



CASE REPORT

The Ayurvedic management in Branched Retinal Vein Occlusion- A Case Report

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Abstract

Background: Retinal vein occlusion (RVO) is the second most common retinal vascular disorder after diabetic retinopathy. BRVO is classified according to the anatomical location as major or macular. Major BRVO refers to occlusion of a retinal vein that drains one of the quadrants. Macular BRVO refers to occlusion of a venule within the macula. The incidence of BRVO is most common in superotemporal quadrant (58.1-66%), followed by the inferotemporal quadrant (29%) and least common in nasal quadrants (12.9%). BRVO has many known ophthalmic and systemic risk factors including age, Hypertension, Hyperlipidemia, Obesity .

Case Presentation: A 42 yr old obese female Teacher by Profession with no comorbidities presented in OPD with sudden central field defect and blurred vision in left eye noticed since 2 weeks and recently on examination diagnosed Hypertension, Blood investigation reveals Hyperlipidemia Ocular examination reveals (done on 17/08/22) Visual acuity of left eye: CF(1m), <N36 without glass and no improvement with glass, Left eye-Anterior segment normal, Funduscopy of left eye: retinal haemorrhage(Splinter haemorrhage), Cystoid Macular Oedema (CMT-864um). Shodhana chikitsa vamaana, Takradhara (7 days) was done. Internal medication along with external kriyakalpa was done for a time period of 5 month. Assessment was done both subjective and objective.

Conclusion: Kriyakalpa plays an important role in reducing the macular oedema along with the response of anti-inflammatory drugs showed enhanced results. Use of Kashyam having kapha samaka properties along with shiva gulika and goomutra haritki helped the patient to reduce hypertension and obesity indicates the significant effects. As per some clinical studies there is strong association of visual acuity (BCVA) in eyes with oedema in cases of CRVO and BRVO. By reducing the oedema (macular) patient can get improvement in BCVA (Best corrected visual acuity).

The report reveals the drugs and treatment protocol used mainly to reduce edema in order to get subjective benefits in RVO. Along with symptomatic management for obesity and hypertension which in this case rule out as common causes which can be seen in RVO.

Introduction

Retinal vein occlusion (RVO) is the second most common retinal vascular disorder after diabetic retinopathy. BRVO is classified according to the anatomical location as major or macular. Major BRVO refers to occlusion of a retinal vein that drains one of the quadrants. Macular BRVO refers to occlusion of a venule within the macula. The incidence of BRVO is most common in superotemporal quadrant (58.1-66%), followed by the inferotemporal quadrant (29%) and least common in nasal quadrants (12.9%). Depending on the size of the vessel and site of occlusion they have been categorized into the following:

Central retinal vein occlusion (CRVO)

Branch retinal vein occlusion (BRVO)

Tributary vein occlusion

Macular vein occlusion

Hemiretinal vein occlusion

BRVO is the most common cause of retinal vascular occlusive disease.

BRVO has many known ophthalmic and systemic risk factors including age, Hypertension, Hyperlipidemia, Obesity in which Systemic Hypertension is the most common association and Thrombus formation is the most likely mechanism. Other factors include compression of the vein by extraluminal factors and inflammation of the vessel wall

BRVO is uncommon in patients younger than 50 yrs as well as in young individuals and there is a significant association with BMI in these patients.

A large meta analysis by O'Mahoney et al, showed a significant association of Hypertension and Hyperlipidemia with BRVO. Other factors that are significantly associated with BRVO are glaucoma and body mass index (BMI).

Symptoms

Patients presenting with BRVO have a range of symptoms depending on the site and severity of occlusion. Typically patients present with sudden painless vision loss or visual field defect. Features of BRVO are sudden onset, unilateral condition with flashes of light, field vision loss, or blurred vision, cystoid macular oedema and haemorrhage are limited to the area drained by the affected vein.

Changes in visual acuity are caused by the presence of macular haemorrhage, macular oedema or ischemia in acute phase. During the acute phase, Intraretinal haemorrhage, retinal oedema and cotton wool spots may appear.

The visual prognosis of these conditions will depend on the location and extension of the occlusion and non

perfused area as well as the appearance of macular oedema and ischemia, epiretinal membranes (ERM), Subretinal fibrosis, Cystoid macular oedema and pigment alterations.

Complication involves lamellar holes following retinal cysts rupture, ERM, complete macular holes or the aggravation of a Vitreo Macular Traction Syndrome (VMTS)

Though in Allopathic, the common mode of treatment for RVO is

Intravitreal anti-VEGFs, Grid-pan-scatter laser photocoagulation, Intravitreal Triamcinolone acetate or IVI (injection) anti-VEGF therapy is aimed at reducing macular thickness, with the assumption that a reduction in retinal thickness will be followed by an improvement in visual acuity. An inverse relationship between macular thickness and visual acuity has been reported in the literature.

The SCORE study, investigated the association between OCT-measured centre point thickness and BCVA in eyes with macular oedema associated with CRVO and BRVO, as well as other baseline characteristics that may be associated with baseline visual acuity.

In classics of Ayurveda like, Sushruta samhita (Sushruta Uttartantra Chapter 7 Drstiroga vigyaniya) and Asthanga hrudaya (Asthanga Hridruya Uttartantra chapter 12 drstiroga vigyaniya adhyaya and chikitsa in Chapter 13 Timirapratisheda adhyaya and chapter 14 Linganasapratisheda adhyaya) have mentioned in detail about painless diminution and loss of vision as Timira, Kacham and Linganasam. Along with their classification and treatment (medical as well as surgical) as per prognosis.

Gradual painless loss of vision is the main clinical feature of timira. As per the condition, dosha pradhanta and prognosis of the condition of vision involved, the case may be differentiated as Timira, kacham and linganasam. If there is involvement of all the doshas as in this case

Vata involved- occlusion

Pitta and rakta- haemorrhage

Kapha - Oedema

Hence can be correlated with Sannipataja Timira, such as a patient views the object as (as mentioned in Sushruta samhita)

Variegated colours - Chitrani

Scattered - Viplutani

Luminous - Jyotishapi cha paschyati

Further in kasa and Linganasam stage, the colours of drsti, depend upon the vitiation of dominant dosas.

Asthanga mentioned the symptoms as "sansargasannipataja vidhyatasankirna lakshana....." Means

involvement of all the dosha in timira, kacha, linganasha will shows the combined lakshanas of all the doshas and once reached to kacham or linganasha stage(seshayodrsto chitro raga prajayate) there will be appearance of different colours in drsti .

General treatment measures seen in Sannipataj Timira (A.H) is Virechan, Triphala prayoga, Diet (Purana ghrita, Mudhaga, Yava, etc.), Kriyakalpa (As per Ama Lakshana of Netra Roga mentioned bt Madhav Nidhana- Seka, Aschotana, Pindi, Vidalaka

Ama lakshana of netra roga- “Udhirna vedanam netram raga shotha samanvitam

Gharshanishtoda soolasruyiktanvitam viduha”

Here, Shotha can be correlate with macular or retinal oedema and considering the Ama lakshana and Yukti, mentioned treatment was done.

Case presentation

We report a case of patient age 42 yr old obese, BMI 30.7 kg/m² (Height-161.5cm,Weight-77Kg), teacher by profession with no history of systemic illness (unnoticed hypertension with B.P- 180/90) presented in our OPD with complaints of sudden diminution of central vision in Left eye noticed since 2 weeks.

Nidana noticed are -dietary history revealed that the food pattern was regular having a mixed diet (Non-vegetarian), Food habit-regular intake of rice, fish 3-4/week, pickle (daily), milk, hot and spicy food, habit of taking head bath with warm water since last 8 yr. She was recently diagnosed with Hypertension (on first visit) and Hyperlipidemia. Both subjective and objective assessment was done along with Haematological tests.

Clinical findings-

On examination (17/08/2022)

Her UCVA and BCVA both was - 6/6, N6 (OD), CF 1m (OS). Dilated fundus examination shows dot and blot haemorrhage over the superior temporal region in left eye. An optical Coherence tomography revealed profuse cystoid macular oedema (Left eye = CMT-864um). A complete medical blood investigation was done which revealed Cholestrol-207mg/dl, HDL- 49mg/dl, LDL- 139mg/dl.

Personal history was found to be normal, with sleep disturbance due to stress. No history of allergy. All other systemic investigations including urinary, cardiovascular, respiratory, digestive and nervous systems were normal

Her vision was improved to UCVA - 6/60, N36(OS) and BCVA - 6/ 24, N18 (OS) with the duration of 5 month on (24/01/23), after receiving Ayurveda treatment with gradual progression in central vision and complete resolution of macular oedema.

Methodology/Treatment Given:

Aahara - Patient was on strict restricted diet

Medications

Shodhana Chikitsa(17/08/22)- 1.) Vamana

2.) Sirodhara (Dhyanamla dhara)

Internal medication (18/08/22)

1. Shiva gulika 1BD
2. Kashayam with Brahati, Nagaram, Apamarga: Dusparsha, pumarnava : Vasa, triphala (1:1:1) total 90 ml Bd B/F
3. Gomootra Haritki 5gm
4. Triphala +Trivruit (1/2+1/2 teaspoon) HS

Kriyakalpa

5. Netra dhara (L.E) - Laghupanvhmoola, triphala, manjistha, yasthi, dhanyamala 4 times/day
6. Purambada (L.E)- Mukkadi + Triphala+ Dhanyamla + Tab. Karatavattu

Treatment given (27/11/22)for 2 month

1. Patoladi ghritam 1 tsp + ½ Triphala churnam with Anupanam - Amalaki kashayam
2. Darvyadi anjanam (Illaneerkuzhumbu anjanam) 1drop both eyes followed by Yashti kashyam eye bath(Kshalanam)
3. Eye Exercise - Palming, Blinking, Eye rotation
4. Ksheerabala 7 Avarti External application to both eyes
5. Mahatriphala ghritam 3drops PMN (Pratimarsha nasyam)

Observation

The patient was under internal and external medication (kriyakalpa), in an interval of 3 month weight reduced to 3 kg, UCVA and BCVA was CF2m, <N36 (OD) refinement in visual acuity, patient's cystoid macular oedema reduced to significant level . Fundus assessment was done which shows satisfactory results. On completely the treatment after 5 month visual acuity with OCT finding of Tractional retinal detachment in left eye with Central macular thickness of 248um

Dates	UCVA	BCVA
16/08/22	OD- 6/6, N6 OS- CF1m, <N36	OD- 6/6,N6 OS- CF1m, <N36
27/11/22	OS- CF2m, <N36	OS- NIF, <N36
24/01/23	OS- 6/60, N36	OS- 6/24, N18

Blood investigation (17/08/22)

FBS	82mg/dl
PPBS	137mg/dl
Cholesterol	207um
HDL	49um
LDL	139um
HbA1c	5.4

Distant direct ophthalmoscopy examination (before treatment 18/08/22)

RE	Normal
	Cystoid macular oedema
	Fundus examination - Media - clear
	Optic disc- vertically oval
	Optic cup - 0.3
LE	Macula- unhealthy (Haemorrhage)
	Vessels - attenuated, sclerotic arteries
	General fundus - flame shaped haemorrhage (temporal quadrant)

Discussion

Considering patients prakruti , kostha, and vyadhi dosha

Shiva gulika- As a part of Samana chikitsa administered orally for a long duration is said to be very effective in combating multiple system involvement of the disease., it is having a property of enhancing Vyadhikshamatwa property, also can be given in pranavaha, annavaha, rasavaha, raktavaha srotas (haematological). Shiva Gulika with 56 ingredients apart from this some drugs in shivagulika have Kaphavata Shamaka property. It acts as a antibiotic, analgesics, anti-inflammatory, immunomodulatory, antioxidant. Other properties include Lekhana, Chedana, helpful in elimination (Durmedohara-eliminates excess fat from body)

Kashayam- Most of the drugs are having Katu, Tikta rasa, balances kapha and vata, having anti-inflammatory activity.

Goomutra Haritki- Goomutra haritki having laghu, ushna, tiksha, rukhsha guna and katu, taikata rasa along with Shothagna, Lekhana property and predominance of agni and vayu mahabhoota, By Yukti pramana it can be used in the treatment of Granthi, Sthoulya (Obesity), balancing Cholestrol levels. Gomutra haritki is indicated where shodhan is indicated and srotas are to be washed off as it can be used in virechana and Asthapana basti.

Netra dhara- Dhanyamla (chemical action- Glucoside called Hesperidin present in Dhanyamla has the ability to prevent capillary bleeding and reduce inflammation, it has also hypoglycaemic and anti hyperlipidaemic actions). Effect of Dhanyamala dhara, when decoction is poured over the body it helps in proper perspiration of the body which thereby detoxifies the body. The drug in dhara comes in contact with the skin pores, since the procedure is performed from a particular height and a particular temperature is maintained , there will be formation of energy by which the medicine can easily enter pores through friction and thermal action it stimulates proprioceptor and thermoreceptor. The Permeability of the medicine through the skin pores is enhanced because the temperature vasodilation happens, which leads to increase blood flows through the area so that necessary oxygen and nutrition materials are supplied and disease causing toxins like excessive subcutaneous fat, sweat are removed. Due to swedan (parishek) will help to increase metabolic rate (digestion of ama) and also it helps in vasodilation (shrotomukha vishodhana).

Purambada- or Bidalaka (ocular ointment) in inflammatory eye diseases

Mukkadi Yoga is a vidalaka yoga mentioned in Urdwanga roga chikitsa Prakarana of Sahastra yoga text which is said to be useful in inflammatory signs and symptoms of eye, the contents are predominantly cooling, works on vitiated pitta and rakta and majority have haemostatic activity. Hence it has been selected to trans dermal absorption as a pittashamaka action. It also shows present of slightly acidic nature of churnam which may help in augmenting the function of Brajaka pitta ultimately work as a transdermal action.

Tablet Karutha vattu works on inflammatory condition treats swelling and pain, used for external application only. It is applied by making it into a paste in a suitable medium. The Lepa (Paultice) is a potent combination of anti-inflammatory and analgesic herbs, gums and resins

Conclusion

One can conclude from this case report that ophthalmic disorders need not be treated only with local medications or surgical but kriyakalpa are also mentioned in classics for sannipataj kacham and with the help of sedentary changes in lifestyle, this disease can be treated. The condition of this patient is correlated with sannipataj rakhta pradhana kacham.

Mukkadi purambada, netra sekam - kriyakalpa are used to reduce the oedema, while internal medications and lifestyle changes are done to control the cholesterol, obesity and hypertensive condition. Obesity is found to be

one cause factor that is correlated with stholya and as per timira and Stholyata the treatment was given along with lifestyle management. Internal medications were used Shiva Gulika which acts as Kaphavata Shamaka also having anti-inflammatory property, Gomootra Haritki was Shothaghna, predominance of Agni and Vayu Mahabhoot and Most importantly the kriyakalpa was used with medications having kapha and Rakhtahara drugs, Vidalaka helped to reduce oedema

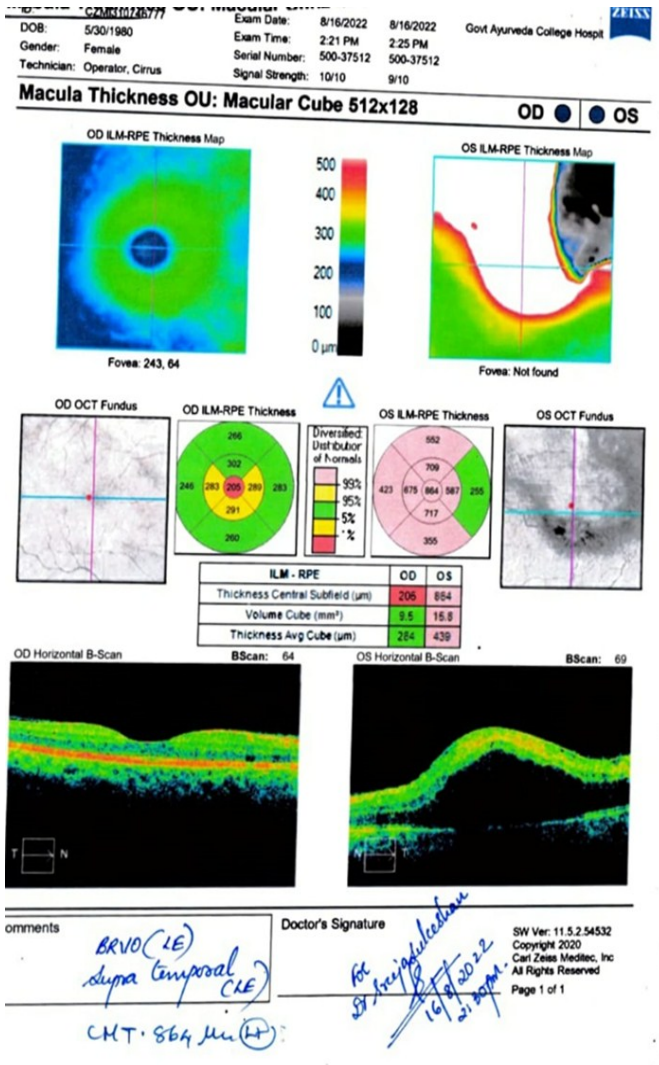
As per some clinical studies (SCORE study) there is strong association of visual acuity (BCVA) in eyes with oedema in cases of CRVO and BRVO. By reducing the oedema (macular) patient can get improvement in BCVA (Best corrected visual acuity).

The report reveals the drugs and treatment protocol used mainly to reduce edema in order to get subjective benefits in RVO. Along with symptomatic management for obesity and hypertension which in this case rule out as common causes which can be seen in RVO.

Patient perspective

Patient was satisfied with the results and treatment with gaining the visual acuity along the visual field and was relieved from Dot and blot haemorrhage and macular oedema, Patient reduce mild weight (3kg) .Patient was given full details about study and informed consent was obtained from him prior to beginning of study.

Optical coherence tomography (16/08/22)- Before treatment



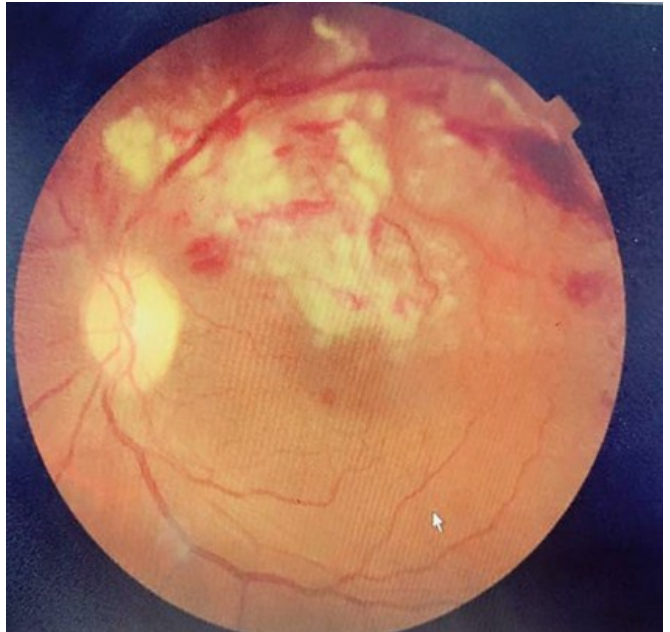
Left eye shows macular cystic space with oedema of 864um thickness.

Fundus examination (16/08/22)



Right eye (OD)

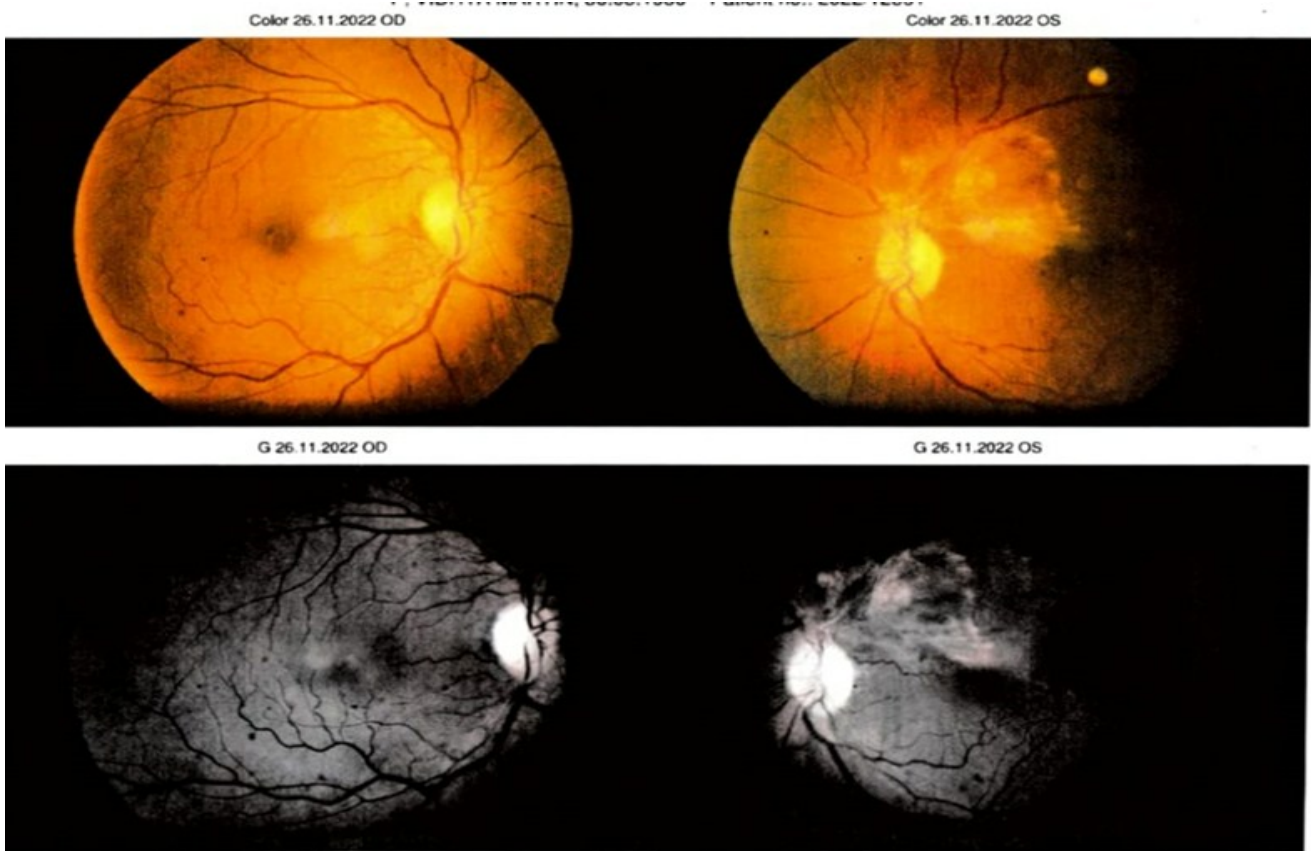
Right fundus is normal



Left eye (OS)

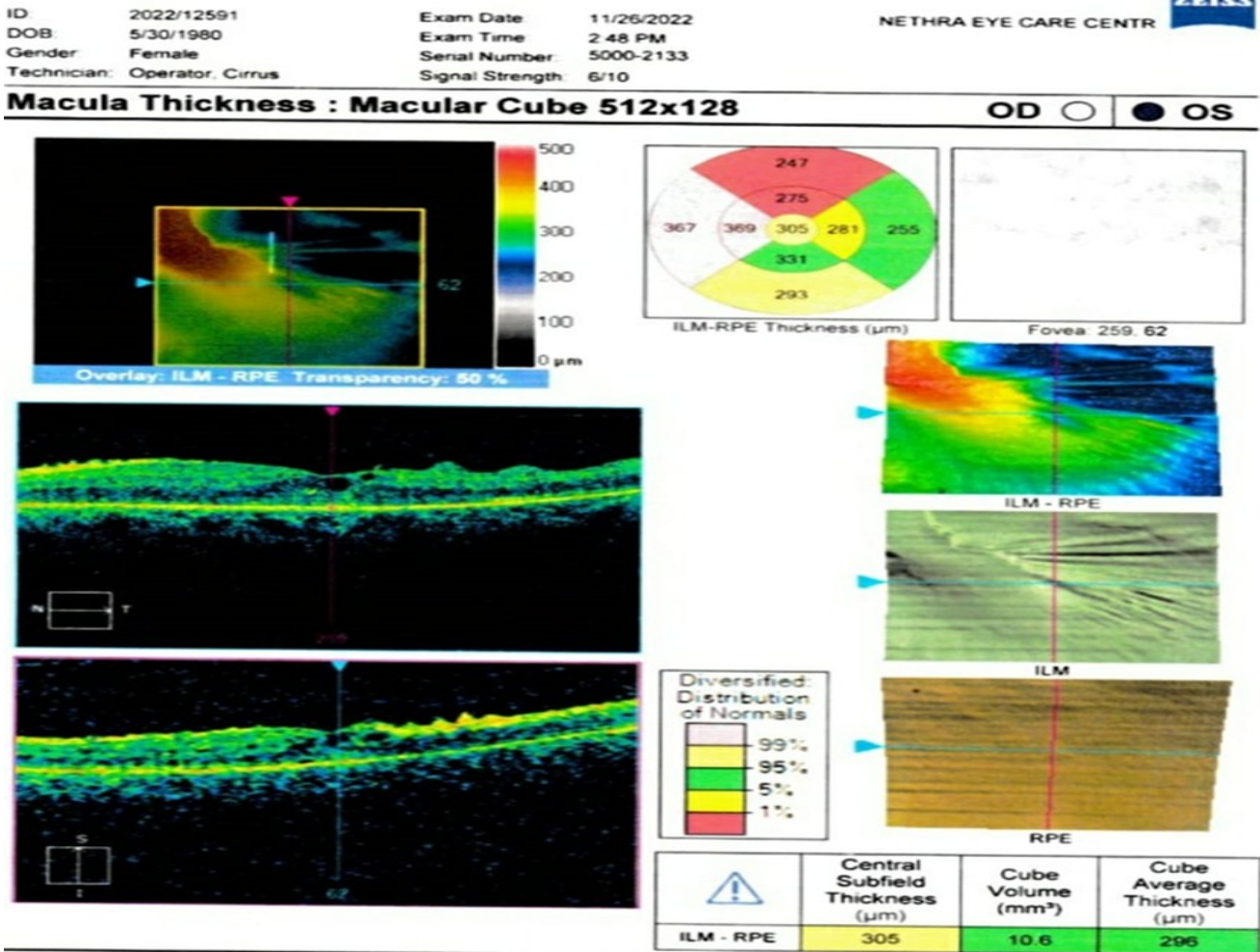
Left fundus shows pale disc, tortuous vessels, haemorrhage (in superior temporal quadrant), Exudates

Fundus Examination on 26/11/22



Left eye fundus image shows resolution of haemorrhage

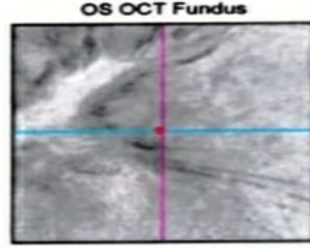
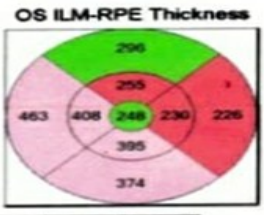
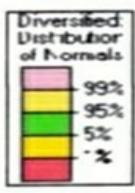
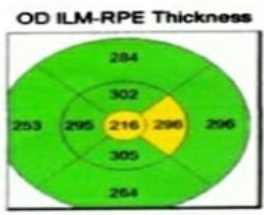
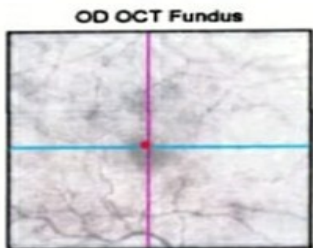
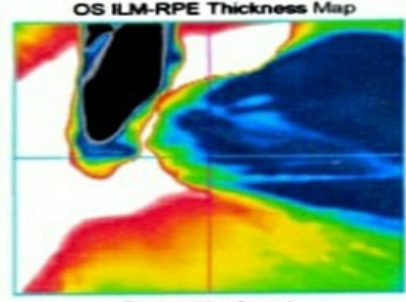
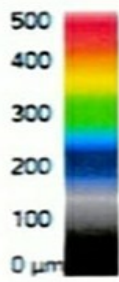
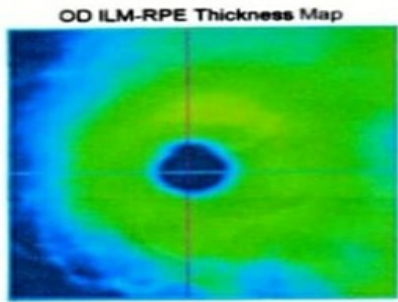
OCT on 26/11/22 (at 3rd month of treatment)- Image shows considerable reduction in macular thickness.



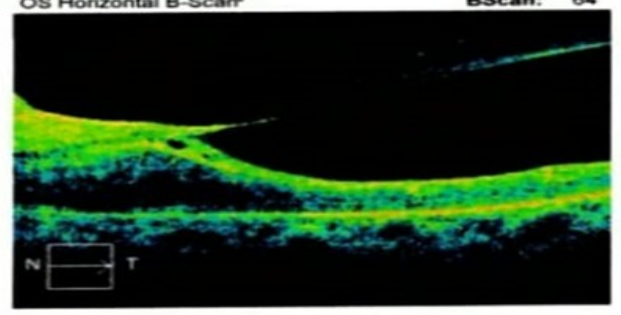
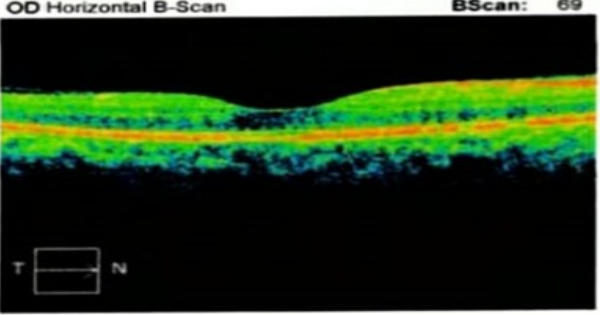
OCT- (24/01/23) – Image after treatment

ID: 20220023917 Exam Date: 1/24/2023 1/24/2023 Govt Ayurveda College Hospit
 DOB: 5/30/1980 Exam Time: 10:54 AM 11:01 AM
 Gender: Female Serial Number: 500-37512 500-37512
 Technician: Operator, Cirrus Signal Strength: 10/10 8/10

Macula Thickness OU: Macular Cube 512x128 OD ● ● OS



ILM - RPE	OD	OS
Thickness Central Subfield (µm)	216	248
Volume Cube (mm³)	9.9	12.1
Thickness Avg Cube (µm)	275	337



Comments
 OS - TRD? (CMT - 248 Avg)
 OD - mild PVD (CMT - 216 Avg)

Doctor's Signature
 For Dr. Ananya Anand
 Ruby P. G. Dr. Pooja Jayaraman
 SW Ver: 11.5.2.54532
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 Page 1 of 1
 24/01/23 at 11:30am

Ethical consideration

Ethical clearance no. (08/AR/IEC/2023, dated 30/01/2023) was obtained from the institutional Ethics Committee of Government Ayurveda College, Tripunithura.

Conflict of interest

None

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