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CASE REPORT
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Novel ayurveda management of central serous retinopathy (c.s.r.): An explorative case report

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Abstract CSR is a retinal disorder that presents with the formation of fluid at the subretinal level, indeed bringing about vision impairment. It has some relation to hormonal and fluid imbalances due to stress, especially in subjects carrying high-stress profiles. Conventional treatments involving laser therapy or anti-VEGF injections only aim at treating the symptoms rather than preventing recurrence. Maybe CSR management can also emerge from Ayurveda due to the body system balancing approach inherent within it. This case study aims to report an attempt under Ayurvedic management for effective CSR treatment with dosific balance and systemic fluid retention under the care of other stress factors. Ayurvedic treatment was given to a 45-year-old female who was having no response to one year of conventional treatment of CSR. She was given therapy in combination with Gokshuradi Guggulu and Punarnavashtaka Kwatha. Simultaneously, Brahmi Vati and Avipattikar Churna were given to decrease fluid levels, inflammation, and stress. OCT follow-up during ocular examination. During baseline assessment, significant macular edema was noticed, and reduced visual acuity at 6/18 was present in the affected eye. With the Ayurvedic intervention that lasted for three months, the OCT scan revealed reduced macular thickness, normalization of fluid balance, and normalization of vision to 6/6, in near vision improvement from N10 to N6 and no relapse for up to 1.5 years. Ayurvedic management for CSR, using Pitta balance and stress management, decreased fluid accumulation, restored vision, and reduced recurrence. This case can establish Ayurveda as a primary or adjunct therapy for chronic disorders like CSR of the retina. It points to the necessity of including holistic approaches and further studies for validation of these results.

Keywords: stress type 1, subretinal fluid, macular edema, visual acuity

1. Introduction

Fluid collection under the retina, which leads to distorted vision, is a retinal disorder known as central nervous retinopathy. This condition can considerably affect central vision, causing individuals to experience significant impairments in daily activities such as reading and identifying faces. Some cases may resolve spontaneously; otherwise, if it is persistent, chronic damage to the retina could arise, particularly in the case of the macula (Tarabishy et al., 2011).

The exact cause of C.S.R. is still unknown, but some factors are known to precipitate it. One major cause is stress type 1, which induces a reaction in the autonomic nervous system and elicits hormonal reactions. This stress elevates corticosteroids, disrupting bodily and retinal fluid regulation. Other risk factors identified include hormonal imbalance and corticosteroid use, which increase the risk of C.S.R.

Treatment options for modern management of C.S.R. include laser photocoagulation, anti-VEGF injections, and PDT. Most such treatments have focused on reducing subretinal fluid and improving visual function. Laser photocoagulation stops leaking in retinal areas. Anti-VEGF injections prevent abnormal vessel growth and fluid leakage. PDT links a light-activated drug with specific abnormal vessels. Such treatments do not prevent recurrence once symptoms are relieved (Chatziralli et al., (2017).

Ayurveda has its definition as C.S.R., which describes the condition as Shotha: fluid retention and inflammation in body tissues. According to Ayurveda, C.S.R. arises from a disturbance in Pitta dosha. Three doshas function in the body to perform metabolic and transformative processes. Pitta imbalance causes overheating and inflammation, which causes damage to fluid channels, which are known as Rasa Vaha Srotas. Proper fluid movement is disrupted and leads to improper fluid management and accumulation, as in the case of C.S.R., when Pitta becomes agitated (Serebryakov et al., 2014).

This case study analyzes the C.S.R. diagnosis of a 45-year-old female patient who had undergone modern medical treatment for 1.5 years. However, she continued to relapse, and she sought Ayurvedic care. The patient was subsequently

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treated with the following Ayurvedic regimen in an attempt to balance Pitta, fluid retention, and stress (Type 1 personality). The patient started experiencing relief within 2 months. Among the drugs used were Gokshuradi Guggulu, Punarnavashtaka Kwatha, Brahmi Vati, and Avipattikar Churna. This occurred because of their anti-inflammatory, detoxifying, and stress-relieving properties.

Therefore, this combination proved very effective for patients who showed significant improvement in visual function and overall well-being with no recurrence of C.S.R. after completing the treatment. This case highlights the possibility of Ayurveda being a prime treatment modality in place of modern treatment, especially for chronic ophthalmic conditions such as C.S.R., which are highly likely to be recurrent. From the basic view of focusing on systemic balance and mentality, thus focusing more on the root causes than merely treating symptoms, Ayurveda goes beyond current modern-day treatments (Chopra et al., 2002).

2. Materials and Methods

2.1. An explanation

This O.S. was scanned on Nov 30, 2021. The color code macula shows the thickness: the thicker areas are red and orange, whereas the thinner layers are greenish blue. The mean cube is shown by the circular graph of retinal thickness values of 317 µm, and the central subfield thickness is 254 µm. Here, we present an OCT scan of the cross-sectional view of the retinal layers (Figure 1).

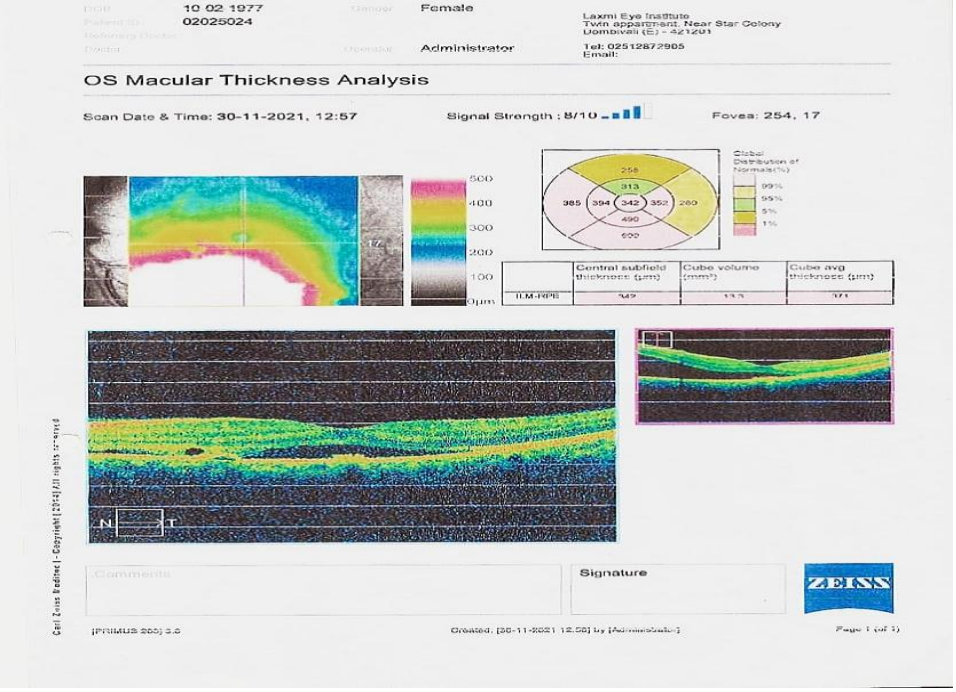

Figure 1 O.S. Macular Thickness Analysis 30/11/2021.

2.2. Footnotes

Signal strength: 8/10, clear image. Fovea: 254 µm - the point of sharpest vision. ILM-RPE: The distance between the internal limiting membrane and the retinal pigment epithelium reflects retinal health.

2.3. Case Study

2.3.1. Patient profile

The patient was a 45-year-old female who presented to the clinic complaining that she had decreased vision in the left eye for the past 15 days. She cannot read and find a central gray spot in her visual field. Her job was very stressful, and this was what contributed to her condition. Ophthalmic evaluation confirmed the patient's suspicion of being diagnosed with C.S.R. in the left eye.

2.3.2. Clinical Findings

Visual acuity in the left eye was recorded to be 6/18. The right eye did not present with any disease involvement in 6/6 patients. N10 was indicated for near vision in both eyes, and N6 was found in the right eye. The I.O.P. was 14 mmHg on both

sides, and the color vision was normal. Fundoscopy revealed macular edema due to subretinal fluid accumulation in the left eye, which was consistent with C.S.R (Lek et al., 2018) (Table 1).

Table 1 Ophthalmic assessment table.

Ophthalmic Parameter	Right Eye	Left Eye	Details
Visual Acuity	6/6	6/18	Vision measurement using the Snellen Chart
Near Vision aided	N6	N10	Near vision test, with N10, indicating diminished clarity
Tonometry (I.O.P.)	14 mmHg	14 mmHg	Normal intraocular pressure in both eyes
Color Vision aided	Normal	Normal	No color vision defects were detected
Fundoscopy	Normal	Macular swelling, subretinal fluid	Swelling and subretinal fluid observed in the left macula
Ocular Motility	Full	Full	Full extraocular muscle movements were observed in both eyes
Anterior Segment	Clear	Clear	No signs of anterior segment pathology
Pupil Reaction	Reactive	Reactive	Pupillary reflexes were normal in both eyes

2.3.3. Ayurveda Assessment

Ashta Vidha Pariksha and Nadi Pariksha concluded that there were symptoms of Vata–Kapha imbalance. Another aspect of Ashta vidha Pariksha is that the body type is lean with a slight coating on the tongue, which shows a minor level of Ama. All the other parameters, namely, stool, urine, and voice, were routinely measured (Shubhashree et al., 2020), (Nair et al., n.d.) (Table 2).

Table 2 Ashta video Pariksha (Eightfold Examination).

Ashta video Pariksha	Observations
Nadi (Pulse)	*Vata-Kapha* imbalance
Mutra (Urine)	Normal
Mala (Stool)	Normal
Jihva (Tongue)	Slightly coated, indicating mild *Ama* (toxins)
Shabda (Voice)	Normal
Sparsha (Skin)	Normal
Drik (Eyes)	Blurred vision in left eye, metamorphopsia
Akruti (Body Constitution)	Lean physique, slightly underweight

3. Anterior segment examination

The anterior segment examination was performed regularly. The eyelashes, eyelids, conjunctiva, and cornea were regular in appearance with no features of inflammation or structural abnormalities. The lens, media, and intraocular pressure were regular, thus eliminating possible causes of glaucoma. All these features can lead a diagnostician to suspect some impairment within the retina or macula area (Ursea et al., 2010) (Figure 2).

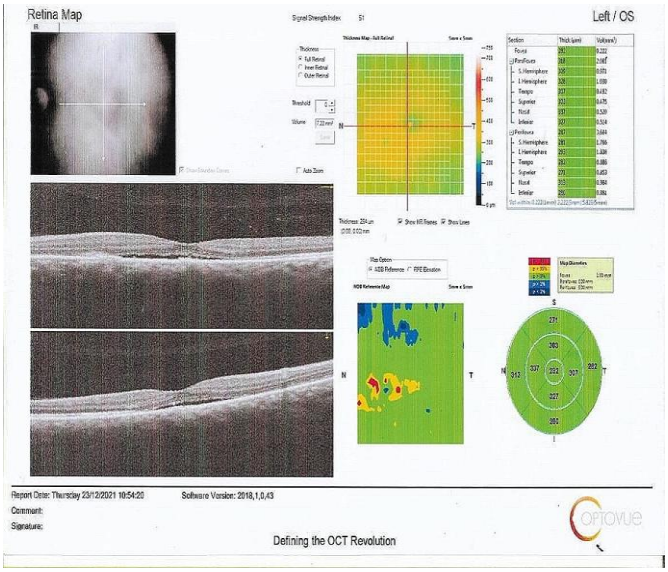

Figure 2 Retina map and cross-sectional OCT (23/12/2021).

4. Explanation

The dimensions of the corresponding length of the retina can be observed in the high-resolution retinal map acquired from the scan on Dec 23, 2021. The colored squares indicate different levels of the total, inner, and outer retina from a topographic point of view while highlighting the location of the fovea at 282 µm. Cross-sectional perspectives of the subretina can help identify structural anomalies such as fluid leakage or loss of thickness.

4.1. Footnotes

Fovea: 282 µm, normal thicknessSignal Strength: 51 mild image qualityReference Map-NDB: Points to areas in the retinal abnormality based on points away from the normative database (Table 3).

Table 3 Detailed Examination of Anterior Segment Structures

Anterior Segment Structure	Right Eye	Left Eye	Details
Eyelashes	Normal	Normal	No signs of eyelash pathology
Eyelids	Normal	Normal	No signs of blepharitis or ptosis
Conjunctiva	Clear	Clear	No conjunctival redness, discharge, or inflammation
Cornea	Clear	Clear	No corneal opacities or abrasions were detected
Anterior Chamber	Deep and Quiet	Deep and Quiet	No abnormality in aqueous humor or chamber depth
Lens	Clear	Clear	No cataracts or lens opacity
Extraocular Muscle Movement	Full	Full	No limitation in extraocular muscle movements in either eye

4.2. Fundoscopy findings

The margins of the optic disc were average, with no signs of damage due to glaucoma. Severe macular degeneration was present, with central macular thickness reducing from 254 µm to worsening at follow-up visits; retinal blood vessels and the peripheral retina were intact, which would suggest that vision loss was local to the macula. (Wightman et al., 2019), (Dinc et al., 2011) (Table 4).

Table 4 Fundoscopy findings.

Fundoscopic Structure	Right Eye	Left Eye	Details
Optic Disc/Cup Disc Ratio	0.3	0.3	Average disc ratio, no optic nerve abnormalities
Macula	Normal	Subretinal fluid	Fluid accumulation detected at the macula in the left eye
Retinal Blood Vessels	Normal	Normal	Blood vessels appear normal, with no hemorrhage or dilation
Foveal Reflex	Present	Absent	Foveal reflex absent in the left eye due to macular edema
Peripheral Retina	Normal	Normal	No signs of peripheral retinal thinning or detachment

5. Therapeutic Interventions

5.1. Ayurveda Treatment

The patient was treated via the following Ayurvedic protocol (Vaghasiya et al., 2022), (Narayan et al., 2024) (Table 5).

Table 5 Srotas Pariksha and Treatment.

Srotas (Channel)	Ayurvedic Imbalance	Ayurvedic Treatment
Rasa Vaha Srotas (Fluid Channel)	*Pitta* Imbalance	*Gokshuradi Guggulu* to balance fluid and reduce inflammation
Manovaha Srotas (Mental Channel)	*Vata-Kapha* Imbalance	*Brahmi Vati* for stress management and neuroprotection
Mutra Vaha Srotas (Urinary Channel)	Fluid Accumulation	*Punarnavashtaka Kwatha* to improve fluid drainage and detoxify
Annavaha Srotas (Digestive Channel)	*Pitta* Imbalance	*Avipattikar Churna* to improve digestive health and balance *Pitta*

6. Posttreatment Ophthalmological Examination

Visual examination posttreatment revealed high visual acuity in the patient after treatment with Ayurveda. The Snellen visual acuity of the patient was at the 6/12 level, which gradually worsened. However, after treatment with Gokshuradi Guggulu, Brahmi Vati, Avipattikar Churna, and Punarnavashtaka Kwatha, the patient's visual acuity improved to 6/6 by the third visit. OCT scans revealed attenuation of macular thickness, which was consistent with improvements seen clinically in visual function in the patient. Near vision was initiated at N10 but improved to N6 by the end of day 5 of treatment, allowing clear reading without magnification. The thinning of the macula ceased due to treatment, and overall systemic and ocular health improved, with positive outcomes noted. These cases demonstrate the potential for early intervention through Ayurveda to prevent continued visual deterioration. (Basu et al., 2016), (Widdig et al., 2003).

7. Posttreatment visual assessment

A visual timeline was plotted from the patient to observe the efficacy of Ayurveda. Initially, her Snellen visual acuity was 6/12, meaning that it was mildly impaired. After three months of Ayurveda treatment with Gokshuradi Guggulu, Brahmi Vati, Avipattikar Churna, and Punarnavashtaka Kwatha, her Snellen visual acuity advanced to 6/6. Progress was further supported by OCT scans that revealed less macular thinning. Near vision improved from N10 to N6, and large print or magnification aids were no longer needed. In contrast to previous experiences where macular thinning progressed even after treatment, Ayurveda stopped macular thinning progression and improved it. Resolution of fluid accumulation and a reduction in stress type 1 symptoms suggest that Ayurveda can be used to manage CSR-like conditions and promote health both in the body and the eye (Kasten et al., 2006), (Spitzyna et al., 2007) (Table 6).

Table 6 Vision assessment posttreatment.

Vision Parameter	Right Eye	Left Eye	Details
Distance Vision	6/6	6/6	Significant improvement posttreatment
Near Vision	N6	N6	Near vision normalized posttreatment

8. Follow-up and Outcome: Outcome Evaluation after Vision Therapy

Significant improvement was observed in the patient at three months of follow-up after initiation of Ayurveda treatment, which included improvement in visual acuity to 6/6 bilaterally, significantly reduced accumulation of fluid beneath the retina, and a reduction in central macular thickness from 342 µm to 214 µm, as recorded during follow-up by OCT scans. The patient also reported good quality-of-life indices with no residual visual symptoms. The Ayurveda regimen treated her body's imbalances, resulting in her full recovery and stabilizing her vision (Barrett et al., 2009).

9. OCT findings

The OCT scan confirmed the presence of subretinal fluid in the macula of the left eye, whose central macular thickness was 342 µm, which was consistent with the diagnosis of acute C.S.R (Goebel et al., 2002) (Table 7 and Figure 3).

Table 7 OCT Results Before and After Treatment.

OCT Findings	Baseline (Nov 2021)	Followup 1 (Dec 2021)	Followup 2 (July 2022)
Central Macular Thickness	342 µm	282 µm	214 µm
Subretinal Fluid (SRF)	Present	Reduced	Resolved
Cube Volume	13.3 mm^3	7.22 mm^3	6.80 mm^3
Cube Thickness	371 µm	264 µm	163 µm

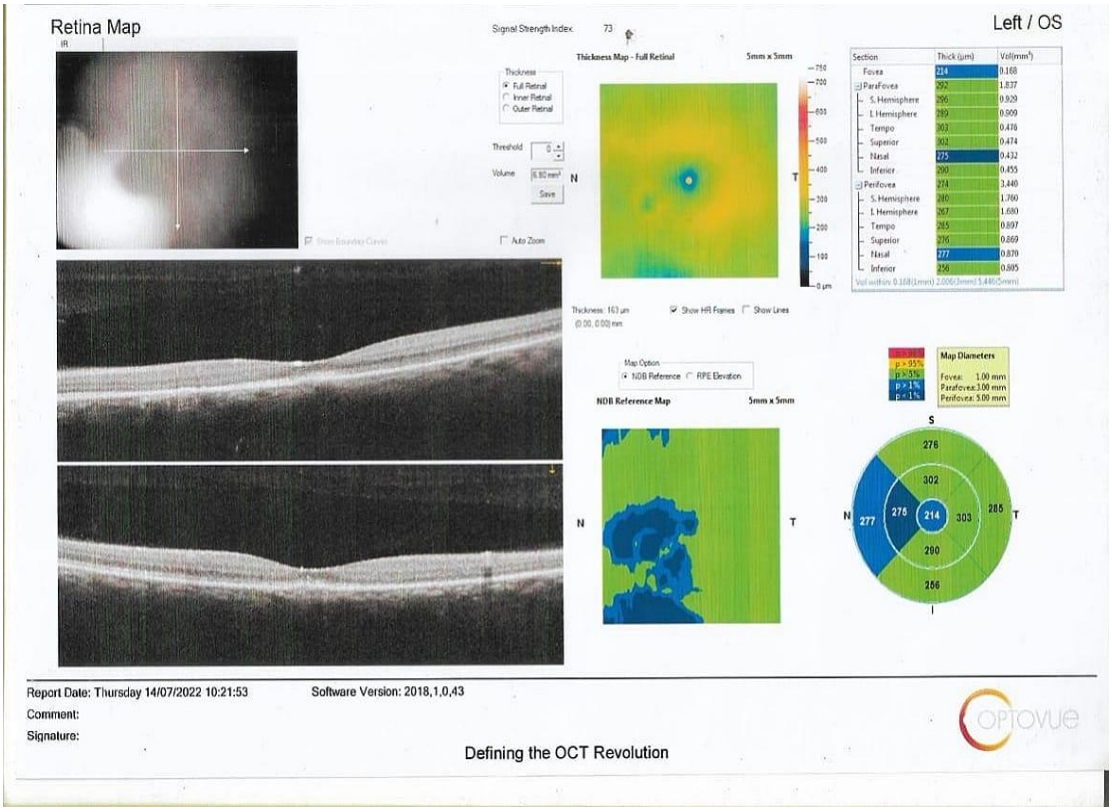

Figure 3 Retina map and OCT (14/07/2022).

10. Explanation

A third figure from the Jul 14, 2022 scan depicts a decrease in foveal thickness at 214 µm, possibly due to thinning or progression of disease. Color coding from the retina map points to variation during retinal processes, including the foveal dip. OCT transparently reveals the layers of the retina and thus can monitor further changes in the health of the retina.

Footnotes:

Fovea: 214 µm, smaller than the previous measurements, indicating progression of the disease. Signal strength: 73, a higher-quality image. N.D.B. Reference Map: Regions where pathology should be reassessed.

11. Discussion

Central serous retinopathy (C.S.R.) is a multifactorial retinal disease involving stress-related factors, systemic imbalances, and environmental stressors. Some interventions, such as laser photocoagulation, anti-VEGF injections, and PDT, temporarily ameliorate symptoms, but the cause is left untreated, and recurrence continues. Ayurveda addressed the treatment of disease from a more curative and preventive perspective, correcting the disease and maintaining fluid balance throughout the body (Sharma et al., 2022).

The patient in this case reported here received modern treatments for one year. Symptoms continued to persist, and the recurrence of C.S.R. encouraged her to consider seeking alternative care. Ayurvedic treatment consists of a principle-based approach targeting the healing of both Pitta dosha imbalance and stress (type 1 personality), two factors that have also been established as the general cause of this patient's condition (Ali et al., 2021).

The Ayurvedic regimen included Gokshuradi Guggulu, Punarnavashtaka Kwatha, Brahmi Vati, and Avipattikar Churna. Each of these preparations aims at tackling different kinds of imbalances responsible for C.S.R.; for example, Gokshuradi Guggulu is anti-inflammatory and reduces fluid retention, whereas Punarnavashtaka Kwatha supports detoxification and enhances the drainage of fluids from the body. Both formulations are essential for tackling the fluid buildup typical of C.S.R.

Brahmi Vati was also intended to manage stress, which predominantly sustains C.S.R. Relieving stress. Brahmi Vati prevents hormonal imbalances that aggravate corticosteroid elevation and fluid retention. Ayurvedic interventions clearly illustrate how the management of disease can be centered around maintaining optimal mental/psychological status, often in direct conflict with more traditional, "biomedical" treatment modalities (Manasi et al., 2020).

Pitta imbalances were ameliorated by Avipattikar Churna, and digestive health was maintained. The root Ayurveda state is a component of systemic balance overall. To maintain average fluid balance and avoid inflammation, good digestion is crucial, and these are essential components of the pathology of C.S.R. Aiding digestion while decreasing Pitta imbalances in this patient assisted in recovery and prevented recurrence.

Each Ayurveda treatment has strengths. Modern medicine is a mechanism for the swift relief of acute symptoms and is well suited for emergencies. However, it often does not prevent the recurrence of chronic conditions such as C.S.R. because it mainly focuses on managing symptoms rather than curing the ailment from its roots. On the other hand, Ayurveda tends to balance the body's internal energies and the systemic approach toward long-term health-oriented conditions, such as C.S.R., by correcting the fundamental imbalances that cause a condition (Dagar et al., 2021), (Mahale et al., 2023).

In this case, Ayurvedic treatment stabilized her vision, reduced fluid accumulation, and improved her quality of life. OCT revealed a marked reduction in macular thickness, and the patient remained symptom free for 1.5 years after starting her treatment. The unique approach of Ayurveda, which considers an individual's physical and psychological well-being, led to healing beyond what modern treatments alone could offer.

Indeed, Ayurvedic treatment combined with orthodox medical interventions has reasonable prospects compared with orthodox medical intervention alone for patients who have C.S.R. Further comparative clinical studies between Ayurvedic treatment and orthodox medical interventions will help in evaluating their efficacy in treating retinal diseases (Gawęcki et al., 2019), (Patil et al., n.d.).

12. Conclusion

Central Serous Retinopathy: Case Report This paper on central serous retinopathy underscores the ability of Ayurveda to treat not only ocular disturbances but also the systemic disturbances that cause them. With these treatments, Gokshuradi Guggulu, Punarnavashtaka Kwatha, Brahmi Vati, and Avipattikar Churna have markedly improved visual acuity and decreased macular thickness. As ancient Ayurveda envisioned, these drugs respond to both inflammation and stress, culminating in distinct improvements without any allopathic interventions. While promising, further research would be necessary to validate the information obtained for treating C.S.R. and other retinal conditions via Ayurveda. By reaching a balance between body and mind under Ayurveda, this medical approach is a unique and effective tool for disease management. More studies would be highly beneficial in adding strength to the role of Ayurveda in modern medicine in terms of treating conditions such as C.S.R.

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Ethical Consideration

This case report was conducted strictly by the ethical principles stipulated by the Declaration of Helsinki. The patient was approached for written informed consent, which informed her about the process of publication and confidentiality. The Ayurvedic treatment protocol followed standard guidelines and was carried out under the strict guidance of registered Ayurvedic practitioners.

Conflict of Interest

The authors declare no conflicts of interest.

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