

The Intersection of Blood Pressure and Vision: Ayurvedic Intervention for Hypertensive Retinopathy: A Case Study

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Abstract:

Hypertensive retinopathy is a condition characterized by a spectrum of retinal vascular signs in people with elevated blood pressure. Systemic hypertension has an effect on the posterior segment of the eye such as hypertensive choroidopathy, hypertensive retinopathy, and hypertensive optic disc oedema. This case report describes a male patient aged about 29 years presenting with progressive and sudden visual disturbance with history of Hypertension and diabetes mellitus. Ophthalmic investigations revealed Hypertensive retinopathy of Grade IV. *Ayurvedic* interventions utilized in this case includes *Nasya* therapy along with *Netra Kriyakalpa*, specialized ocular procedures aimed at promoting eye health effectively. An effort has been to document and validate a comprehensive case on Hypertensive retinopathy with clinical presentation and management through ayurvedic approach and its outcome.

Keywords: Hypertensive retinopathy, *Timira*, Blood pressure, *Kriyakalpa*.

Introduction:

Hypertensive retinopathy is a serious ocular complication caused by persistently elevated blood pressure, leading to progressive damage to the retinal blood vessels. It develops due to increased systemic vascular resistance, resulting in narrowing, thickening, and eventual rupture of the retinal arteries [1]. If left untreated, hypertensive retinopathy can lead to vision impairment, retinal haemorrhages, optic nerve damage, in severe cases even complete loss of vision.

In *Ayurvedic* perspective, Hypertensive retinopathy is not explained as separate disease entity but can be understood as a disorder of the *Raktavaha Srotas* (the channels responsible for blood circulation) and *Dristigata roga* due to *Tridosha Dusti*, predominantly *Vata* and *Pitta Dosha* along with *Rasa and Raktha Dhatu Dusti*. Impaired *Rasa Dhatu* can lead to poor nourishment of the retinal tissues, contributing to degenerative changes. As *Vata* governs the circulation, *Dusti* of *Vata Dosha* leads to abnormal blood flow and pressure variation [2]. *Pitta* is responsible for the metabolism and has a *Asrayaasri bhava* with *Raktha Dosha* [3] any abnormality of *Pitta Dosha* will lead inflammation affecting retinal blood vessels and quality of blood leading haemorrhages. As there is predominant involvement of *Pitta Dosha* it can be considered as *Pitta Pradhana Sannipathaja Timira* along with *Raktha Dosha*.

CASE REPORT:

A male patient aged about 29 years Known case of Type II diabetes mellitus and Hypertension for the past

three years was in good health until two months ago, developed with severe abdominal pain associated with 4-5 episodes of vomiting and was unable to consume anything orally. Seeking medical help, he visited a nearby clinic and was admitted for a day. On the same day, he began experiencing blurred vision while viewing distant objects in both eyes. Over the next two days, the blurriness worsened, affecting both near and distant vision. He then consulted an allopathic eye hospital for evaluation, where, after a thorough clinical examination and investigations, he was prescribed allopathic medication. However, he declined the treatment and instead sought care at SDMIAH for further management.

Poorva Vyadhi Vrittanta:

History of Tuberculosis 3 years back (Undergone ATT)

Vayathika Vrittanta:

Patient consumes mixed diet (non-vegetarian food twice a week), predominately food consists of Ruksha, *Katu* and *Amla rasa*. *Vihara*: Expose of Screen time is more than 7 hours due to job nature and also has a practice of *Anasana* (not having food when hungry). *Nidra* was Sound sleep and there were no any identified habits such as smoking or alcohol consumption.

Asta Sthana Pariksha:

- *Nadi*: *Kapha Pittaja*
- *Sparsha*: *Prakruta*
- *Shabdha*: *Prakrutha*
- *Akruthi*: *Prakruta*
- *Drik*: *Vaikruta*
- *Mootra*: 5-6 times/day
- *Mala*: Once in a day
- *Jihva*: *Lipta*

Samanya Pariksha:

- **Built**: Moderately built
- **Nourishment**: Moderately-nourished
- **Pallor**: Present
- **Icterus**: Absent
- **Clubbing**: Absent
- **Lymphadenopathy**: Absent
- **Oedema**: Absent
- **Cyanosis**: Absent
- **Tongue**: coated
- **B.P**: 150/90 mmHg
- **Temperature**: Afebrile
- **Pulse rate**: 80 bpm
- **Respiratory rate**: 14 cycles/min
- **Height**: 160 cms
- **Weight**: 62 kgs

Examination of Eye:

Structure	Examination	Right eye	Left eye
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Eyebrows	Cilia	Black, abnormalities	No
	Level	Normal	Normal
Orbit	Inspection	Normal	Normal
	Palpation	No tenderness	No tenderness
Eyeball	Position	Within orbit	Within orbit
	Visual axis	Central	Central
	Alignment	Central	Central
	Movements	Within limits	Within limits
Eyelids	Position	Upper lid covers 1/6 th of cornea, Lower lid touches the limbus	Upper lid covers 1/6 th of cornea, Lower lid touches the limbus
	Movements	Normal	Normal
	Eyelashes	No matted eyelashes	No matted eyelashes
Conjunctiva	Bulbar Conjunctiva	No congestion	No congestion
	Palpebral conjunctiva	No foreign body sensation and congestion	No foreign body sensation and congestion
Limbus	Margin	Regular	Regular
Sclera	Discoloration	Absent	Absent
	Surface	Normal	Normal
	Nodule	Absent	Absent
Cornea	Transparency	Transparent	Transparent
	Sensation	Intact	Intact
	Vascularisation	Absent	Absent
Iris	Colour	Brown	Brown
	Pattern	Crypts-Normal	Crypts-Normal
Pupil	Size	3-4 mm	3-4 mm
	Shape	Round	Round
	Position	Central	Central
	Margin	Regular	Regular
Pupillary reaction	Light reflex	Intact	Intact
Anterior chamber	Depth	Deep	Deep
Lens	Transparency	Transparent	Transparent
	Position	Central	Central
	Colour	Colourless	Colourless
Retina	Background	Cotton wool spots ++ Flame-shaped haemorrhage	Cotton wool spots Dot-blot haemorrhage

	CD Ratio	Optic disc oedematous	Optic disc oedematous
	AV changes	Arteriolar narrowing	Arteriolar narrowing
	Macula	Exudates around macula-Macular star	Exudated around macula-Macular star

Investigation:

Blood routine- Hemoglobin 9.8 gm/dl, FBS:121mg/dl, PPBS:191 mg/dl

Fundus image revealed- Cotton wool spots, Haemorrhage, optic disc oedema, Macular star, Arteriolar narrowing (RE)

Cotton wool spots, Dot-blot Haemorrhage, optic disc oedema, Macular star, Arteriolar narrowing (LE)

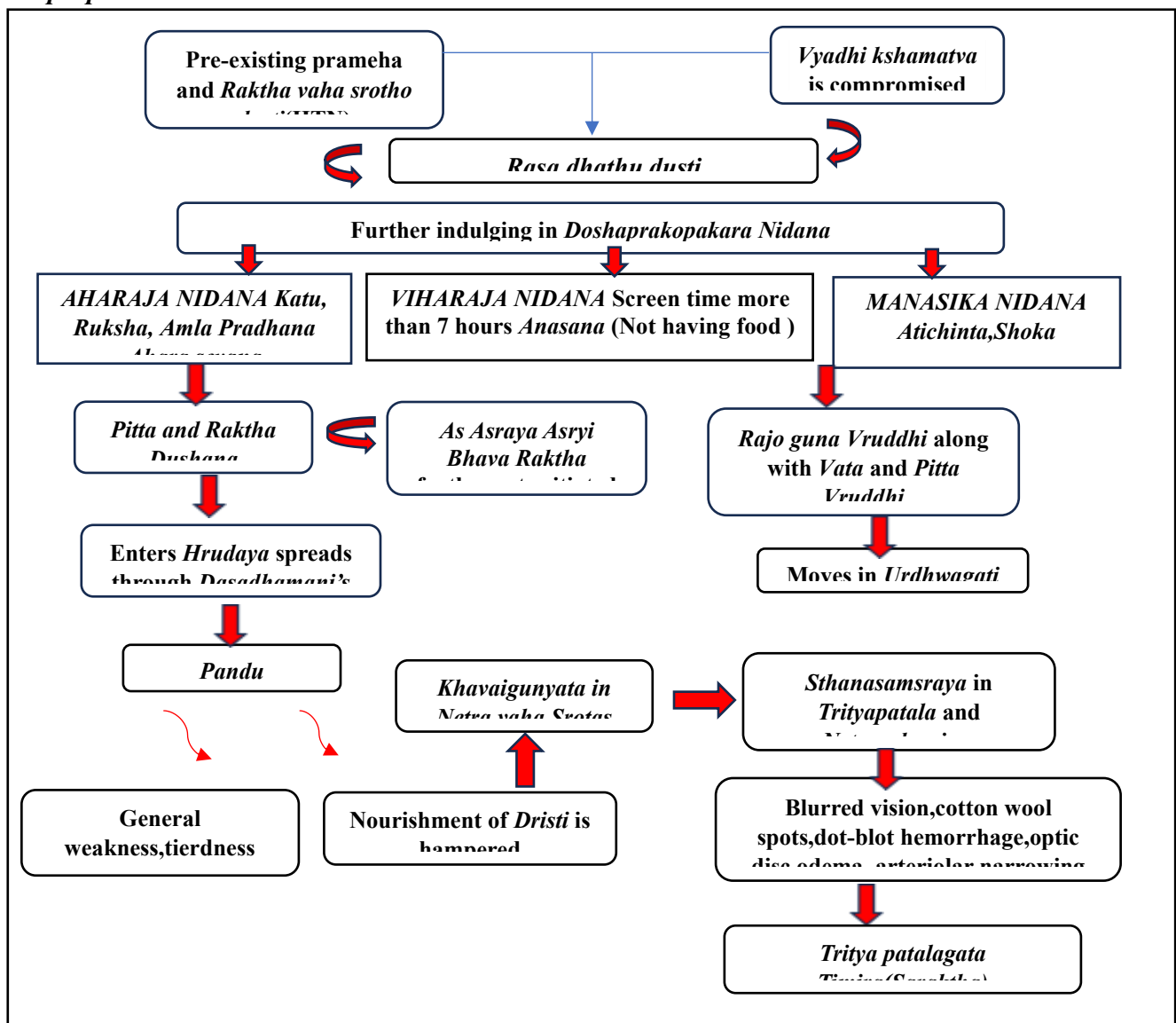
OCT Macula: Serous detachment of macula (BE)

Roga Pariksha:

Nidana: Ruksha, Katu, amla ahara Sevan, excessive screen time.

Purvarupa: Avyakta (Sudden vision loss)

Samprapthi:



Samprapthi Ghataka:

Dosha: Raktha Pradhana Tridosha

Dushya: Rasa, Rakta

Agni: Dhathuvagni, Jataragni

Srotas: Rasavaha, Rakthavaha

Srotodusti prakara: Sanga, vimarga gamana

Udbhava Sthana: Amashaya

Vyaktha Sthana: Dristi, Netra dhamani

Sanchara Sthana: Netra

Rogamarga: Madhyama

Sadyasadhyata: Kruchra sadya

Rupa^[4]

सन्निपातेन चित्राणि विप्लुतानि च पश्यति ||

बहुधा वा द्विधा वाऽपि

सर्वाण्येव समन्ततः |

हीनाधिकाङ्गान्यथवा ज्योतीष्यपि च पश्यति ||

तथा रक्तेन रक्तानि तमांसि विविधानि च || हरितश्यावकृष्णानि धूमधूमाणि चेक्षते |

Blurred vision, missing parts when visualizing an object

Haemorrhages, Cotton wool spots, optic disc oedema in the fundus (Dristi).

Chikitsa Sutra of Pittaja and Rakthaja Timira^[5]

हविर्हितं क्षीरभवं तु पैत्तिके वदन्ति नस्ये मधुरौषधैः कृतम् |

तत्तर्पणे चैव हितं प्रयोजितं सजाङ्गलस्तेषु च यः पुटाह्वयः ||

13/11/24 & 30/12/24 –Same treatment adopted for 7 days

As a Urdhawajatrugata Pradhana Chikitsa Nasya adopted with Yastimadhu Ksheerapaka 8-0-8 drops to both the nostrils followed by Netra Kriyakalpa like Bidalaka with Triphala, Yastimadhu, Lodhra mixed with Shigru swarasa, Seka with Triphala and Madhuyasti Kashaya, Tarpana with Kashyapa Ghrita (5 days) followed by Madhuragana siddha Prasadana Putapaka (Last 2 days) Takradhara (Takra with Amla+ Musta+Lodhra+Ashwagandha+Guduchi churna) and Shirothalam with asna+Amalaki+Ashwagandha+Jatamamsi churna+ Punarnava swarasa. One sitting of Jaloukavacharna on the last day (Near Apanga sandhi).

Shamana Aushadhi

<p>Sameera Panchaka Kashaya 10ml-0-10ml (B/F) with 10 ml warm water.</p> <p>Kaishora guggulu DS 1-0-1 (A/F)</p> <p>Prabhakara vati 1-0-1 (A/F)</p> <p>Chadraprabhava vati 1-0-1(A/F)</p> <p>Sarpagandha vati 1-0-1 (A/F)</p> <p>Chandanadi Anjanam 1-1 (Twice daily)</p>	<p>On second follow up along with other medication</p> <p>Ksheerabala cap 1-0-1 (B/F)</p> <p>Sapthamrutha loha 1-0-1 (A/F) x 15 days</p>
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Results:

VISUAL ACUITY WITHOUT SPECTACLES						
13/11/24 (Before Treatment)			5/1/25 (After treatment)			
	Both eyes	Right eye	Left eye	Both eyes	Right eye	Left eye
Distant vision	6/36	6/36	CF at 3 metres	6/24	6/18	6/36(p)
Near Vision	-	-	-	N 18	N18	N18
Pin hole improvement	-	No improvement	No improvement	No improvement	No improvement	No improvement

Discussion:

The treatment strategy in this case targeted both systemic and local aspects. At the systemic level, the primary focus was on balancing *Tridosha* and regulating blood pressure. Local treatments were aimed at rejuvenation and strengthening of the affected tissues promoting long-term recovery.

A significant factor in this case was *Manasika Nidana*, which played a key role in both causing the disease and triggering the pre-existing condition. The medications used for local treatments primarily possessed *Pitta* and *Raktha Prasadhaka* properties. *Sameera Panchaka Kashaya* Possesses **anti-inflammatory** properties targeting on treating the *syandana* in the *Rakthvaha srotas*, *Raktha Prasadhaka* property helps in balancing blood-related factors such as haemorrhages and also enhances *Agni* thereby improving metabolic function. *Chandraprabha Vati* a potent *Tridosha Hara* formulation, balancing *Vata*, *Pitta*, and *Kapha*. *Prabhakara Vati* and *Sapthamrutha Loha* stimulate digestive fire (*Agni*) while providing vital nutrients that support strength and rejuvenation.

Conclusion:

Ayurvedic principles provide a comprehensive strategy for managing hypertensive retinopathy by addressing both the systemic and localized aspects of the condition. The treatment aims to balance the *Tridosha*, regulate blood pressure, and promote overall health, complemented by necessary lifestyle changes. Furthermore, *Manasika Nidana* should be taken into account, as it has a profound effect on *Agni*, a primary contributor to disease development.

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