

Central Serous Chorioretinopathy Reoccurrence in Pregnancy: Case Report and Literature Review

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Abstract

Central serous chorioretinopathy is a retinal disorder where areas of leakage through an altered retinal pigment epithelium cause localised serous detachment of the macula. It typically presents with blurred vision, metamorphopsia, and micropsia. While commonly affecting young men, CSCR cases have been reported in pregnancy typically within the third trimester with the incidence reported as 0.008% per year. Here we describe the case of reoccurrence of unilateral CSCR in a 32-year-old multiparous woman. She presented at 13 weeks of gestation with decreased vision in the left eye. Optical coherence tomography (OCT) revealed subfoveal neurosensory detachment with hyperreflective fibrin deposits. This was managed conservatively with lifestyle modifications and close monitoring. Vision and OCT findings gradually improved, and by 34 weeks of pregnancy, the CSCR had fully resolved. The patient successfully delivered vaginally without recurrence. Notably, she had experienced a prior episode of CSCR four years earlier, unrelated to pregnancy, which resolved spontaneously after 10 months. CSCR in pregnancy is a rare but important differential diagnosis for visual complaints in pregnancy. This case demonstrates that lifestyle modification and monitoring may lead to spontaneous pre-delivery resolution and that vaginal delivery does not necessarily worsen the condition.

Keywords: Central Serous Chorioretinopathy (CSCR), Optical Coherence Tomography (OCT), Pregnancy, Pregnancy-induced Central Serous Chorioretinopathy (p-CSCR), Recurrence, Vaginal Delivery.

INTRODUCTION

During pregnancy, hormonal, metabolic, and hemodynamic changes can affect the eye, ranging from mild refractive shifts and dry eye to more serious conditions such as worsening diabetic or hypertensive retinopathy and CSCR. CSCR is a disorder characterised by serous detachment of the neurosensory retina due to dysfunction of the retinal pigment epithelium (RPE).^[1] This manifests clinically with decreased visual acuity, sudden onset unilateral visual blurring, metamorphopsia, micropsia, occasional paracentral scotoma and mild dyschromatopsia. The majority of cases resolve spontaneously within 3-6 months, with recurrence occurring in 15–50% of patients.^[2]

CSCR mainly affects young men aged 20-45 years, with some association with type A personality traits – these include aggression, competitiveness and ambition.^[3] Other risk factors include psychological stress, corticosteroid

exposure, and depression.^[4] Pregnancy is a recognised risk factor, though rare, with an incidence of approximately 0.008% per year.^[5] Pregnancy-induced CSCR (p-CSCR) typically develops in the third trimester, where it usually resolves following delivery.^[6] The cause of pregnancy induced CSCR is unknown, and the proposed mechanism involves elevated endogenous cortisol levels in pregnancy, leading to increased choroidal vascular permeability.^[7] Table 1 summarises the differences between idiopathic CSCR and p-CSCR.

Here we present a case of CSCR reoccurrence in pregnancy, which resolved before delivery with conservative measures.

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Table 1 : Differences Between Pregnancy-Associated and Idiopathic CSCR. (full page width).

Feature	Pregnancy-Associated CSCR	Idiopathic CSCR
Demographics	Typically affects women in the third trimester of pregnancy	Predominantly affects men aged 20–50 years
Triggers	Hormonal changes, elevated cortisol levels, and haemodynamic shifts during pregnancy	Psychological stress, corticosteroid use, or Type A personality traits
Choroidal Thickness	Often increased (pachychoroid)	Variable, but frequently thickened
Fibrin Deposition	Common; visible as hyperreflective material on OCT	Rare
Course	Usually resolves spontaneously postpartum	May resolve spontaneously or become chronic
Management	Conservative during pregnancy with close OCT monitoring	May require photodynamic therapy, focal laser, or medical treatment if persistent

CASE REPORT

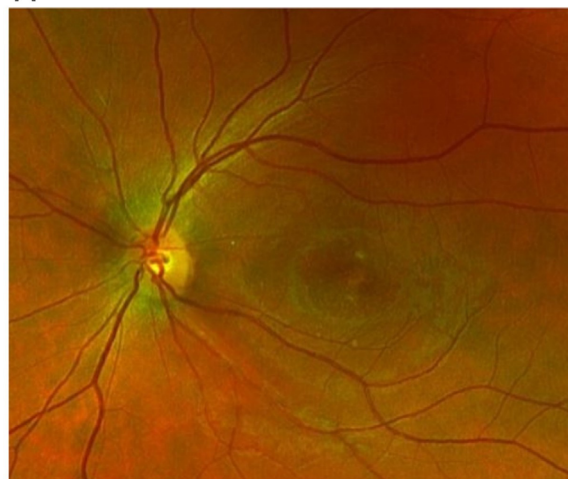
A 32-year-old multiparous woman presented at 13 weeks gestation with a one-week history of blurred vision in her left eye. Her current medications included cyclizine and ondansetron for hyperemesis gravidarum, and sertraline for anxiety. Her obstetric history was significant for gestational hypertension, induction of labour due to intrauterine growth restriction, and miscarriage. She was a non-smoker with no history of corticosteroid use. On examination, best-corrected visual acuity (BCVA) was 6/5 in the right eye and 6/30 in the left. The anterior segment examination was unremarkable, and intraocular

pressures measured 17 mmHg bilaterally using Goldmann applanation tonometry.

Dilated fundus examination of the left eye revealed loss of the foveal reflex (Figure 1). Optical coherence tomography (OCT) (Spectralis, Heidelberg Engineering, Germany) demonstrated a dome-shaped neurosensory detachment with subretinal fluid, hyperreflective dots, and fibrin deposition (Figure 2). Central macular thickness (CMT) was 251 μm in the right eye and 429 μm in the left (Table 2). Lifestyle modifications were advised, including stress reduction and maintaining adequate sleep.



A



B

Figure 1: OPTOS Colour Fundus Images of the Left Eye at 13 Weeks with Loss of Foveal Reflex (A) and at 34 Weeks of Gestation with Restored Foveal Reflex (B). (Saved as CSCR Figure 1 – column width).

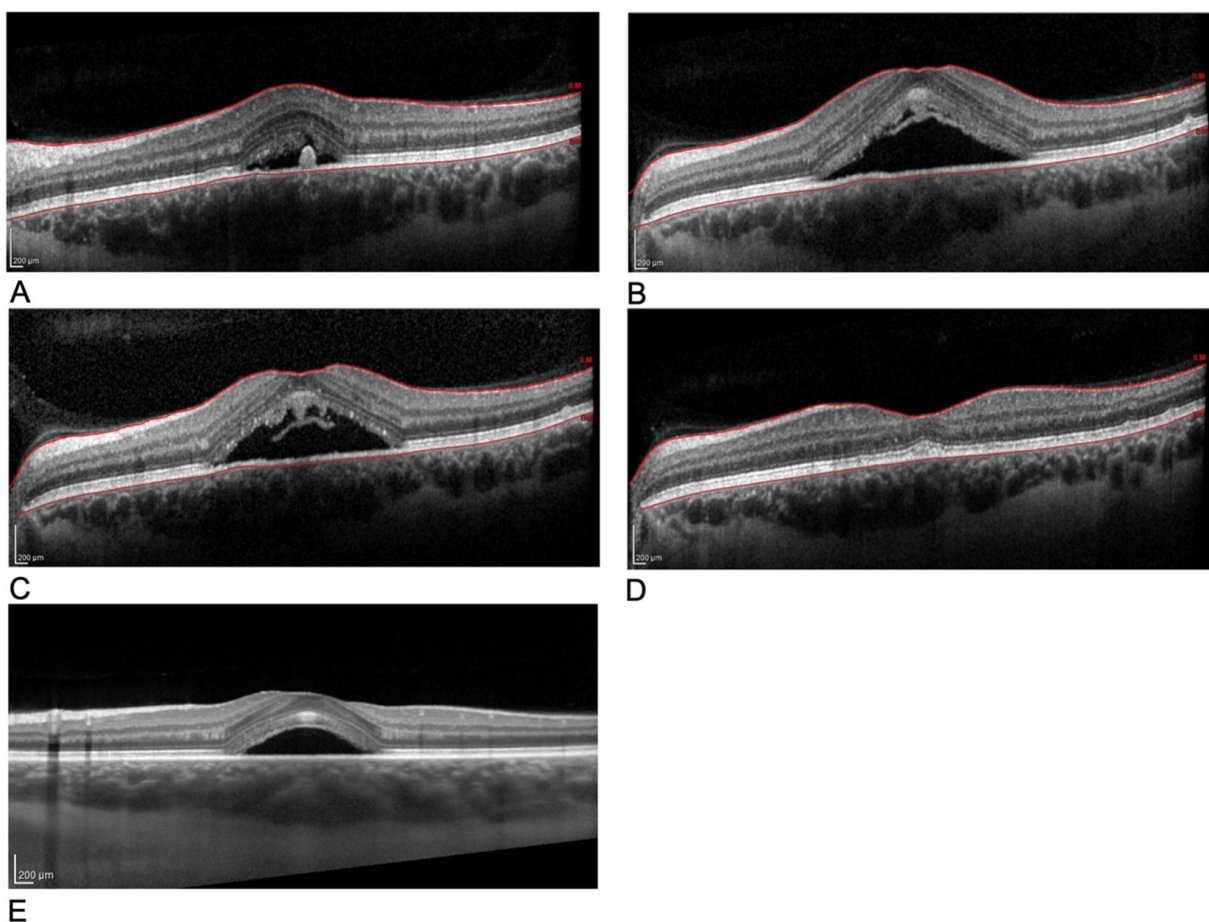


Figure 2: OCT Scans Demonstrate the Evolution of Pregnancy-associated Central Serous Chorioretinopathy: Gestational Week 13 – Subretinal Fluid with Fibrin (A), Week 17 – Persistent Fluid and Fibrin (B), Week 23 – Partial Resolution (C), Week 34 – Complete Resolution (D). OCT from the Previous CSCR Episode (4 years earlier) Showing Fluid without Fibrin (E). (Saved as CSCR Figure 2 – full page width).

At a four-week review (17 weeks gestation), visual acuity in the left eye had improved to 6/15; however, OCT revealed an increase in CMT to 539 µm, with persistent subretinal fluid and increased reflectivity consistent with ongoing fibrin presence (Figure 2). By 23 weeks gestation,

visual acuity in the left eye measured 6/24, while OCT demonstrated improvement in CMT to 426 µm, indicating a resolution phase with decreased subretinal fluid and fading fibrin (Table 2).

Table 2: Best Corrected Visual Acuity (BCVA) and Central Macular Thickness (CMT) of the Left Eye During Pregnancy. %: Percentage; CMT: Central Macular Thickness. (full page width).

Time Point	Visual Acuity (Snellen)	Change (%) VA from Day 0	CMT (µm)	Change (%) CMT from Day 0
Day 0 (13-weeks gestation)	6/30	0.0	429	0
Day 29 (17-weeks gestation)	6/15	+25.6	539	+25.2
Day 71 (23-weeks gestation)	6/24	0.0	426	0.0
Day 140 (34-weeks gestation)	6/9.5	+52.5	213	-52.5

At 34 weeks gestation - three and a half months after the initial diagnosis - the CSCR had completely resolved. OCT imaging showed a CMT of 213 µm in the left eye, and visual acuity had improved to 6/9 (Table 2, Figure 2). Throughout this period, the right eye remained unaffected with stable visual acuity of 6/6 and no clinical evidence of CSCR.

Interestingly, the patient also had a history of CSCR in the same eye four years earlier, unrelated to pregnancy, which resolved spontaneously over a 10-month period,

with final BCVA of 6/6 (Figure 2).

Pregnancy-associated CSCR is thought to be driven by hormonal fluctuations, particularly elevated cortisol and progesterone levels, that increase choroidal vascular permeability. This may result in more pronounced subretinal fluid accumulation and fibrin deposition. Fibrin usually appears as a hyperreflective substance within the subretinal fluid or along the outer layers of the retina. This can indicate a more severe or prolonged disease process. Considering the patient's gestational age along with these

specific imaging characteristics, pregnancy-induced central serous chorioretinopathy (p-CSCR) was identified as the most probable diagnosis. Hypertension was considered an unlikely cause of the patient's presentation, as clinic records report a blood pressure of 120/70 mmHg, which is within the normal range.

DISCUSSION

P-CSCR is a rare yet specific form of idiopathic CSCR. Research from case-control studies indicates that pregnancy can elevate the risk of developing this condition by over seven times, particularly during the second and third trimesters. The pathophysiology has been hypothesised to involve: elevated cortisol leading to increased choroidal vascular permeability; hormonal fluctuations (progesterone, estrogen) affecting RPE function; and choroidal thickening/episcleral venous congestion increasing hydrostatic pressure.^[8,9]

A distinguishing feature of P-CSCR is subretinal fibrin deposition, visible on OCT as hyperreflective material. Fibrin is seen in up to 90% of p-CSCR cases compared to only 20% of idiopathic cases (Table 2). Elevated levels of cortisol, progesterone, and estrogen during pregnancy increase choroidal vascular permeability. This leads to leakage of plasma components, including fibrinogen, into the subretinal space. The retinal pigment epithelium (RPE), which normally acts as a blood-retinal barrier, becomes compromised due to hormonal and hemodynamic changes. This allows fibrinogen to extravasate and polymerize into fibrin, forming hyperreflective deposits seen on OCT. CSCR is not typically considered an inflammatory condition, however, during pregnancy, there can be slight inflammatory responses that may add to the deposition of fibrin.^[9] While the presence of fibrin suggests more significant leakage, it usually resolves on its own, as seen in this instance. If fibrin persists, it has the potential to lead to subretinal scarring, which could result in permanent vision loss.

There are no obstetric guidelines for managing CSCR during pregnancy, which created a dilemma regarding planning the optimal mode of delivery for our patient. The patient expressed a preference for a vaginal delivery, but concerns arose that this could worsen the CSCR and cause retinal detachment. When consulting the literature, some studies suggest that increased maternal cortisol levels during vaginal delivery could potentially worsen the CSCR.^[8] On the other hand, a case reported by Gawęcki denoted that CSCR developed following a caesarean section.^[10] There is no clear obstetric guidance to plan for a mode of delivery for patients with pregnancy related CSCR, luckily in this patient the CSCR resolved pre-delivery at 34 weeks, and the patient proceeded with a successful vaginal birth.

A review of the literature suggests risk management via lifestyle interventions or the use of micropulse laser therapy. In this patient's case, we discussed treatment options and decided against active interventions and instead chose to monitor her closely as the typical course

for CSCR is spontaneous resolution following birth. Interestingly, in this case, the patient's CSCR resolved pre-delivery, whereas in most reported cases of CSCR the disease resolves post-delivery. This could be due to patient factors, such as reducing stress and gaining adequate sleep, which may have lowered cortisol levels leading to CSCR resolution.

There has been a debate surrounding the use of laser in the treatment of p-CSCR. With Ochinciuc *et al.*^[2], suggesting the use of micropulse laser as an effective. In Ochinciuc's cases, the CSCR resolved three months after delivery, whereas our patient experienced remission before delivery. This suggests that micropulse laser does not improve outcome compared to lifestyle changes and careful monitoring and lifestyle modifications may suffice for p-CSCR. Although micropulse laser has been shown to be effective in treating CSCR, there is little evidence that this is more effective than no intervention. Additionally, other studies report spontaneous resolution of CSCR near to the end of pregnancy or within the first few months following delivery following lifestyle changes.^[8] In our case, the patient has spontaneous resolution of CSCR 34 weeks pre-delivery following lifestyle modification, thus careful monitoring and lifestyle modifications may suffice for p-CSCR.

Arterial hypertension in pregnancy is another important factor present in our case, due to the patient's previous history of gestational hypertension. Pre-eclampsia can lead to some serious ocular complications, though less frequently, such as hypertensive retinopathy and serous retinal detachment. Vaginal delivery is very often being questioned about because of its risk for retinal detachment. However, according to recent studies, vaginal delivery does not increase this risk, and cesarean section is not routinely required for ophthalmologic indications.^[11]

CONCLUSION

Pregnancy-associated central serous chorioretinopathy (CSCR) is a rare condition, but it generally resolves on its own. With careful monitoring and lifestyle adjustments optimal management can often be achieved. This case highlights that spontaneous resolution can occur before delivery and that vaginal birth can be safe in selected patients.

Multidisciplinary collaboration between ophthalmologists and obstetricians is crucial to provide individualized care. Engaging in shared decision-making with the patient helps in assessing the potential risks and benefits effectively, ensuring that the chosen management plan and mode of delivery support both the mother's and the baby's well-being.

Patient Consent

Written informed consent was obtained. No identifiable information is included. No conflict of interest.

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Conflict of Interest

All authors have no actual or potential conflicts of interest to declare

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