

## MANAGEMENT OF CENTRAL RETINAL VEIN OCCLUSION THROUGH KRIYAKALPA PROCEDURES – A CASE REPORT

Majagaiyan Pratikshya<sup>1</sup>, M J Ashwini<sup>2</sup>

<sup>1</sup>PG Scholar; <sup>2</sup>Professor and HOD;

Department of Shalakya tantra, SDM College of Ayurveda and Hospital, Hassan, Karnataka, India

Email: [pratikshyamajagaiyan1988@gmail.com](mailto:pratikshyamajagaiyan1988@gmail.com)

### ABSTRACT

Central retinal vein occlusion is a debilitating and devastating disease process affecting primarily the adult population. These are more common than artery occlusions leading to painless sudden vision loss due to ischemia and hypoxia occurred by vein occlusion. *Kriya Kalpa* procedures like *seka*, *aschyotana*, *pindi*, *vidalaka*, with *thalam* and *pratimarsha nasya* are found to be very helpful in reducing the hemorrhage and improving the sight.

**Keywords:** Central retinal vein occlusion, Ischemia, Hypoxia, *Kriyakalpa*.

### INTRODUCTION

Eyes are the most precious gift of god to the living beings. It holds a special status among all sense organs. In this present era of science and technology, many people are suffering from various eye diseases. The causative factors behind all problems are mainly improper use of sense

organs, improper diet, improper use of gadgets, violating the moral code conduct (*Dinacharya and Ratricharya*), and Systemic diseases.

Central retinal vein occlusion (CRVO) can be a debilitating and devastating disease process affecting primarily the adult population<sup>1</sup>. It is the second most common retinal vascular disorder following diabetic retinopa-

thy. Though the exact etiology is poorly understood, it is suspected that venous occlusion induces an ischemic and hypoxic state that leads to visually significant sequelae including macular edema and anterior segment and retinal neo vascularization. These typically affect elderly people in fifty's or sixty decade of life<sup>2</sup>.

#### **Etiology:**

- ⊙ Pressure on the vein by an atherosclerotic retinal artery.
- ⊙ Hypertension and diabetes mellitus.
- ⊙ Hyper viscosity of blood
- ⊙ Peri phlebitis retinae.
- ⊙ Raised intra ocular pressure.
- ⊙ Local causes: orbital cellulitis, orbital tumors, facial erysipelas, cavernous sinus thrombosis.

#### **Two types:**

Ischemic and Non ischemic Central Retinal Vein Occlusion.

**Non ischemic** is the most common clinical variety (75%).

- ⊙ It is characterized by mild to moderate visual loss.
- ⊙ Early stages on fundus examination shows mild venous congestion and tortuosity, a superficial flame shaped hemorrhages more in posterior retina with papilledema and no or mild macular edema.
- ⊙ In late stage there appears sheathing around the main veins, few cilio retinal collaterals around the disc with cystoid edema.

**Ischemic Central Retinal Vein Occlusion**<sup>3</sup> refers to acute complete occlusion of central vein. It is characterized by marked sudden visual loss and Relative Afferent Pupillary Defect Fundus (RAPD) examination in early cases shows:

- ⊙ Massive engorgement, congestion, and tortuosity of retinal veins.
- ⊙ Massive retinal hemorrhage (splashed tomato appearance).
- ⊙ Numerous cotton wool spots with disc edema and hyperemia.
- ⊙ Macular area full of hemorrhage and is edematous..

- ⊙ Breakthrough vitreous hemorrhage may be seen.
- ⊙ Marking sheath around veins, collaterals is seen around the disc in late stage.
- ⊙ Macula shows pigmentary changes and chronic cystoid edema.

#### **Pathophysiology**<sup>4</sup>

- ⊙ The exact pathogenesis of the thrombotic occlusion of the central retinal vein is not known. Various local and systemic factors play a role in the pathological closure of the central retinal vein.
- ⊙ The central retinal artery and vein share a common adventitial sheath as they exit the optic nerve head and pass through a narrow opening in the lamina cribrosa. Because of this narrow entry in the lamina cribrosa, the vessels are in a tight compartment with limited space for displacement. This anatomical position predisposes to thrombus formation in the central retinal vein by various factors, including slowing of the blood stream, changes in the vessel wall, and changes in the blood.
- ⊙ Arteriosclerotic changes in the central retinal artery transform the artery into a rigid structure and impinge upon the pliable central retinal vein, causing hemodynamic disturbances, endothelial damage, and thrombus formation. This mechanism explains the fact that there may be an associated arterial disease with central retinal vein occlusion (CRVO). However, this association has not been proven consistently, and various authors disagree on this fact<sup>5</sup>.
- ⊙ Thrombotic occlusion of the central retinal vein can occur as a result of various pathologic insults, including compression of the vein (mechanical pressure due to structural changes in lamina cribrosa, e.g., glaucomatous cupping, inflammatory swelling in optic nerve, orbital disorders); hemodynamic disturbances (associated with hyperdynamic or sluggish circulation); vessel wall changes (e.g.,

vasculitis); and changes in the blood (e.g., deficiency of thrombolytic factors, increase in clotting factors)<sup>6</sup>.

- ◎ Occlusion of the central retinal vein leads to the backup of the blood in the retinal venous system and increased resistance to venous blood flow. This increased resistance causes stagnation of the blood and ischemic damage to the retina. It has been postulated that ischemic damage to the retina stimulates increased production of vascular endothelial growth factor (VEGF) in the vitreous cavity. Increased levels of vascular endothelial growth factor stimulate neo vascularization of the posterior and anterior segment (responsible for secondary complications due to Central Retinal Vein Occlusion). Also, it has been shown that vascular endothelial growth factor (VEGF) causes capillary leakage leading to macular edema (which is the leading cause of visual loss in both ischemic Central Retinal Vein Occlusion and non-ischemic Central Retinal Vein Occlusion).<sup>7</sup>
- ◎ The prognosis of Central Retinal Vein Occlusion depends upon the reestablishment of patency of the venous system by recanalization, dissolution of clot, or formation of optociliary shunt vessels.<sup>8</sup>

#### **Samprapti of Central Retinal Vein Occlusion :( Ayurvedic View)**

Central Retinal Vein Occlusion. Basically a *Dristipatalagata roga* is mainly attributed to *Sira srotas abhisyandam* and *raktavaha sroto dusti* due to a variety of *Achakshyushya ahara* and *vihara karanas* . In order to understand the *samprapti* of Central Retinal Vein Occlusion in Ayurveda, general *samprapti* of eye disease must be considered. *Nidana* of endogenous eye diseases are mainly *Achakshyushya* factors which vitiates *Pitta*.<sup>9</sup>

The vitiated *Pitta* in turn vitiates the *Pitta vaha srothas*. Due to interconnection of *Pitta* and *Rakta*, which shares common *Ashrya Ashrayee bhava*, the *raktavaha srotas* also gets vitiated due to *Pitta* vitiation. As

the *nidana* factors are *Achakshyushya*, the vitiated *pitta* and *rakta* have an affinity towards penetrating the eyes. Hence the vitiated dosha move towards the eyes through *Jatroordhwa srotas* and finally gets confined to the eyes, there is a stage when the *Sirasrothas* are deeply involved which is known as *Sira abhisyanda* .<sup>10</sup>

The whole pathology of Central Retinal Vein Occlusion which starts with *sroto dusti* of *Raktavaha srotas* manifested in the form of *Sanga* as haemorrhages (Tomato splash appearance or flame shaped). In this context of *Siro abhisyandam* in eye diseases the *Ashrya sthana* is *Rasavaha Srotas*, affected dhatu is *Rakta* and vitiated dosha is *Pitta*.

**Case Report:** A 54 year man with known case of Hypertension since 7 years under medication came to Shree Dharmasthala Manjunatheswara College of Ayurveda Hassan Karnataka with chief complains of diminished vision in left eye since 2 years also associated with appearance of various colors of light in both eye since 1 year.

O/E visual acuity of the patient was both eyes 6/9partial, right eye 6/18, left eye 6/36 . With spectacles visual acuity was both eyes 6/6partial, right eye 6/9partial, left eye 6/12partial, near vision was N9, with spectacles Near Vision was N6.

#### **Local Examination:**

**Head Posture:** Normal.

**Forehead and Facial symmetry:** Normal, age related wrinkles present.

**Eyebrows:** Both eyebrows are normally aliened, no madarosis present.

**Eyeball:** Normal, no proptosis, enophthalmus, no other deformity present.

**Eye lashes:** Normal, no poliosis, no trichiasis. Upper eye lashes directed forward, upward and backward. Lower eyelashes directed forward, downwards and backward.

**Eyelids:** Upper eye lids of both eye cover 1/6 of cornea, lower eye lids touch the limbus. No swellings, nodules, drugging, coloboma, lesions present.

**Lid margin:** Normal intact. No entropion, ectropion present.

**Lacrimal Apparatus:** Normal. Regurgitation test negative, punctum visible no stenosis present.

**Conjunctiva:** Normal, no congestion, chemosis or discoloration present in bulbar part. Normal conjunctival reflex. No follicles, papillae, concretion, congestion present in palpebral conjunctiva.

**Sclera:** Normal, No congestion or staphyloma.

**Cornea:** Normal, sensitive, concave, with normal sheen. No sign of degeneration, opacity, precipitates present.

**Anterior Chamber:** Normal depth, regular.

**Iris:** Normal, brown in colour.

**Pupil:** Bilateral pupils one-one in number, round, regular and reactive.

**Lens:** Normal, No sign of opacity present.

**Intra Ocular Pressure:** 16mm of mercury in right eye, 18 mm of mercury in left eye.

**Funduscopy:**

**Distant Direct Ophthalmoscopy:** Normal red reflex was seen in both eyes, no opacity present.

**Direct ophthalmoscopy:**

**Left eye:**

General background: Dull.

Media: Clear

Foveal reflex: Dull.

Blood vessels: Attenuated and tortuous, superficial flame shaped hemorrhages present.

Macula: Macular edema present.

Optic Disc: Round, pale, margins clear, with cup disc ratio of 0.5.

**Right eye:** Funduscopy was within normal limits.1

**Plan of treatment:**

Patient was admitted and on day first he was given *aama pachana* medication with *Chitrakadi vati* 2 tablets three times a day and *Panchakola Phanta* 100ml. Second day *Sadhyo Virechana* with *Gandharva Hastadi Taila* 60ml and *Triphala Kashaya* 100ml was given .

From the third day, Eye treatments were started as follows:

*Seka* with *Triphala*, *Yesti*, *Lodhra*, *Chandana*, *Daruharidra Sariva Kashaya*. *Aschyotana* with *Chandanadi Anjana* 4 drops to each eye. *Pindi* with freshly crushed *guduchi* and *kumari* pulp. *Vidalaka* with *Chandana*, *Sariva*, *Laksha*, *Saphatika*, *Gairika* with *Durva swarasa*. *Shirolepa* with *Chandana*, *Sariva Laksha*, *Amla*, *Guduchi* with *Durva Swarasa* was applied. *Pada abhyanga* with *Shatpaka taila*. *Pratimarsha nasya* with *Durva Swarasa* 2 drops before food, *Durva swarasa pana* 50ml, *Saptamrit Loha* 1 tablet twice a day.

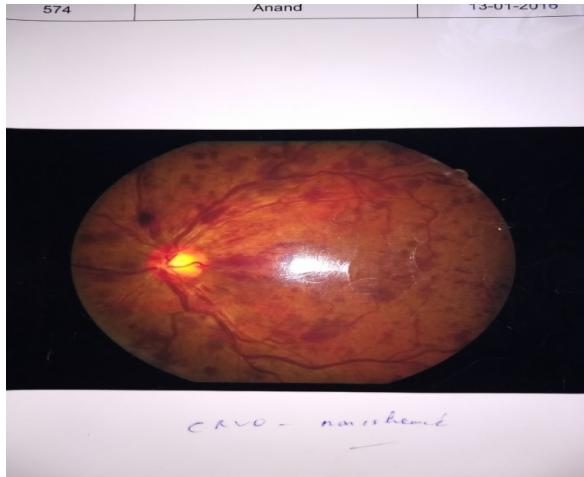
The treatment was given for the period of 10 days. In one and half year patient took 3 sittings of treatment each for 10 days. After treatment gross improvement were marked in patient, which were assessed by improvement in visual acuity and fundal photographic changes.

**Result:**

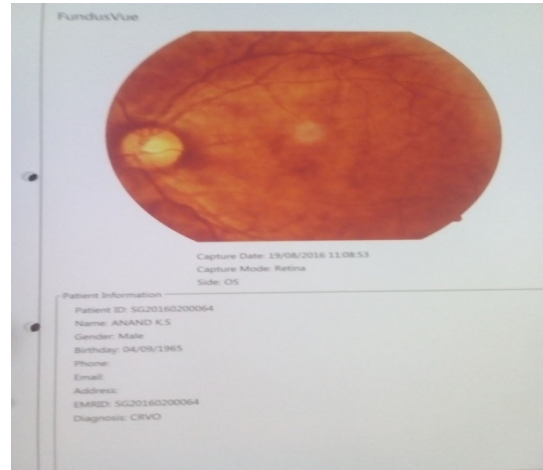
After, final sitting of the treatment his visual acuity of left eye increased from 6/36 to 6/12 and right eye visual acuity was 6/6 partial. His complaints of appearance of various colors of light in front of eye was also reduced.

Fundal photographic changes are given below:

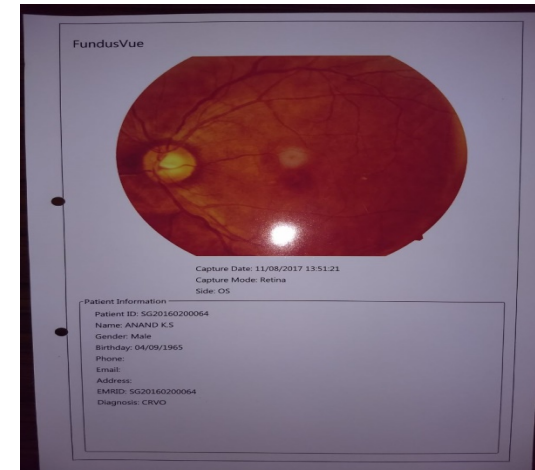
**First Sitting:**



**Second Sitting:**



**Third Sitting**



## DISCUSSION

Central retinal vein occlusion is one of the major causes for reduced vision in old age. According to the contemporary science, no known effective medical treatment is available for the treatment of Central Retinal Vein Occlusion. Main aim of the treatment is to identify and treat any systemic medical problems to reduce the further complications. As the main cause of Central Retinal Vein Occlusion is unknown various treatment modalities like cortico steroid therapy, Anti Vasculo endothelial growth factor injections, Fibrinolytic agents, lasers are advocated, but these treatment are not having satisfactory result. In this condition Ayurvedic management of Central Retinal Vein Occlusion by *Ayurvedic Kriyakalpa* procedures like *Seka, Aschyotana, Vidalaka, Pindi* ,

*Shirolepa* etc can be most promising to restore back the vision of the patient .

Active ingredients present in the drugs mentioned above possess hemostatic and vasoconstriction properties that will seize the hemorrhage occurring in the retinal veins. These active principles not only prevent hemorrhage but also help in easy absorption, so that chances of vision restoration will be high. The active principles like Loturine, Colloturine, Loturidine, Santanol, Glycosides, B-sitosterol, Lupeool, Tannic acid directly act on the blood vessels to constrict them during hemorrhage and also possess fibrinolytic property.

According to *ayurvedic* perspective, *Lodhra, Chandana, Sariva , Durva, Laksha, Triphala, lodhra* are *pitta rakta nashaka* drugs. They possess *rakta sodhana, rakta stambhana, rakta shoshana, sheeta prashamana*

qualities which are beneficial in the removal of occlusion present in retinal veins. *Seka* and *aschyotana* with these drugs prevents hemorrhage in retinal veins. *Shiro lepa* with these drugs will be soothing as they possess *sheeta prashamana* property. *Pratimarsha nasya* and *padaabhyanga* also possess *chakshusya* property.

## CONCLUSION

To restore back the vision is the most challenging task in Central Retinal Vein Occlusion. So from this case report we can conclude that *Kriyakalpa* procedures like, *seka*, *aschyotana*, *pindi*, *vidalaka*, *shirolepa*, *pratimarsha nasya*, *padabhyanga* with *rakta sodhana*, *rakta satmbhana*, *sheeta prashamana dravyas* are very much helpful in the management of Central Retinal Vein Occlusion.

## REFERENCES

1. Khurana AK. Comprehensive Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2015.
2. Dadapeer K. Essentials of Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2015.
3. Khurana AK. Comprehensive Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2015.
4. Sihota Ramanjit Tandon Radhika. Parsons diseases Of the Eye. New Delhi: Elsevier, a division of Reed Elsevier India Private Limited; 2015.
5. Agarwal ML Agarwal Sanjeev. Clinical Examination of Ophthalmic Cases. New Delhi: CBS Publishers and Distributors Pvt Ltd; 2016.
6. Dadapeer K. Clinical Methods In Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2015.
7. Khurana AK. Review Of Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2015.
8. Jogi Renu. Basic Ophthalmology. New Delhi: Jaypee Brothers Medical Publishers (P) Ltd; 2009.
9. Ghanekar BG. Sushruta Samhita Uttar sthanam Sanskrit Text with Ayurvedarahasyadipika Hindi Commentary. New Delhi: Meharchand Lachmandas Publication; 2004.
10. Shastri Ambika Dutta. Susruta Samhita Uttarsthanam. Varanasi: Chaukhamba Sanskrit Sansthan; 2017.

How to cite this URL: Majagaiyan Pratikshya & M J Ashwin: Management Of Central Retinal Vein Occlusion Through Kriyakalpa Procedures – A Case Report. International Ayurvedic Medical Journal {online} 2018 {cited September, 2018} Available from: [http://www.iamj.in/posts/images/upload/2237\\_2242.pdf](http://www.iamj.in/posts/images/upload/2237_2242.pdf)

**Source of Support: Nil**  
**Conflict Of Interest: None Declared**