



Case Study

## ROLE OF VIDDHAKARMA AS AN ADJUVANT TREATMENT IN THE AYURVEDA MANAGEMENT OF DIABETIC VITREOUS HAEMORRHAGE WITH SPECIAL REFERENCE TO TRITIYA PATALGATA DOSHADUSHTIJANYA TIMIRA

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### ABSTRACT

Vitreous hemorrhage is one of the most common reasons for sudden painless decrease in vision. Often it is caused by retinal vascular disorder secondary to common systemic ailments such as diabetes mellitus, systemic hypertension etc. The symptoms of vitreous hemorrhage can be correlated to *Tritiya Patalagata Doshdustijanya Timira* in Ayurveda. *Asravisravan* is an Ayurvedic treatment modality indicated for all types of *Netra Rogas*. In *Timira's Samanya Chikitsa*, *Asravisravan* is indicated by Acharya Vagbhata. *Suchi* is one of the *Shastras* that can be used for *Raktavisravan*. Usage of 26 number needle will facilitate the controlled *Raktavisravan*. This method of puncturing with needle is called as *Viddhakarma*. A diagnosed case of diabetic vitreous hemorrhage with complaints of both eyes diminished vision since one month approached to our Out Patient Department and was managed by *Nasya*, *Netratrapan*, *Viddhakarma* and systemic medicines. A prior written consent was obtained from the patient. Significant visual improvement was noticed after the treatment.


### INTRODUCTION

Vitreous hemorrhage is one of the advanced diabetic eye diseases. It is defined as the presence of extravasated blood within the space outlined by internal limiting membrane of the retina posteriorly and laterally, the non-pigmented epithelium of the ciliary body antero-laterally and lens zonules and the posterior lens capsule anteriorly [1].

#### Disease Review

Mechanism of vitreous hemorrhage falls in 3 main categories as follows: 1. Abnormal vessels that are prone to bleeding 2. Normal vessels that rupture under stress 3. Extension of blood from an adjacent source. Abnormal retinal blood vessels are typically the result of neovascularization due to ischemia in disease such as diabetic retinopathy [2].

Retinal ischemia causes hypoxia which results in the production of hypoxia induced factor (HIF). HIF enhances the expression of angiogenic factor, Basic fibroblast growth factor, Erythropoietin and Vascular Endothelial Growth Factor amongst others. These angiogenic factors are present in vitreous, fibrovascular membranes and retinas of patients with proliferative diabetic retinopathy, which ultimately leads to the formation of neovascular buds from retinal blood vessels. These newly formed vessels lack endothelial tight junctions which predispose them to spontaneous bleeding. These new blood vessels increases spread rapidly and invade the potential space between the retina and the posterior hyaloid face and later the posterior lamellae of the cortical vitreous, producing a firm adhesion. The vessels proliferate and subsequently develop an increasingly fibrous component. Contraction of the fibrous element of this fibrovascular neovascular complex or localized traction from the posterior hyaloid face leads to traction on the neovascular tissue and retina. These new vessels are friable in nature which leads to vitreous hemorrhage. This may stimulate further fibrosis and vitreous contraction and ultimately lead to

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traction retinal detachment. About 31-50% of vitreous hemorrhages are caused by diabetes [3].

The symptoms of vitreous hemorrhage are varied but usually include painless visual loss. Vitreous hemorrhage secondary to proliferative diabetic retinopathy is a cause of severe loss of visual acuity in diabetic patient. Duration and poor metabolic control are the important risk factors for the development and progression of diabetic retinopathy. Approximately every patient with type 1 diabetes develops a retinopathy in about 15 years. Diabetic retinopathy is a microangiopathy that exhibits features of both microvascular occlusion and leakage. Hyperglycemia appears to initiate the mainstream vascular events.

In Ayurveda symptoms of vitreous hemorrhage can be correlated to *Tritiya Patalagata Doshadushti Lakshanas (Timira)* described by Acharya Sushruta where he mentioned the *Lakshanas* like “*Mahantyapi cha Rupani Chhaditaniv Vasasa*”<sup>[4]</sup> which means patient sees everything is covered with cloth i.e., blurred vision.

## MATERIALS AND METHODS

## Case Presentation

A 50-year-old female with a history of Type 1 Diabetes Mellitus for the past 30 years visited to Ophthalmology OPD of Shalakyatantra Department, with chief complaints of diminished vision of both eyes since one month. There was no history of recent trauma or travel. She consulted another nearby Ophthalmologist and was diagnosed as case of diabetic vitreous hemorrhage in both eyes. She underwent one sitting of Pan Retinal Photocoagulation (PRP) of both eyes and Intravitreal Bevacizumab (An Anti-Vascular Endothelial Growth Factor Agent) injection in right eye before starting the Ayurvedic treatment. She was also advised with right eye vitrectomy+ endo laser + Perfluoro propane (C3F8) gas injection under local anaesthesia (major). There wasn't any significant visual improvement hence she came in our hospital and advised with above mentioned Ayurvedic treatment.

**Table 1: Visual Acuity Assessment**

Visual acuity on first visit	Distance Vision		Near Vision	
	Right Eye	Left Eye	Right Eye	Left Eye
Unaided	C.F.3ft	6/36p	N10	N10
With pinhole	NI	6/24		

(C.F.: Counting Finger, NI: Not Improved)

**Table 2: Local Examination**

Ocular structures	Right Eye	Left Eye
Lid	Normal	Normal
Conjunctiva	Normal	Normal
Sclera	Normal	Normal
Cornea	Clear	Clear
AC	Maintained	Maintained
Iris	Normal	Normal
Pupil	RRR	RRR
IOP	17.3mm of Hg with Schiottz Tonometer	17.3mm of Hg with Schiottz Tonometer

(AC- Anterior Chamber, IOP-Intra Ocular Pressure, RRR- Round, Regular, Reacting to light)

**Table 3: Fundus Examination**

	Right Eye	Left Eye
Disc	Details not seen	NAD, CD Ratio- Normal
Macula	Details not seen	NAD
Vessels	Details not seen	IRMA, Exudates
Background	Details not seen	PRP Done
Lens	Cortical cataract grade 1	Cortical cataract grade 1

(CD Ratio-Cup Disc Ratio, IRMA-Intra Retinal Micro Vascular Abnormality, PRP- Pan Retinal Photocoagulation)

**Table 4: Timeline of Events**

Date	Event
1992	Diagnosed with type 1 diabetes mellitus
1/10/2022	Sudden onset of blurred vision in both eyes
3/10/022	Intravitreal Bevacizumab (anti-VEGF) injection in right eye
10/10/022	PRP in both eyes done
21/10/022	Advised with right vitrectomy with endolaser + C3F8 injection under local anaesthesia
7/11/022	Patient presented to the OPD with blurred vision (RE>LE) <i>Nasya, Netratarpan and Viddhakarma</i> started (1 <sup>st</sup> sitting) Systemic medicine started: Tab I clear 10 D, <i>Vasaguduchyadi Kashayam</i> , Tab <i>Dhatrinisha</i> , <i>Dashmoolarishta</i>
11/11/022	Vision improved
14/11/022	<i>Nasya, Netratarpan and Viddhakarma</i> stopped, systemic medication continued
22/11/022	2 <sup>nd</sup> sitting started
29/11/022	2 <sup>nd</sup> sitting stopped, vision improved
8/12/022	3 <sup>rd</sup> sitting started
15/12/022	3 <sup>rd</sup> sitting stopped, vision improved
21/12/022	Patient came for follow-up, vision is constant

**Table 5: Treatment Given to the Patient**

Drug	Ingredients	Dose	Anupana/ Procedure	Duration
1.Tab I Clear 10 D	Methyl cobalamin, <i>Haridra, Triphala</i>	1-0-1	Warm water	1.5 month
2.Tab <i>Dhatri Nisha</i>	<i>Amalaki, Haridra</i>	1-0-1	Warm water	1.5 month
3. <i>Vasaguduchyadi Kashayam</i>	<i>Vasa, Guduchi, Amalaki, Haritaki, Bibhitaki, Chirayita</i>	3 teaspoons	Warm water	1.5 month
4. <i>Dashmoolarishta</i>	<i>Dashmool</i>	3 teaspoons	Warm water	1.5 month
5. <i>Nasya with Ksheerbala Avarthi 101 taila</i>	<i>Godugdha, Bala</i>	6 drops in each nostril	<i>Snehan- Til Tail, Nadi Swed</i> , instilled prescribed drops of oil in each nostril	7 days
6. <i>Netratarpan with Jivantyadi Ghrita</i>	<i>Jivanti, Ghrita, Kakoli, Ksheerkakoli, Pippali</i>		Created a well out of mash dough around both the eyes, filled it with warm <i>Jivantyadi Ghrita</i> until the eyelashes were completely immersed, kept it for 800 <i>Matras</i> , after removal of <i>Ghrita</i> and mash <i>Paali, Prakshalan</i> with warm water was done.	7 days
7. <i>Bidalaka</i>	<i>Yashti, Lodhra, Daruharidra, Triphala</i>	50 gm each	Paste of mentioned powdered drugs is applied around the eye excluding the lashes for 10 min. wiped it before drying.	7 days
8. <i>Viddhakarma</i>	<i>Vedhana</i> with 26 no ½ inch needle at <i>Apanga, Lalata, Upanasika</i>		Cleaned the area with cotton spirit swab, pricked at the sites mentioned, let the blood flow	For continue 7 days in hospital stay.

## RESULT

**Table 6: Follow Up Findings**

Date	Unaided Distant Visual Acuity		With Pinhole	
	Right Eye	Left Eye	Right Eye	Left Eye
11/11/2022	6/24	6/24P	6/24	6/24
29/11/2022	6/24	6/12	6/18	6/9 P
15/12/2022	6/18P	6/12P	6/18	6/9 P
21/12/2022	6/18P	6/12P	6/18	6/9P



**Image 1: Netratarpan**



**Image 2: Viddhakarma at Apanga**



**Image 3: Viddhakarma at Lalata**



**Image 4: Viddhakarma at Upanasika**

## DISCUSSION

*Prameha* is considered of the eight major disorders in Charak Samhita<sup>[5]</sup>. *Prameha/ Madhumeha janya Timir* or diabetic retinopathy involves all 3 *Doshas + Raktadosha + Saptadhatu* with four internal *Drishti Patalas* of eye at different stages of the ailments. Diabetic retinopathy is a *Drishti-patalagata Roga*. One of the causes of diabetic retinopathys is the vitiation of the *Pitta* and *Rakta*. The *Vigunit Doshas* gets confined to the eyes. It manifests as microangiopathy, hemorrhage and venous bleeding.

### Fate of Vitreous Haemorrhage

Although the fundamental principles of blood catabolism are same regardless of location, there are certain unique biochemical features of vitreous which affect the catabolism of blood. These include rapid clot formation, slow lysis of fibrin, extracellular lysis of RBC, persistence of intact RBC and lack of early polymorphonuclear response. In patients with diabetic retinopathy the vitreous blood does not clear spontaneously<sup>[6]</sup>.

### Therapeutic Intervention

दोषानुरोधेन च नैकशस्तं स्नेहास्रविस्त्रावणरेकनस्यै उपाचरेत अंजन  
मूर्धबस्तिक्रियातर्पणलेपसेकैः। (अ.ह.उ.१३/४८)

**Nasya:** *Nasya karma* is described for *Timira* because nose is a gateway of drug administration in case of *Urdhwajatrugata roga*. *Acharyas* have recommended *Nasya* in *Timira Chikitsa* to strengthen the eyes. *Nasya* with *Ksheerbala 101 Avarthi* is useful due to its *Asrik dosha, Kupita marga shodhaka* and *Raktaprasadak* properties. It also possesses *Balya, Indriyaprasadan, Jeevan, Brihan* properties<sup>[7]</sup>. It enhances the functioning of the sense organs.

**Netratarpan:** It is the most revered *Kriyakalpa* extensively used in *Netra Rogas*. Due to *Raktapittashamak, Ropaka* and *Rasayan* properties, *Jivantyadi Ghrita* it is used to alleviate hemorrhagic signs. *Jivanti* is one amongst the best *Chakshushya* drug and most of the contents of *Jivantyadi ghrita* has *Tridosha* pacifying actions<sup>[8]</sup>.

**Bidalaka:** *Bidal* means cat's eye. In this *Kriyakalpa* paste of medicine is applied over periorbital area except eyelashes. Local therapeutics act faster and are more effective than systemic medicines. *Daruharidra* and *Triphala* have *Chakshushya* property hence used in this case.

**Viddhakarma:** *Acharya Sushruta* mentioned the *Tritiya Patalagata Timira* as *Yapya Vyadhi*<sup>[9]</sup>. In

*Uttartantra* he has mentioned the application of *Siramokshna* in all 6 *Yapya Drushtigata Rogas* [14]. *Suchi* is one of the *Shastras* that can be used for *Raktavisravan*.<sup>[3]</sup> In *Sushruta Sharirsthana* he mentioned the *Viddhakarma Sthana* [10].

#### Probable mode of action of *Viddhakarma*<sup>[11]</sup>

Acupuncture in mice with focal cerebral ischemia reduced the release of TNF-Alpha (Ma et al., 2006). It increases the partial oxygen pressure, decreases the hydrogen concentration in ischemic regions. Therefore, it eases hypoxia and acidosis due to ischemia (he et al., 2002)

Although *Viddhakarma* is widely accepted for pain management, but we used it in a *Tritiya Patalagata Timira* as Acharya Vagbhata has mentioned the *Asravisravan* in *Timira Vyadhi*. We used it as adjuvant treatment when the patient first approached our OPD. We got the significant visual improvement.

#### Systemic Medications

**A. Dashmoolarishta:** *Vaatshamak* and anti-inflammatory property.

**B. Tab. I clear 10 D:** It contains methyl cobalamin, *Triphala* and *Haridra*. It is used to prevent the progression of diabetic retinopathy. Also helps in reducing retinal oxidative stress and inflammation. It improves macular pigment optical density and visual acuity. It increases contrast sensitivity and foveal thickness. It helps insulate retinal nerve fibers.

**C. Tab. Dhatri Nisha:** Anti-diabetic, diabetes induced complications (*Charak, Sushruta*) *Rasayan* in diabetes mellitus.

**D. Vasaguduchyadi Kashay:** It is helpful in the treatment of *Pitta* imbalance and bleeding disorders. *Vasa* is indicated in *Urdhwagata Raktapitta*. Due to *Tikta, Kashay Rasa* and *Sheeta Virya*, *Vasa* is *Pittahara*. It is also *Kaphahara* due to its *Laghu, Guna* and *Katu Vipaka*.

#### CONCLUSION

Patient got relief from symptoms and signs of disease and vision improved. Patient tolerated and responded well to *Nasya, Tarpan* and *Viddhakarma* as

adjuvant treatment. No side effects of the medicines and procedures were seen during treatment. According to this case report it can be concluded that Ayurvedic management of diabetic vitreous hemorrhage with *Nasya, Tarpan, Viddhakarma* and the systemic medications offers good result.

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