arteriolosclerosis, Embolism, Spasm.

INTRODUCTION

Branch Retinal Vein Occlusion (BRVO) is an abnormal arteriovenous crossing with Vein compression. It is more common than the central retinal vein occlusion. It occurs due to Hemispheric Occlusion, Quadrantic Occlusion and Small branch Occlusion.^[2]

Features of Branch Retinal Vein Occlusion are: Vision is affected when the macular area is involved; Retinal Oedema and Retinal Haemorrhages are limited to the area drained by the affected vein, Secondary Glaucoma changes rarely occur in some cases. Chronic Macular

Oedema and Neovascularization may occur as complications of BRVO in about one third cases.

CASE REPORT

A 65 years old female patient presented to us at outpatient department with the complaint of sudden blurriness of vision for distant objects in left eye from 2 months, which was not associated with pain. But the patient had associated complaints like headache on left side of the head from 2 months; she noticed the hazy vision in left eye as if all the objects are filled with the water from 1 month. From 20 days she experienced distorted vision, dark spots in front of left eye with watering of eyes. There was no history of ocular trauma and allergies. She was operated for cataract 5 years back in both eyes and all-family members are said to be healthy. Patient is not a known case of Diabetes Mellitus, Hypertension or any other systemic illness and does not present any complaints related to retinal neovascularization and glaucomatous changes of eyes.

External ocular examination and slit lamp examination was normal. Intra ocular pressure (IOP) was normal in

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Submission Date: 12/05/2023 Accepted Date: 21/06/2023

Access this article online

Quick Response Code



Website: www.jaims.in

DOI: [10.21760/jaims.8.7.31](https://doi.org/10.21760/jaims.8.7.31)

both the eyes and glaucomatous changes are not seen in both eyes.

Fundus angiography reveals tortuous superotemporal^[3,4] branch retinal veins with dot and flame shaped haemorrhages with yellowish retinal hard exudates. A cotton wool exudate was seen along the inferotemporal arcade. Macula showed loss of normal foveal reflex with thickening due to macular oedema. Optical coherence tomography reveals cystoid macular oedema in left eye. Angiographic findings and optical coherence tomography of right eye was normal.

Systemic examination of the patient was normal. Her blood pressure was 120/80 mmHg and pulse rate was 68 beats/ minute.

Table 1: External ocular examination

Parts	Examination	Right eye	Left eye
Eyelids	Position	Normal	Normal
	Movements	Normal	Normal
	Lid Margin	Normal	Normal
Lacrimal Apparatus	Lacrimal Sac	Normal	Normal
	Lacrimal Puncta	Normal	Normal
Eyeball	Position	Symmetrically Placed	Symmetrically Placed
	Visual Axis	Normal	Normal
	Size	Normal	Normal
	Movements	Normal	Normal

Table 2: Slit lamp examination

Part	Examination	Right Eye	Left Eye
Conjunctiva	Congestion	Absent	Absent
	Follicle	Absent	Absent
	Pappillae	Absent	Absent
Cornea	Size	Normal	Normal
	Shape	Circular	Circular
	Sheen	Present	Present

	Surface	Smooth	Smooth
Anterior Chamber	Depth	Normal	Normal
Pupil	Size	Normal	Normal
	Shape	Circular	Circular
	Reactions	Present	Present
Iris	Colour	Dark Brown	Dark Brown
	Pattern	Normal	Normal
Lens	Transparency	IOL +	IOL +

Table 3: Visual Acuity

Without Specs	Distant Vision	Near Vision
Both Eyes	6/24 P	N8
Right Eye	6/9	N8
Left Eye	6/24 P	N12 P

Table 4: Fundus examination

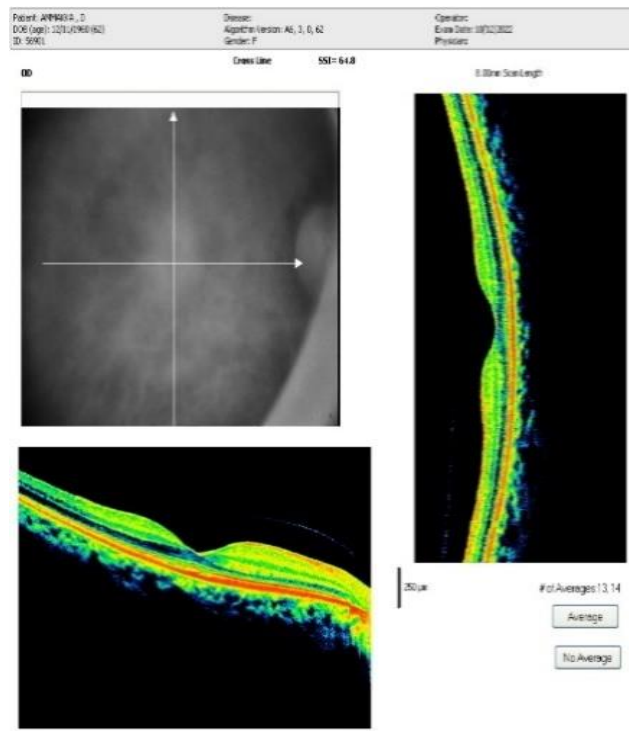
Part	Right Eye	Left Eye
Media	Clear	Clear
Optic Disc	Normal	Normal
Macula	Foveal Reflex +	No Foveal Reflex Flame Shaped Haemorrhages + Above Macular Area
Retinal Blood Vessels	Normal	Tortuous Veins
General Background	Normal	Normal

Table 5: Investigations

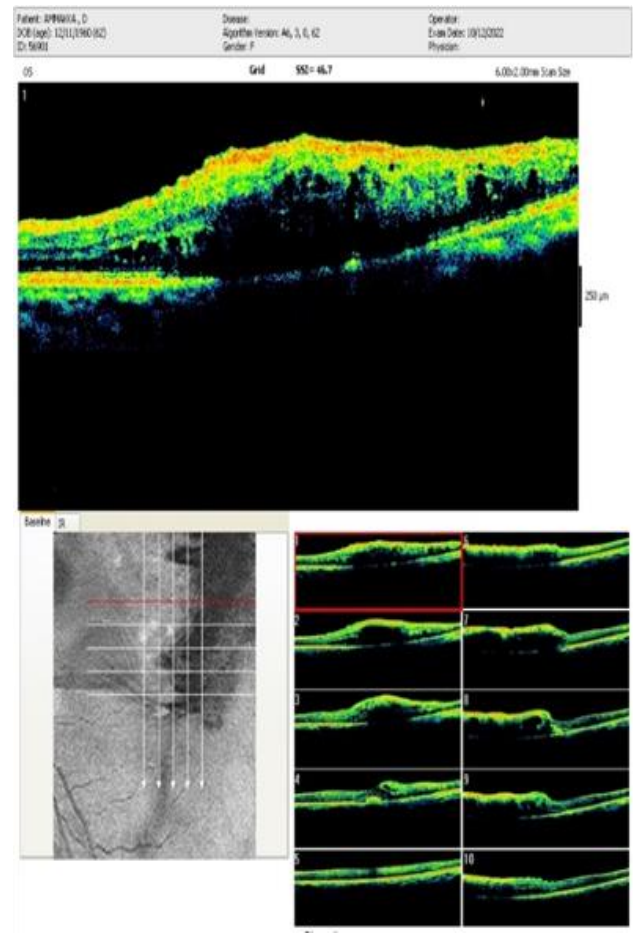
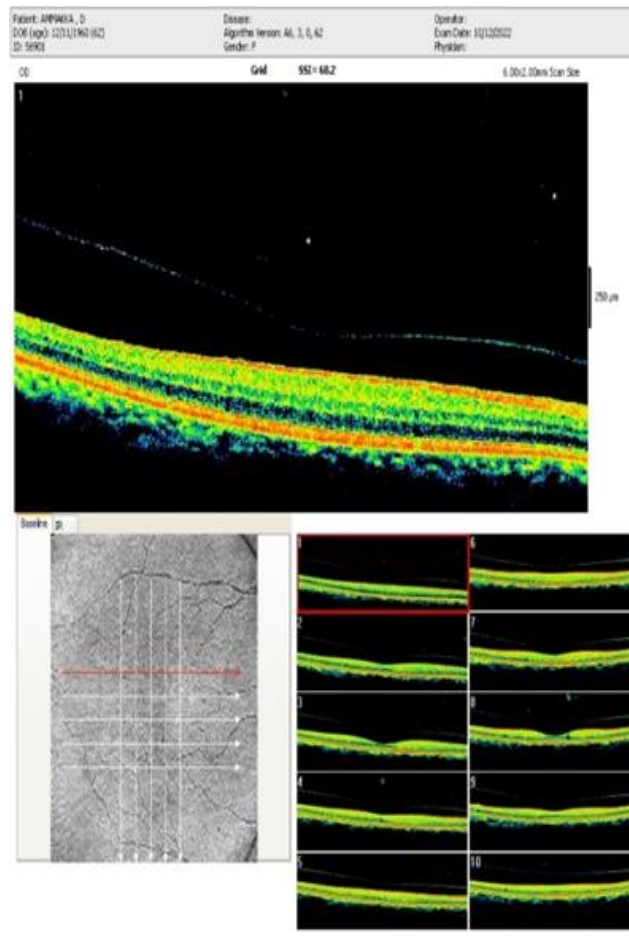
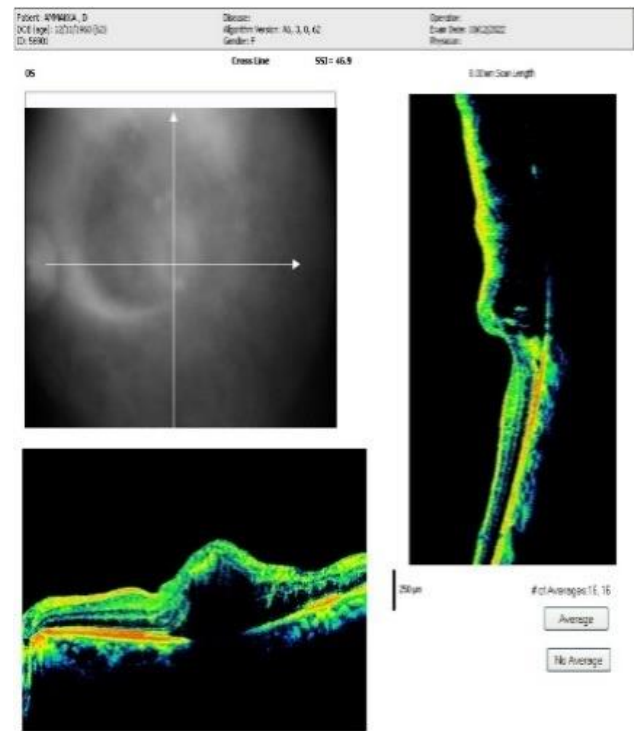
Oct findings: ON 10/12/2022 reveals Cystoid Macular Oedema.

IOP in Right eye - 12mmhg and Left eye - 18mmhg

Picture 1: OCT



Picture 2: OCT



A complete haematological investigation reveals normal results.

Nidana Panchaka

Nidana

- *Ushnabi Taptasya Jala Praveshat*^[5] - patient had habit of drinking cold water immediately after field work in hot sun.
- *Chinta* (stress)^[5]
- Eating spicy and sour items^[5]
- *Vardhakya*.

Poorva Roopa

Netra Avilatha, Shirashoola, Ashrusrava^[6]

Roopa

Avyaktha Darshana, Vyavidhani, Bhramantiva Sa Pashyat^[7]

Samprapthi

Due to *Nidanas*



Vata Pradhana Tridosha Prakopa leading to *Jatharagni* vitiation



Moves upwards through *Rupavaha Siras*



Takes *Sthanasamshraya* in *Dristimandala* of *Netra*



Tritiya Patalagatha Timira

Samprapthi Ghatakas

<i>Dosha</i>	<i>Tridosha</i>
<i>Dooshya</i>	<i>Rasa, Raktha</i>
<i>Agni</i>	<i>Jataragni Dushti</i>
<i>Ama</i>	<i>Jataragni Janya Aama</i>
<i>Srotas</i>	<i>Rasavaha-Raktavaha</i>

<i>Srotodushti Prakara</i>	<i>Sangha</i>
<i>Udbhava Sthana</i>	<i>Amashaya</i>
<i>Sanchara Sthana</i>	<i>Urdhwagami Siras</i>
<i>Rogamarga</i>	<i>Madhyama</i>
<i>Adhithana</i>	<i>Netra</i>
<i>Vyaktasthana</i>	<i>Netra Patala</i>
<i>Sadyasadhyata</i>	<i>Krichrasadhya</i>

Treatment

Date	Treatment Given	Observations
22-12-2022 to 26-12-2022	1. <i>Bidalaka</i> with <i>Triphala</i> + <i>Yasti Choorana</i> for 5 days 2. Tab. <i>Triphala Guggulu</i> (1-1-1) for 5 days 3. Tab. <i>Oxitard</i> (1-0-1) for 5 days.	Dv: B.E - 6/24 P R.E - 6/9 L.E - 6/24 P Nv: BE: N8 RE: N8 LE: N12 P
31-12-2022 to 10-01-2023	<i>Shodana</i> given - <i>Virechana</i> <i>Snehapana</i> with <i>Mahatriphala Ghritha</i> for 3 Days Followed by <i>Vishrama Kala</i> for 3 days then <i>Virechana</i> with <i>Trivrit Lehya</i> given.	Visual Acuity of both eyes improved Dv: B.E - 6/18 P R.E - 6/9 L.E - 6/24 Nv: BE: N8 RE: N8 LE: N12
11-01-2023 to 19-01-2023	<i>Vasa Guduchyadi Kashaya</i> (3tsp - 0 - 3tsp)	--
19-01-2023 to 01-02-2023	<i>Vasa Guduchyadi Kashaya</i> (3tsp - 0 - 3tsp) <i>Darvyadi Anjana</i> once daily	Receded haemorrhages seen Floaters not seen Dv: BE - 6/18 RE - 6/9 LE - 6/18 p

02-02-2023 to 07-02-2023	<i>Tarpana</i> with <i>Mahatrichaladi Ghrita</i> for 5 days	No Distorted vision, distant vision Remain same as on 01-02-23. Nv - BE - N8 RE - N8 LE - N10
07 - 02 - 2023	<i>Vasa Guduchyadi Kashaya</i> (3tsp - 0 - 3tsp) continue. <i>Darvyadi Anjana</i> application once daily also continue Syrup. Cardorium Plus (1tsp - 0 - 1tsp)	Dv - BE - 6/12 P RE - 6/9 LE - 6/12 P Nv - BE - N8 RE - N8 LE - N10

At the time of discharge, her BCVA was 6/12p, distorted vision was not present and patient was advised to take medications for 1 month.

DISCUSSION

BRVO caused due to venous insufficiency which develops in a portion of retina when a single branch of central vein is blocked, where the vein shares a common sheath with the artery so that two are affected by the same sclerotic process, the compression of the vein is thought to cause turbulent blood flow that leads to thrombus formation, oedema and flame shaped haemorrhages are limited to the area supplied by the vein. In this case superotemporal quadrant is mainly affected.

In this case, at first *Virechana - Shodana* treatment was advised which helps in removing obstruction and retention of fluid in retina, there by reduces oedema. Internally *Vasa Guduchyadi Kashaya* given, the chemical constituents which are present in the *Kashaya* inhibits proliferation of endothelial cells and neovascularization, acts as anti - VEGF and anti - oxidant which reverse the cellular damage by inhibiting the excessive oxidative stress to the cells due to excess of free radicles and helps in prevention of

haemorrhages. The *Madhura* and *Rasayana* properties of *Guduchi* and *Amalaki* rich in vitamin C tightens the endothelial barrier and maintains its integrity of the capillary fragility thus has definite role in treating the haemorrhages. The *Darvyadi Anjana*, which is advised helps to check obstruction and maintains good vision. The *Tarpana - Kriyakalpa* treatment which helps in improving visual acuity.

CONCLUSION

A case of BRVO which is referred to our hospital presents same features of *Tritiya Patalagatha Timira*, *Vataja* predominant having *Vyavidhani Cha Manava* i.e., distorted vision and *Aavilatha* i.e., the objects look like as if filled with water. It is treated with *Virechana Karma*, *Tarpana - a Kriyakalpa* procedure and with internal medications. With this treatment the distorted vision got corrected, visual acuity of the patient got improved from 6/24p to 6/12p and floaters disappeared, headache got relieved and on fundus examination haemorrhages are receded. *Vasaguduchyadi Kashaya* having anti -VEGF property helped in reducing macular oedema. On the basis of this case study, it can be concluded that *Ayurvedic* treatment modalities along with internal medication is significantly effective in the management of BRVO.

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How to cite this article: Supriya TS, Sujathamma K. Management of Branch Retinal Vein Occlusion (BRVO) in Ayurveda - A Case Study. J Ayurveda Integr Med Sci 2023;07:163-168.

<http://dx.doi.org/10.21760/jaims.8.7.31>

Source of Support: Nil, **Conflict of Interest:** None declared.
