JOURNAL OF
CONTEMPORARY MEDICINE

DOI:10.16899/jcm.1861618
J Contemp Med 2026;16(2):122-125

Case Report / Olgu sunumu

Serous Retinal Detachment in HELLP Syndrome: A Case Series

HELLP Sendromunda Seröz Retina Dekolmanı: Olgu Serisi

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Abstract

Serous retinal detachment (SRD) is a rare but potentially vision-threatening ocular complication of hypertensive disorders of pregnancy, particularly severe preeclampsia and HELLP syndrome. It typically presents bilaterally and is believed to result from choroidal ischemia and endothelial dysfunction secondary to systemic vasospasm. Despite its dramatic clinical presentation, SRD is generally reversible with timely and appropriate management. We present a case series of four patients with SRD associated with HELLP syndrome to illustrate the clinical spectrum, imaging findings, management, and visual outcomes of this rare complication. All patients were managed conservatively after delivery with strict blood pressure control, resulting in complete anatomical resolution and full visual recovery in every case. These cases underscore the favorable prognosis of HELLP-related SRD when promptly recognized and appropriately managed, and highlight the importance of multidisciplinary collaboration.

Keywords: HELLP syndrome, preeclampsia, pregnancy, serous retinal detachment

Öz

Seröz retina dekolmanı (SRD), gebeliğin hipertansif hastalıklarının nadir ancak potansiyel olarak görmeyi tehdit eden bir oküler komplikasyonudur ve özellikle ağır preeklampsi ile HELLP sendromu ile ilişkilidir. Genellikle bilateral olarak ortaya çıkar ve sistemik vazospazma bağlı gelişen koroidal iskemi ve endotel disfonksiyonu sonucu oluştuğu düşünülmektedir. Klinik prezentasyonu sıklıkla dramatik olmasına rağmen, zamanında ve uygun şekilde yönetildiğinde SRD genellikle geri dönüşümlüdür.7 u çalışmada, HELLP sendromu ile ilişkili SRD gelişen dört hastadan oluşan bir olgu serisi sunularak bu nadir komplikasyonun klinik spektrumu, multimodal görüntüleme bulguları, tedavi yaklaşımları ve görsel sonuçları ortaya konulmuştur. Tüm hastalar doğum sonrası dönemde konservatif olarak, sıkı kan basıncı kontrolü ile izlenmiştir. Tüm olgularda SRD'nin tam anatomik rezolüsyonu ve tam görsel iyileşme sağlanmıştır. Bu olgular, HELLP sendromuna bağlı SRD'nin erken tanı ve uygun tedavi ile iyi prognoza sahip olduğunu göstermekte olup, erken farkındalık ve multidisipliner iş birliğinin önemini vurgulamaktadır.

Anahtar Kelimeler: HELLP sendromu, preeklampsi, gebelik, seröz retina dekolmanı

INTRODUCTION

Preeclampsia is a pregnancy-specific hypertensive disorder that may progress to severe complications such as eclampsia and HELLP syndrome.[1] These conditions are characterized by systemic vasospasm, endothelial dysfunction, and multi-organ involvement.

Ocular involvement in hypertensive disorders of pregnancy is uncommon and most frequently manifests as retinal arteriolar narrowing, hemorrhages, and retinal edema.[2] SRD, resulting from the accumulation of subretinal fluid between neurosensory retina and retinal pigment epithelium, is a rare ocular complication affecting less than 1% of preeclamptic women and somewhat more frequently in those with HELLP syndrome.[3,4] Angiographic and optical coherence tomography (OCT) studies suggest that choroidal ischemia secondary to severe vasospasm plays a central role in the pathogenesis of SRD.[4,5]

Despite its visually alarming presentation, SRD associated with preeclampsia and HELLP syndrome generally carries a favorable prognosis, with spontaneous resolution following delivery and appropriate medical management.[4,6] In this report, we present a case series of SRD associated with HELLP syndrome to highlight its clinical course, imaging findings, management strategies, and outcomes.

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Received *(Geliş Tarihi)*: 12.01.2026 **Accepted *(Kabul Tarihi)*:** 18.02.2026

This case series was conducted at University of Health Sciences, Bursa Yuksek Ihtisas Research and Training Hospital between 2022 and 2025. Cases were consecutively identified among patients presenting with HELLP syndrome during the study period. HELLP syndrome was diagnosed based on standard laboratory criteria: hemolysis, elevated liver enzymes, and low platelet count. SRD was confirmed through clinical ophthalmologic examination and OCT. Fluorescein angiography or indocyanine green angiography was not routinely performed due to the postpartum status of patients and rapid clinical improvement with conservative management. This design ensures inclusion of all eligible consecutive cases and minimizes selection bias.

CASE REPORTS

Case 1

A 39-year-old primigravid woman at 25 weeks' gestation with no notable medical history was admitted with severe headache, visual blurring, and hypertension. Laboratory evaluation revealed elevated liver enzymes, hemolysis, and thrombocytopenia confirming HELLP syndrome. Emergency cesarean section was performed. The patient developed decreased visual acuity on the second postpartum day. Ophthalmologic examination revealed SRD in left eye. Conservative management, including strict blood pressure control and close ophthalmologic follow-up, was initiated. SRD regressed spontaneously postpartum, with complete anatomical and visual recovery by the third week.

Case 2

A 28-year-old gravida 2 para 1 woman at 34 weeks' gestation with no notable medical history presented in a postictal state following eclamptic seizure. An emergency cesarean section was performed. The patient developed blurred vision six hours postpartum. Ophthalmologic examination revealed bilateral SRD with a visual acuity of 1/10 in both eyes, confirmed by OCT. With conservative management including strict blood pressure control, visual acuity gradually improved, and SRD regressed spontaneously. At the one-month follow-up, complete anatomical resolution was observed with full recovery of visual acuity to 10/10 bilaterally.

Case 3

A 22-year-old primigravid woman at 34 weeks' gestation with no notable medical history presented with headache, bilateral blurred vision, and hypertension. Laboratory evaluation revealed findings consistent with HELLP syndrome, and an emergency cesarean section was performed. Postpartum ophthalmologic examination demonstrated SRD in the left eye accompanied by retinal pigment epithelial changes. Conservative management with strict blood pressure control was initiated. Progressive regression of subretinal fluid was observed during follow-up, and visual acuity improved steadily, with complete recovery achieved in left eyes by one month postpartum.

Case 4

A 39-year-old gravida 3 para 2 woman at 34 weeks' gestation with no notable medical history underwent an emergency cesarean section at an external center due to placental abruption. In the postoperative period, she developed HELLP syndrome and blurred vision. Following transfer to our clinic, ophthalmologic evaluation revealed bilateral SRD. Conservative management with magnesium sulfate and antihypertensive therapy resulted in rapid improvement of visual symptoms and spontaneous regression of SRD. The patient was discharged on postoperative day 4. At the two-month follow-up, visual acuity had completely recovered with full anatomical resolution.

Table 1. Summary of Clinical and Ocular Findings in Four Patients with Serous Retina Detachment

Case	Age (years)	GA (weeks)	BP (mmHg)	Platelets ($\times 10^9$/L)	AST/ALT (U/L)	LDH (U/L)	Laterality	Initial VA (R/L)	OCT Findings	Fundus Findings	Management	Time to SRD Resolution	Final VA (R/L)	Follow-up (weeks)
1	39	25	160/110	95	120/130	450	Left	20/40 / –	SRD L eye	SRD L macula, no hemorrhage	BP control	3	20/20 / –	4
2	28	34	170/115	80	140/150	500	Bilateral	1/10 / 1/10	SRD both eyes	SRD both maculae, mild hemorrhages	BP control	4	20/20 / 20/20	4
3	22	34	165/110	90	110/115	470	Left	20/60 / –	SRD L eye	SRD L macula, small RPE changes	BP control	4	20/20 / –	4
4	39	34	160/105	85	125/135	480	Bilateral	20/50 / 20/60	SRD both eyes	SRD both maculae, minor hemorrhages	BP + $MgSO_4$	8	20/20 / 20/20	8

GA=gestational age; BP= blood pressure; R/L=right,left; SRD=serous retinal detachment; VA=visual acuity; OCT=optical coherence tomography

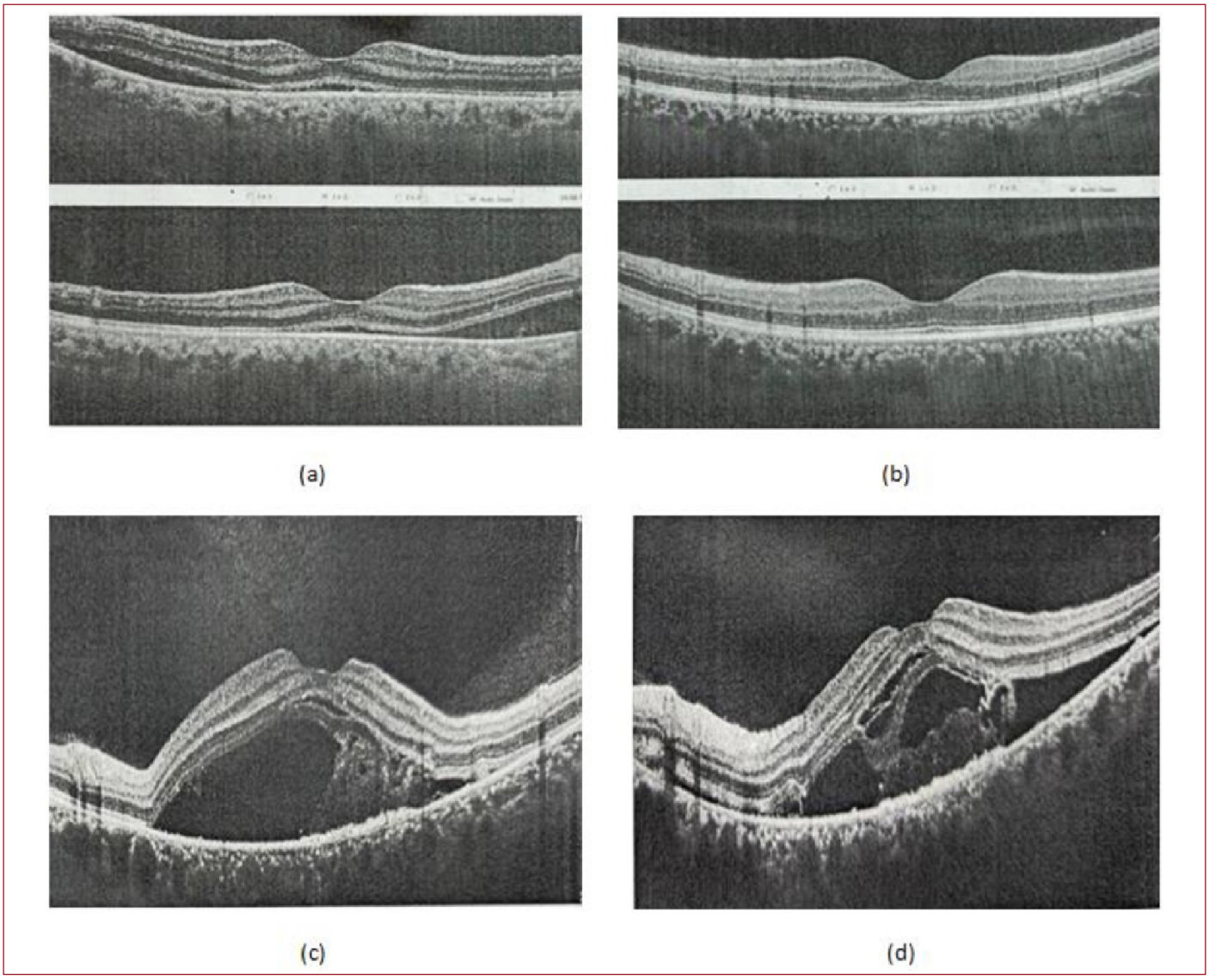

Figure. Representative optical coherence tomography images of Cases 2 and 3 demonstrating serous retinal detachment in the acute phase and complete resolution during follow-up. **(a)** Case 2 at postoperatif 1st day presentation; **(b)** Case 2 at postpartum 1st month follow-up **(c)** Case 3 at postoperatif 1st day presentation; **(d)** Case 3 at postpartum 1st month follow-up

DISCUSSION

Serous retinal detachment is a rare ocular complication of hypertensive disorders of pregnancy, particularly in severe preeclampsia and HELLP syndrome.[6,7] Although visual symptoms may be sudden and alarming, available evidence indicates that SRD associated with these conditions typically follows reversible clinical course when the underlying systemic disease is adequately managed.

In the literature, the incidence of SRD in preeclampsia has been reported to be less than 1%, with higher frequency observed in HELLP syndrome.[4,7] This increased frequency is thought to reflect more pronounced microangiopathy and vascular instability. Benlghazi et al. described bilateral SRD in a patient with preeclampsia, emphasizing spontaneous resolution after delivery without the need for ophthalmologic intervention.[3]

Similarly, Vigil-De Gracia et al. reported bilateral SRD as a reversible complication of HELLP syndrome, highlighting favorable visual outcomes following conservative management.[7] Most published cases describe bilateral involvement, often occurring in the late third trimester or early postpartum period. In a report by Kaur et al., SRD associated with HELLP syndrome was accompanied by peripapillary choroidopathy, further supporting the role of choroidal circulation impairment in the disease process.[8] In our case series, two patients presented with bilateral SRD, while the remaining two exhibited unilateral involvement. Despite this variability in laterality, all cases occurred in the setting of HELLP syndrome, reinforcing the association between disease severity and ocular involvement.

The underlying pathophysiology of SRD in hypertensive disorders of pregnancy is not fully elucidated. However, several authors have suggested that systemic vasospasm and endothelial dysfunction lead to choroidal ischemia, resulting in breakdown of the outer blood–retinal barrier.[5,9] In their systematic review, Iqra et al. demonstrated delayed choroidal filling and accumulation of subretinal fluid without retinal breaks on OCT and fluorescein angiography, supporting this mechanism.[6] Similar imaging characteristics were observed in our cases, further aligning with the proposed ischemic choroidopathy hypothesis.

Despite its dramatic presentation, SRD associated with HELLP syndrome generally carries a favorable prognosis. Previous studies documented complete anatomical and functional recovery following delivery and strict blood pressure control.[3,4,7] In line with these findings, all patients in our series were managed conservatively postpartum, and complete resolution of subretinal fluid with full visual recovery was achieved in every case. Differential diagnosis should include central serous chorioretinopathy, posterior reversible encephalopathy syndrome, and other causes of exudative retinal detachment, particularly in pregnant or postpartum patients presenting with acute visual disturbances.[2,6]

CONCLUSION

As emphasized by previous authors, early ophthalmologic evaluation and close collaboration between obstetricians and ophthalmologists are essential to ensure accurate diagnosis. Although limited by the small number of cases, both the present series and previously published reports underscore the importance of recognizing SRD as a potentially reversible ocular manifestation of HELLP syndrome. Increased awareness of this complication may facilitate timely diagnosis, appropriate counseling, and optimal multidisciplinary management, ultimately leading to excellent visual outcomes.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.
Referee Evaluation Process: Externally peer-reviewed.
Conflict of Interest Statement: The authors have no conflicts of interest to declare.
Financial Disclosure: The authors declared that this study has received no financial support.
Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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