

# Intravitreal Bevacizumab as Rescue Therapy in Persistent Central Serous Chorioretinopathy: A Case Report

Indranil Saha

[indranil1124saha@yahoo.co.in](mailto:indranil1124saha@yahoo.co.in)

Regional Institute of Ophthalmology, Eye Hospital Sitapur, INDIA

Rahul Verma

Regional Institute of Ophthalmology, Eye Hospital Sitapur, INDIA

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## Case Report

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# Abstract

## Background

Central serous chorioretinopathy (CSCR) is a pachychoroid spectrum disorder characterized by serous neurosensory retinal detachment secondary to retinal pigment epithelium dysfunction and choroidal hyperpermeability. Although many cases resolve spontaneously, persistent disease may result in chronic subretinal fluid accumulation and visual morbidity. The role of intravitreal anti-vascular endothelial growth factor (anti-VEGF) therapy in persistent CSCR remains controversial.

## Case presentation:

A 35-year-old woman presented with metamorphopsia and diminution of vision in the left eye. Best-corrected visual acuity was 20/20. Clinical examination and optical coherence tomography (OCT) confirmed central serous chorioretinopathy with persistent neurosensory retinal detachment. Despite 3 months of medical therapy, including oral eplerenone, acetazolamide, topical dorzolamide, and nepafenac, subretinal fluid persisted. Fundus fluorescein angiography demonstrated a focal leakage point located inferotemporal to the fovea, precluding conventional focal laser photocoagulation because of the risk of central scotoma. The patient underwent a single intravitreal bevacizumab injection (1.25 mg/0.05 mL).

## Results

One week after treatment, the patient reported subjective improvement in metamorphopsia with a marked reduction in subretinal fluid on clinical examination. At 1 month, OCT demonstrated complete resolution of subretinal fluid with reattachment of the neurosensory retina. Best-corrected visual acuity remained stable at 20/20, and no treatment-related adverse events were observed.

## Conclusion

This case demonstrates complete anatomical resolution of persistent CSCR following a single intravitreal bevacizumab injection after failure of prolonged medical therapy. Intravitreal bevacizumab may be considered a potential rescue treatment in selected cases of persistent CSCR when conventional laser therapy or photodynamic therapy is unsuitable or unavailable. Further prospective studies are required to clarify its role in the management of persistent CSCR.

## Key message

Persistent central serous chorioretinopathy refractory to prolonged medical therapy demonstrated complete anatomical resolution following a single intravitreal bevacizumab injection when laser

treatment was not feasible because of foveal proximity of the leakage point.

## Introduction

Central serous chorioretinopathy (CSCR) is a pachychoroid spectrum disorder characterized by serous detachment of the neurosensory retina secondary to retinal pigment epithelium (RPE) dysfunction and choroidal hyperpermeability. Increased choroidal vascular permeability and impaired RPE barrier function lead to accumulation of subretinal fluid and visual symptoms including blurred vision, metamorphopsia, micropsia, and reduced contrast sensitivity.<sup>1–4</sup>

Although most cases of acute CSCR resolve spontaneously, persistent or chronic disease may result in irreversible photoreceptor damage, RPE alterations, and permanent visual impairment.<sup>5</sup> Several treatment modalities have been proposed for persistent CSCR, including mineralocorticoid receptor antagonists, focal laser photocoagulation, subthreshold micropulse laser therapy, photodynamic therapy (PDT), and intravitreal anti-vascular endothelial growth factor (anti-VEGF) agents.<sup>5–8</sup>

The role of anti-VEGF therapy in CSCR remains controversial. While anti-VEGF agents are primarily indicated in cases associated with secondary choroidal neovascularization, several studies have reported favorable anatomical outcomes in selected patients with persistent or chronic CSCR.<sup>6–8</sup> We report a case of persistent CSCR refractory to prolonged medical therapy that demonstrated complete anatomical resolution following a single intravitreal bevacizumab injection.

## Case Report

A 35-year-old woman presented to the vitreoretinal clinic with complaints of metamorphopsia and diminution of vision in her left eye for approximately 3 months. She had no history of systemic hypertension, corticosteroid use, pregnancy, psychiatric illness, or other significant systemic comorbidities.

At presentation, best-corrected visual acuity (BCVA) was 20/20 in the left eye and 20/20 in the right eye. Anterior segment examination was unremarkable in both eyes. Fundus examination of the left eye revealed a fluid reflex involving the macular region. Optical coherence tomography (OCT) demonstrated neurosensory retinal detachment with subretinal fluid consistent with CSCR (Fig. 1).

The patient was managed conservatively with oral eplerenone 50 mg twice daily, oral acetazolamide 250 mg twice daily, topical dorzolamide three times daily, and topical nepafenac 0.3% four times daily.

At the 2-month follow-up visit, BCVA remained stable at 20/20; however, clinical examination continued to demonstrate persistent subretinal fluid. Medical treatment was continued. At 3 months, OCT showed persistent neurosensory detachment without significant anatomical improvement.

At 3 months after initial presentation, persistent subretinal fluid remained evident clinically and on OCT. Fundus fluorescein angiography demonstrated a focal leakage point located inferotemporal to the fovea

(Fig. 2). Because of the close proximity of the leakage point to the foveal center, focal laser photocoagulation was considered unsuitable due to the risk of permanent central scotoma. Photodynamic therapy was not available at our institution.

Following informed consent, the patient underwent intravitreal bevacizumab injection (1.25 mg/0.05 mL) in the affected eye under aseptic conditions.

One week after treatment, the patient reported subjective improvement in metamorphopsia, and clinical examination showed a marked reduction in subretinal fluid. At 1 month following injection, OCT demonstrated complete resolution of subretinal fluid with reattachment of the neurosensory retina (Fig. 3). BCVA remained 20/20, and no ocular or systemic adverse events were observed.

## Discussion

CSCR is characterized by choroidal hyperpermeability and dysfunction of the RPE, resulting in serous detachment of the neurosensory retina.<sup>1–5</sup> While spontaneous resolution is common in acute disease, persistent CSCR may lead to chronic visual symptoms and structural retinal damage.<sup>5</sup>

Current treatment strategies for persistent CSCR include focal laser photocoagulation, subthreshold laser therapy, photodynamic therapy, and pharmacological interventions. Among these options, PDT has demonstrated the strongest evidence for chronic CSCR; however, limited availability and cost may restrict its use in some settings.<sup>5</sup>

The role of anti-VEGF therapy in CSCR remains incompletely defined. Anti-VEGF agents are routinely used when CSCR is associated with secondary choroidal neovascularization.<sup>6</sup> Nevertheless, several studies have reported anatomical improvement following intravitreal bevacizumab in selected patients with chronic or persistent CSCR.<sup>7</sup> Anti-VEGF therapy may reduce choroidal vascular permeability and facilitate resorption of subretinal fluid, although the exact mechanism remains uncertain.<sup>8</sup>

In the present case, persistent subretinal fluid remained despite 6 months of medical therapy. Focal laser treatment was avoided because the leakage point was located close to the foveal center, and photodynamic therapy was unavailable. Following a single intravitreal bevacizumab injection, complete anatomical resolution of subretinal fluid was observed within 1 month. Although a direct causal relationship cannot be conclusively established in a single case, the temporal association suggests that bevacizumab may have contributed to fluid resolution.

This report highlights a potential role for intravitreal bevacizumab as a rescue treatment in selected patients with persistent CSCR when standard treatment options are unsuitable or unavailable. However, larger prospective studies are required to better define its efficacy and indications.

## Conclusion

Persistent CSCR remains a therapeutic challenge when spontaneous resolution does not occur and conventional treatment options are unsuitable. In this case, complete anatomical resolution of persistent subretinal fluid was achieved following a single intravitreal bevacizumab injection after prolonged medical therapy. Intravitreal bevacizumab may represent a useful rescue treatment in selected cases of persistent CSCR, particularly when focal laser photocoagulation or photodynamic therapy cannot be performed. Further controlled studies are needed to establish its role in the management of persistent CSCR.

## Declarations

### Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying clinical images.

### Ethics Declaration: Not applicable

### Declaration of Conflicting Interests

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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## Author Contribution

Dr Indranil Saha is the chief and corresponding author. He is also the treating surgeon of the case and has drafted and proofread the paper. Dr Rahul Verma is a post graduate of the chief author who has helped the chief author in referencing and other required inputs. The paper highlights an alternative successful treatment for a common problem, which shall be very helpful to such patients. Both authors have put in a lot of hardwork in preparing this paper and sincerely wish to see our diligence accepted and published in this most esteemed journal.

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## Figures

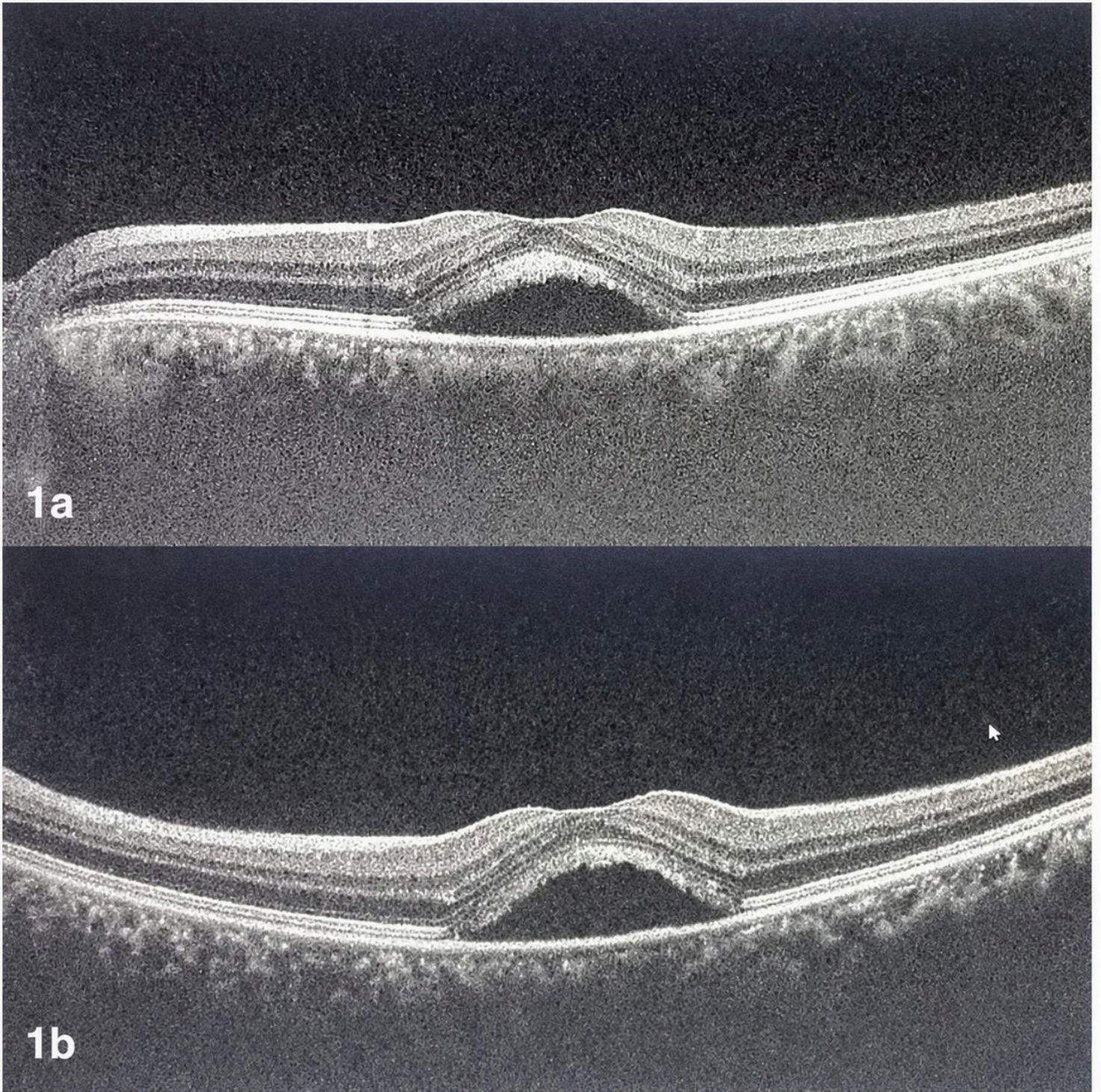


**Figure 1**

(a) Subretinal fluid at presentation (b) Persistent subretinal fluid at 3 months

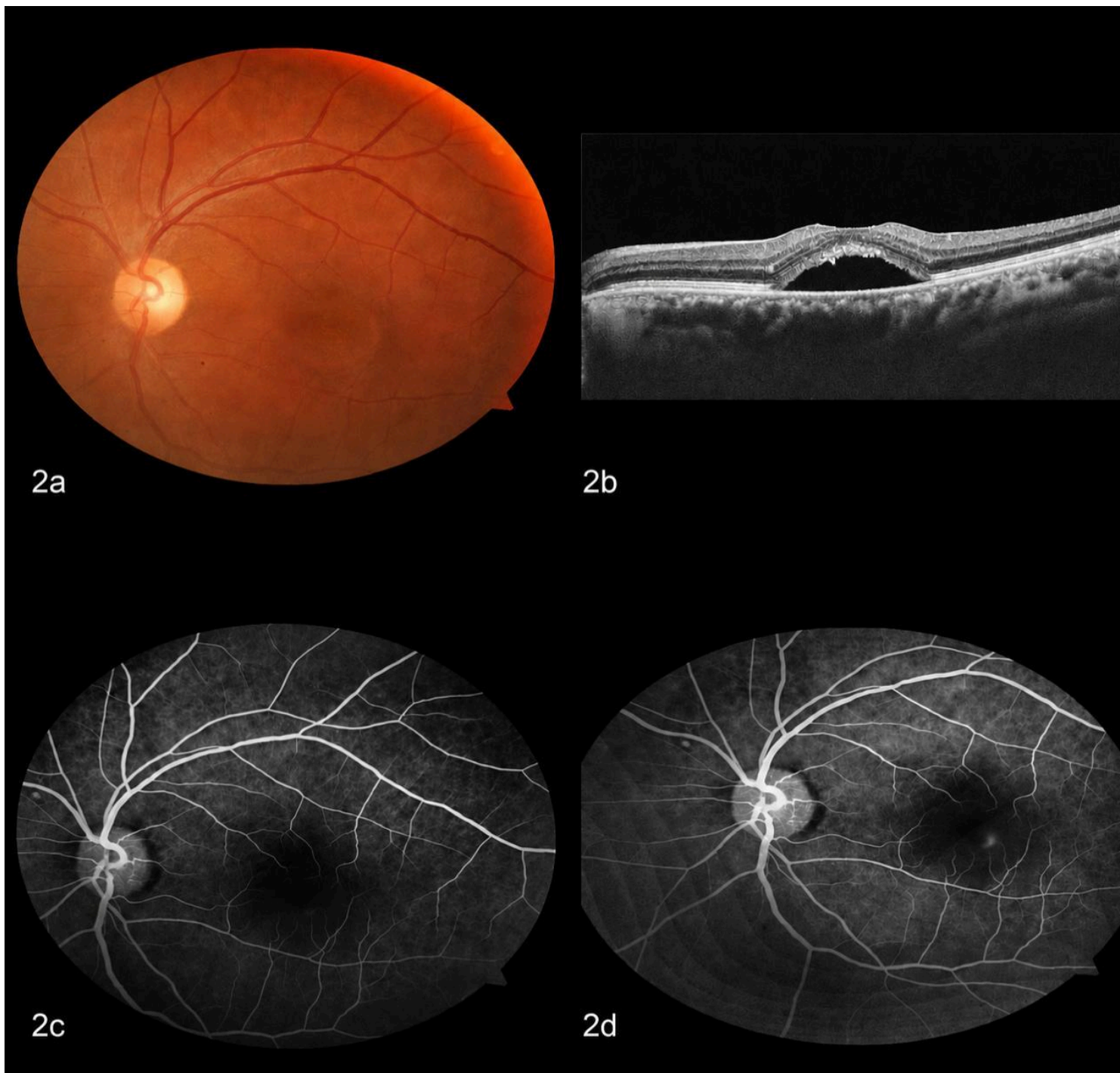


**Figure 2**

At 3 months (a) Fundus photo showing well circumscribed fluid reflex at the macula (b) OCT showing persistent subretinal fluid (c)&(d) Fundus fluorescein angiography, early and late frames showing leak proximity to fovea



**Figure 3**

1 month post intravitreal Bevacizumab injection showing a near normal OCT