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## Case Report

## Ayurvedic management central serous retinopathy - A case report

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## ABSTRACT

**Background:** Central Serous Retinopathy (CSR) is an eye disease that causes visual impairment ascribable to fluid accumulation in the retina's macular area. CSR leads to the blurring of vision associated with metamorphopsia. The cause of the disease is unknown. The practitioners of contemporary science offer treatment only after observing for 3–4 months to resolve the fluid. The blurring of vision may persist even after oedema has resolved. If oedema does not resolve, they undertake laser photodynamic therapy or photocoagulation, which results in permanent damage to neuroretina and impaired visual acuity. According to Ayurveda, symptoms of blurred vision and metamorphopsia indicate *Vata Dusti* in eyes.

**Case & Intervention:** A 53-year-old man, who sought Ayurvedic treatment for the blurring of vision in the last ten days, was diagnosed with CSR in the right eye. He underwent one course of Ayurvedic management, comprised of oral medication, including *Punarnvadi kashaya*, *Candraprabha Vati*, and *Tiktaka ghrita*, external treatments like *Shiropichu* (application of medicated oil on the bregma) and *Kriyakalpa* (eye treatment) like *Anjana karma*.

**Outcomes:** At the end of a month of the Ayurvedic treatment, visual acuity in the right eye improved to 6/6, and Optic Coherence Tomography affirmed complete resolution of CSR (OCT). A one year follow up confirmed the non-recurrence of the disease.

**Conclusion:** Ayurvedic treatment effectively resolves oedema within a short time with a marked visual outcome. Patients of CSR would benefit from the same if treated promptly in the early stage itself. Such patients shall be encouraged to opt for Ayurveda as a primary treatment modality.

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## 1. Introduction

Central Serous Retinopathy (CSR), also known as Central Serous Chorioretinopathy (CSCR), has recently been understood as a member of Pachychoroid spectrum disorders. In this spectrum, CSR represents stage two, and the choroid is thickened and congested with increased blood vessel diameter, especially in the deep choroid. This results in increased pressure from the deep choroid on the superficial choroid, closer to the retina, damaging the capillaries, which supply nutrients to the Retinal pigment epithelium (RPE) and retina. Leakage of fluid from RPE damaged vessels accumulate under the retina. Eventually, the collected fluid separates the neurosensory retina from the RPE and neovascularization [1] in later stages. Although the precise cause of the CSR disease remains unknown, stress is a prime contributing factor. Such oedema emanates in significant visual disturbance, while the

patient, even with prescription glasses, experiences blurred vision. Metamorphopsia, central scotoma, and other symptoms, primarily unilateral, go unnoticed by the patient more often than not. Contemporary science does not offer any cure for these impairments; they keep such patients under observation for 3–4 months, expecting self-healing of oedema during this waiting period. Even with such an uninterrupted natural resolution, blurred vision may persist for longer durations, manifested as reduced visual acuity [2]. Oedema persistent beyond four months is subjected to laser photodynamic therapy, photocoagulation, and oral mineralocorticoids. The non-absorbent neural retina, directly adjacent to the RPE [3], is thermally damaged in clinical photocoagulation. It only hastens the relief of symptoms rather than reducing recurrence incidents, culminating in RPE detachment [4]. Despite their substantiated deficiencies, CSR patients are subjected to these treatment modalities, resulting in a further degraded visual outcome.

From the Ayurvedic perspective, symptoms like *Aaviladarshana* (blurred vision) and *Vakram rijuvapimanyate* (metamorphopsia) suggest the involvement of *Vatadosa* (Vata humour) in the *Dristi mandala* (the innermost part of the eye) [5].

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## 2. Case report

A 53-year-old non-diabetic, non-hypertensive man experiencing blurred vision approached an Ophthalmologist. He had no history of eye-related problems earlier, and his family history was also not remarkable. The Ophthalmologist diagnosed his condition as CSR in the right eye prescribed him Nevonac eye drops and Table 1 -site and advised rest. His left eye was found to be normal. The patient's job required him to get a fitness certificate from a registered physician, which was denied to him on having developed CSR. They strongly advised him to rest for 3–6 months for the complete resolution of CSR before resuming his work.

### 2.1. Clinical findings

General examination revealed appetite and micturition to be regular and constipated bowel movements. The review of other systems and vitals were within normal limits. The best-corrected visual acuity (BCVA) was 6/18 in the right eye and 6/6 in the left eye. Fundus examination showed mild elevation on the macula of the right eye. Optic Coherence Tomography (OCT) confirmed the onset of CSR, with an average macular thickness of 307.3  $\mu$ m.

Examination of the patient- Patient with Vata Pitta Prakriti, Alpa upalipita jihwa (slightly coated tongue), Vataja Nadi (Vata type of pulse), badha mala (constipated), presented with an Avila Darshana (blurred vision).

### 2.2. Therapeutic intervention

The patient did not take the Allopathic medicines prescribed to him. We then put him on Ayurvedic therapy. He was prescribed the following medication for 15 days:

1. *Punarnavadi kashaya*-20 ml, mixed with 45 ml of warm water, twice daily,

2. Tab. *Chandraprabha Vati* – 2 tabs (200 mg) twice daily with *Punarnavadi kashaya*
3. *Anu tailam* - 2 drops in each nostril, twice daily. He was instructed to instil the medicines in the nose, lie down for some time and spit out the sputum from his throat.
4. *Tiktaka ghrita* + *Kalyanaka ghrita* - 10 ml each, at bedtime.
5. *Shiropichu* (application of oil on the bregma) with *Brahmi taila*, twice daily.

On the 16th day, he underwent *Virechana* (purgation) with *Gandharvahastadi taila* (purgative medicine) –50 ml mixed in with 25 ml of warm milk.

Starting the next day, he was advised to perform *Anjana karma* (application of collyrium) with *Elaneer kuzhambu* once daily for the next 15 days.

Table 1 shows the order of internal medicines and their intended purpose.

Table 2 shows the subsequent order of treatments and their expected effects.

Diet: Diet regimen plays a vital role in bolstering the effectiveness of treatments. The patient was advised to avoid food that provoked Vata and Pitta Dosas in this case. Food like spicy, sour, oily, fermented, and refrigerated was avoided. Day sleep, going out in the sun, waking up till late at night and visualizing bright shining objects were restricted.

He was advised to take a bland diet comprising rice gruel, green gram, rock salt, and vegetables like carrot, beetroot & spinach.

Table 3 shows the Ayurvedic diet and exercise regimen adhered to by the patient.

## 3. Results

Under the initial 15-day treatment, the patient's visual acuity improved from 6/18 to 6/9. After the 35th day of treatment, his visual acuity improved further, from 6/9 to 6/6; OCT validated the

**Table 1**

List of internal medicine with their possible effects.

Medicine	Dose	Time of administration	Duration	Possible effect
<i>Punarnavadi kashaya</i>	20 ml + 45 ml of warm water	Morning and Evening	35 days	<i>Shophahara</i> (alleviates swelling)
<i>Chandraprabhavati</i>	2 tablets with <i>kashaya</i>	Morning and Evening	35 days	<i>Kapha pitta hara</i> (alleviates <i>kapha</i> and <i>pitta Dosas</i> )
<i>Tiktaka ghrita</i>	10 ml + rice gruel	After dinner	13 days	<i>Pitta kaphahara</i> (alleviates <i>pitta</i> and <i>kapha Dosas</i> )
<i>Kalyanaka ghrita</i>	10 ml + rice gruel	After dinner	13 days	<i>Tridosahara</i> (alleviates all the 3 <i>Dosas</i> of the body)
<i>Gandharvahastadi taila</i>	50 ml + 25 ml of warm milk	Early morning	1 day	<i>Virechana</i> (purgation)

**Table 2**

List of treatments with their possible effects.

Treatment	Dose	Time of administration	Duration	Possible effect
<i>Anutailam</i>	2 drops	Morning and Evening	35 days	<i>Tridosha shamana</i> (alleviates all the 3 <i>Dosas</i> of the body).
<i>Siropichu</i> (application of oil at the bregma)	10 ml soaked in cotton	Morning and Evening, for 30 min	35 days	<i>Vata shamana</i> (alleviates the <i>vata Dosa</i> ).
<i>Anjana karma</i> (application of collyrium)	1 drop	Morning	21 days	- <i>Pitta shamana</i> (alleviates the <i>pitta Dosa</i> ). - <i>Ropanam</i> (healing).

**Table 3**

List of diet & regimen followed by the patient.

Diet	Regimen	Instructions
Boiled rice gruel Light food (easily digestible) Green gram, rock salt, wheat. Vegetables- carrots, beetroot, spinach, amaranthus, ash guard, pumpkin, cucumber. Curd, polished rice, fermented food, urad dal, chicken mutton, refrigerated food, cold drinks, aerated drinks. Sour fruits like oranges, grapes, passion fruit, lemon.	Sleep for 6 h at night.  Relax with friends & family Mild physical exercises. Day sleep Mental stress Use of electronic gadgets in the dark room.	To be followed      To be avoided

complete resolution of CSR with an average macular thickness of 256.6  $\mu\text{m}$ . A 3-month follow-up evaluation revealed that normal vision was maintained and no recurrence of the CSR. Follow-up after **one year** ruled out recurrence and affirmed normal vision.

Table 4 enlists a timeline of events.

## 4. Discussion

### 4.1. Strengths and limitations

The patient preferred Ayurvedic treatment within ten days of diagnosis of his CSR to exclude any other remedial interventions. Non-chronicity [i.e., acute] of the condition and the patient having selected Ayurveda as the primary treatment option was the most significant strengths. However, the COVID-19 pandemic engendered lockdown restricted medical consultation only through telephonic and video conferencing media. For the same reason, the unavailability of in-patient care was the apparent limitation of the methodology.

### 4.2. The rationale behind ayurvedic intervention

#### 4.2.1. Samprapti (pathophysiology)

The patient presented with blurred vision and was diagnosed with CSR in the last ten days. Based on the symptoms like *Aaviladarshana* (blurring of vision), *Vakram rjuvapi manyate* (metamorphopsia), vision ailment was diagnosed as a case of *VatajaTimira* (a disease caused by *Vata Dosa* of the body), associated with *Abhishyanda samprapti* (pathological process causing oozing of fluids from the internal channels of the eye). This case involved both the *Dristimandala* (the innermost part of the eye) and the *Sarvakshi* (the whole of the eye), the delinquents being *Vata pradhana Tridosha* (all the three *Dosa* of the body, but dominant *Vata Dosa*). Previous studies on CSR have noted that it is commonly found in persons with Type A personalities [6]. Such personalities are similar to the *Vata Prakriti* person (*Vata* type of body constitution), like the patient in this case.

The sole predominant symptom here is *Aavila Darshana* (blurred vision); the other diagnostic means, such as the fundus picture and OCT, could decipher the *Samprapti* (pathological process). It can be inferred that a swelling in the retina's macular area on interpreting these reports. In the *Samanya samprapti*

(pathological process) of *Sopha* (swelling), it can be seen that the *Vata dosa* carries the deranged *Tridosas* through the outer channels of the body and lodges in between the *Dhatus* (body tissues), thus manifesting as *shopha* [5] and depending upon the predominance of *Dosas*, the patients present with the characteristics of this *Shoppha*. The nature of *Shoppha* seen in CSR is like that of *Vatadosa* in terms of its *Ashukaritwa* (agile) nature. The swelling seen in CSR is quick to manifest, resolve, and reoccur, which is the feature of *Vatika shopha* [5]. Though the nature of the ultimate manifestation of the disease is *Vataja* in nature; it is the *Abhishyandatwa* (pathological process causing oozing of fluids through the internal channels of the body) in the channels of the head and neck that lead to fluid accumulation in the *Netra* [7]. In *Abhishyanda*, there occurs the active involvement of all the *Dosas*, including *Rakta*.

#### 4.2.2. Samprapti vighatana (decoding of pathophysiology)

Ayurveda describes treatment as the process of *Samprapti vighatana* (decoding of pathological process). The medicines that were *Tridosha shamaka* (alleviate the three *Doshas*) and *Shophahara* (reduce swelling) were prescribed. *Punarnavadi kashaya* [8] is one such medicine tailored for patients suffering from swelling. Its ingredients acted by expelling the excessive fluid from the body, thereby reducing *Shoppha*. *A. tailam* [5] was prescribed as *Pratimarsha Nasya* (small doses of nasal medicament) in a dose of 2 drops in each nostril. The *Acharyas* have mentioned *Anu taila* as *Shamana* (*Dosa* pacifying), a type of *nasya* [8]. This means it pacifies the *Dosas* in their place. *B. taila* [5] was used for *Shiropichu* (a treatment procedure). Soaking a piece of cotton with *B. taila* was kept on the bregma part of the head for 30 min twice daily. This helped control the *Vatadosa* on the *Urdhwajatru pradesha* (the part above the neck region), thus alleviating the disease. *Snehana karma* (oleation) was done in *Vicharana snehapana* (ghee mixed with food). i.e., *T. ghrita* [5] and *K. ghrita* [5] were advised to be mixed with rice gruel in a 20 ml dose daily after dinner. Once the patient showed mild symptoms of oleation like oiliness of skin and looseness of stools, *Virechanam* (purgation) was done with *G. taila* (purgative medicine). *S. karma* (oleation) helps bring all the vitiated *Dosas* to the *Koshta* (central part of the body), making it easy to be expelled. It also helps alleviate the *Vatadosa*. *K. ghrita* [9], which is *Medhya* (brain rejuvenator), probably helped regulate the stress factor associated with the disease. The patient had nine *Vegas* (bouts) of *Virechana* and felt a

**Table 4**

Timeline of events.

Date of visit	Findings	Intervention	Outcome
06.05.2020	Patient c/o blurring of vision and consults an Ophthalmologist. BCVA-6/18, 6/9 Fundus examination reveals CSR.	Nil	Nil
09.05.2021	OCT confirms CSR. Average macular thickness- <b>307.3 <math>\mu\text{m}</math></b>	1. Nevonac eye drops 2. Tab.I-site	Nil
11.05.2021	Ayurvedic consultation and assessment.	1. Punarnavadi kashaya 2. Chandraprabha vati 3. Tiktaka ghrita 4. Kalyanaka ghritam internally. 5. Pratimarsha nasya with Anu taila. 6. Siro pichu with Brahmi taila.	Not assessed.
24.05.2020	Not assessed.	Virechana done with Gandharva hastadi taila.	Not assessed.
26.05.2020	Not assessed.	Started anjana karma with Elaneer kozhumb, once daily; also Triphala churna- 1tsp + ¼ tsp ghee + ½ tsp honey at bed time. Anjana Karma continued.	Vision improved.
01.06.2020	The patient revisited the Ophthalmologist. BCVA- 6/9, 6/6.		Vision improved.
15.06.2020	OCT revealed complete resolution of CSR. Average macular thickness- <b>256.6 <math>\mu\text{m}</math></b> .	Medicines stopped.	Vision improved.
16.09.2020	Follow up- BCVA- 6/6(Both eyes), no recurrence of CSR.		

lightness of the body after that. After detoxification, *Anjana karma* (application of collyrium) was performed with *Elaneer kozhumb* once daily. It is advised to be used in *Pitta pradhana Netra rogas* (eye diseases caused by Pitta humour). *Netra* being a *Pittapradhana avayava* (organ predominant of Pitta humour), treating any eye disease involves *Pitta shamana* (alleviation of Pitta humour) and other *Dosas*. As it was *Greeshma rithukala* (summer), *E. kozhumb* was better than other *Teekshna Anjana* (strong collyriums), complying with the advice by the *Acharyas* to avoid *Teekshna Anjana* in *Greeshma Kala*. Also, the *Ropana* (healing) property of this *Anjana* (collyrium) helped gradually heal the lesion, improving the vision. He was asked to take one teaspoon of *Triphala churna* along with  $\frac{1}{4}$  teaspoon of plain ghee and  $\frac{1}{2}$  teaspoon of honey at bedtime. *Triphala* is the best *Chakshushya Rasayana* (eye rejuvenator), as are ghee and honey. *Acharyas* have devised this combination to be consumed by a patient suffering from eye diseases [7]. These probably helped to rejuvenate the damaged cells of the macula, thereby retaining the normal vision after the treatment.

In this case, Ayurvedic treatments effectively managed CSR in reversing its pathology, emanating in the marked visual outcome. It also prevented the recurrence of CSR. The potential of Ayurveda in CSR management should be explored by conducting clinical trials with large samples.

#### 4.3. Patient perspective

"I experienced the blurring of vision and consulted an Ophthalmologist. He examined my eye after instilling some drops, and he told me I was suffering from CSR in the right eye and prescribed me eye drops and a tablet. He told me I had developed CSR because of stress, and he was expecting it to get resolved in 3–4 months or more. Till then, he cannot certify me for my job. One of my friends told me about Ayurvedic treatment for the eyes. The consultation was done through telephonic conversation. I was prescribed a kashayams, ghritams, tablets, oil for the head & nasal installation. I also underwent purgation. Then, I was asked to apply collyrium. After 15 days of treatment, I went back to the Ophthalmologist who checked my vision and told me it had improved considerably, and I could read the whole chart except for the last line. I was asked to continue to take rest and get back to him after 15 days to repeat the eye scan. On taking the eye scan, the Ophthalmologist was astonished to find that the swelling in my eye nerve had completely vanished and the vision was restored as before."

#### Informed consent

Written informed consent was obtained from the patient for publication of this case report.

#### Author contribution

Both the authors made equal contribution in treating the case, documenting it and structuring the manuscript.

#### Conflicts of interest

None.

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