



Case Report

Bilateral Retinal Detachment in a Pre-eclamptic Patient

Nandan Kushum Das¹, Al-Amin², Sharif Md Sanjid Zaman³, Anupoma Dhar⁴, Mushahid Thakur⁵, Paritush Kanti Talukder⁶

¹Associate Professor, Department of Ophthalmology, Jalalabad Ragib-Rabeya Medical College, Sylhet.

^{2,3}IMO, Department of Ophthalmology, Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet.

⁴Resident Surgeon, Department of Ophthalmology, Jalalabad Ragib-Rabeya Medical College Hospital, Sylhet.

⁵Professor, Department of Ophthalmology, Jalalabad Ragib-Rabeya Medical College, Sylhet.

⁶Assistant Professor, Department of Ophthalmology, Sylhet MAG Osmani Medical College, Sylhet.

ABSTRACT

Preeclampsia is a leading cause of maternal and foetal mortality worldwide. Retinal detachment is an unusual cause of visual loss in pregnancy. The retinal detachment in preeclampsia is usually bilateral and serous. The pathogenesis of retinal detachment in preeclampsia is related to choroidal ischemia secondary to an intense arteriolar vasospasm. The majority of patients generally have complete recovery of vision with clinical management and surgery is unnecessary. This was a case report of a 28 years old multigravida with preeclampsia who developed bilateral retinal detachment at term. She had progressive blurred vision, until she could see only shadows. With blood pressure control at postpartum, retinal detachment resolved spontaneously and vision was regained.

Keywords: Preeclampsia, Retinal detachment, Choroidal ischemia.

[Jalalabad Med J 2020; 17(1): 23-26]

INTRODUCTION

Preeclampsia is classified as a hypertensive disorder in pregnancy, which occurs in the absence of other causes of elevated blood pressure and in combination with generalized oedema, proteinuria or both¹. If symptoms and signs of preeclampsia are added with coma or convulsions, we speak of eclampsia. Preeclampsia is an obstetric disease of unknown cause that affects approximately 5% of pregnant women¹. Ocular complications may occur in 30-100% of preeclamptic patients¹. Rarely, serous retinal detachment (RD) can occur as a complication. Its pathogenesis is related to the choroidal ischemia secondary to an intense

arteriolar vasospasm. The prognosis is usually good with conservative management². We report this case of a preeclampsia-induced bilateral serous retinal detachment who recovered with medical management.

CASE REPORT

A 28 years old multigravida was hospitalized at term of pregnancy with the complaints of leg oedema, severe headache, nausea and vomiting with no history of arterial hypertension. On examination the blood pressure was found 200/110 mm of Hg and there was 3+ proteinuria. The laboratory examinations didn't show thrombocytopenia, liver enzymes elevation or haemolysis. The patient was diagnosed as preeclampsia. She went to cesarean section, with the delivery of an alive baby. The placenta was removed in its completeness. Four hours post partum, the patient reported dimness of vision in both eyes. She had progressive blurred vision, until she could see only

Address of Correspondence:

Dr. Nandan Kushum Das, Associate Professor, Department of Ophthalmology, Jalalabad Ragib-Rabeya Medical College, Sylhet, Mobile: +8801711040311, E-mail: drnandan75@gmail.com

shadows. Patient was examined first at the bedside with ophthalmoscopy, detailed assessment of visual acuity (VA) was not possible. Ophthalmological examination showed the occurrence of bilateral serous retinal detachment with no retinal haemorrhage in both eyes. Tearing wasn't found. Combined antihypertensive, diuretic therapy and steroid therapy was introduced (500 mg/day methyl dopa and 60 mg/day furosemide and oral methylprednisolone at a dose of 1 mg/kg body weight/day). A follow up examination was performed day after cesarean section. On examination, her VA was hand movement (Right eye) and counting finger close to the face (Left eye). There was no afferent pupillary defect. Anterior segment and intraocular pressure was normal. On follow-up examination after 5 days, her VA improved to 6/24 on right eye and 6/36 on left eye. Dilated fundus examination revealed intact papillae and bilateral serous retinal detachment distributed mainly in peripapillary area and posterior pole in both eyes (Figure-1a and Figure-1b). Ultrasonography B-scan showed high reflective membrane-like structure suggestive of retinal detachment (Figure-2a and Figure-2b). OCT (Optical coherence tomography) performed 7 days after delivery, demonstrated subretinal and intraretinal fluid in the both eyes (Figure-3). One week post partum, her VA improved to 6/18 on right eye and 6/24 on left eye. Dilated fundus examination disclosed persistent retinal detachment in both eyes. Follow up examination 6 weeks later, hypertension was well control and total resolution of bilateral serous retinal detachments, showed in figure 4 ((Figure-4a and Figure-4b). And her VA improved to 6/6 in right eye and 6/6 in left eye.

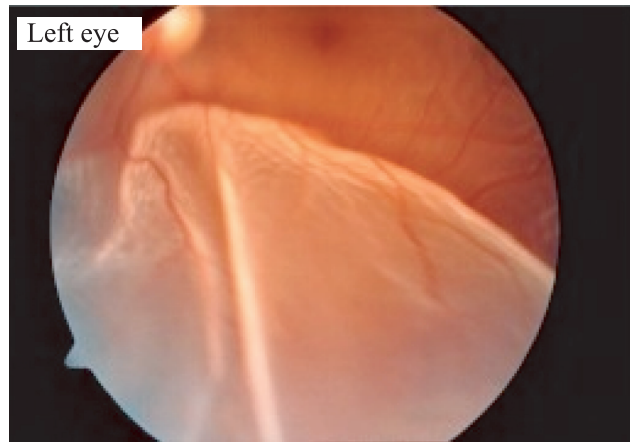


Figure-1b: Fundus examination showed intact papillae and bilateral serous retinal detachment in peripapillary area and posterior pole in left eye, only superior retina attached.

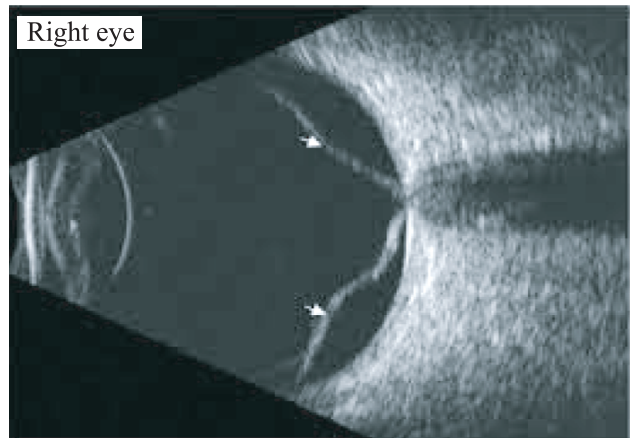


Figure-2a: Ultrasonography B-scan showed high reflective membrane of retinal detachment in right eye.

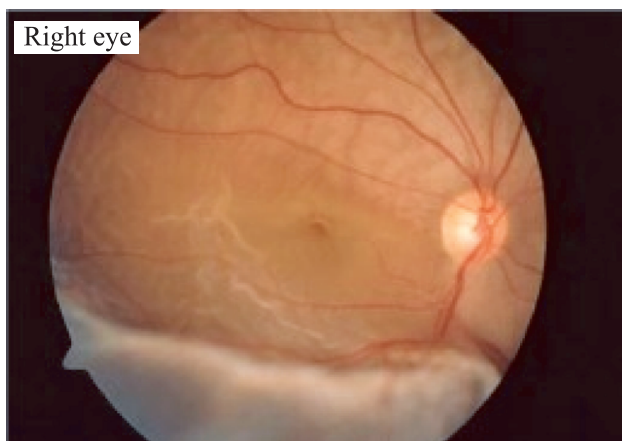


Figure-1a: Fundus examination showed intact papillae and bilateral serous retinal detachment in peripapillary area and posterior pole in right eye, only superior retina attached.



Figure-2b: Ultrasonography B-scan showed high reflective membrane of retinal detachment in left eye.

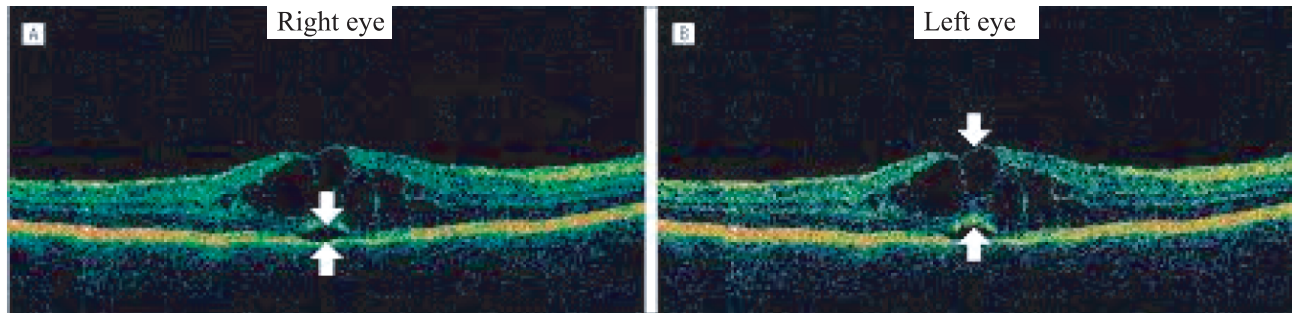


Figure-3a: OCT showed hyporeflective shadow in posterior pole of retina due to subretinal and intraretinal fluid collection in right and left eyes.



Figure-4a: Normal fundus of right eye after 6 weeks.

DISCUSSION

Preeclampsia is an obstetric disease of unknown cause that affects approximately 5% of pregnant women¹. The visual system may be affected in 30 to 100% of patients with preeclampsia¹. Preeclampsia usually occurs in the third trimester of pregnancy and is characterized by proteinuria, hypertension and generalized oedema. The commonest ocular finding is severe arteriolar spasm, evidenced by either segmental or generalized constriction of the retinal arterioles reported in 70% of cases of toxemia³. Retinal haemorrhages, oedema and cotton wool spots secondary to arteriolar damage may follow. Areas of non-perfusion or arterial or venous occlusive disease may also develop^{4,5}. Serous retinal detachment is rare complication of hypertensive disease in pregnancy.

There are few reports in the literature as a cause of vision loss in preeclampsia. It was first described by von Graefe in 1855. The retinal detachment involves separation of the neurosensory retina from the pigmented retinal epithelium and it is one of the emergency states in ophthalmology. Many researchers showed that, in the pathogenesis of retinal detachment, an important role is played by peripheral retinal degenerations, retinal ruptures, vitreoretinal tractions and detachment of vitreous cavity. Also, retinal detachment cases are associated with myopic refraction and researches proved the existence of positive correlation between the frequency of retinal ruptures and the bulbar axis length^{6,7}. The exact pathophysiology of serous neurosensory detachment in a case of preeclampsia is not known. The detachment is usually present in patients with severe preeclampsia (Blood pressure >160/110 mm of Hg) or eclampsia, and they are usually observed in the absence of significant retinal vascular abnormalities and retinal ruptures. It is highly probable that, changes in the fluid and ion-transport function of the retinal pigment epithelium (RPE) underlying the neurosensory retina play an important role in the generation of subretinal fluid and consequent serous detachment. Under physiologic circumstances, the RPE is capable of pumping a great amount of fluid and other metabolic products, out of the neuroepithelium. RPE function is greatly influenced by the choroidal circulation⁸. In the preeclamptic state, vasoconstriction and haemorrhological changes may decrease blood flow, leading to choroidal ischemia⁹. Choroidal dysfunction, primarily choriocapillaris ischemia, is the underlying mechanism which leads to compromised fluid transport by the RPE, accumulation of subretinal fluid and consequent serous neurosensory detachment⁸. The majority of patients who manifest serous detachment during pregnancy have, with clinical management,

complete recovery within weeks after delivery, not needing any surgical intervention. Some macular sequelae may persist, specially in the pigment epithelium^{10,11}. Most patients with retinal detachment in pregnancy-induced hypertension have had full spontaneous resolution within a few weeks after well control of hypertension, and they did not have any sequelae. Medical treatment with antihypertensive drugs and steroids may be helpful^{2,5,8}. Our case responded well by control of hypertension and medical treatment. Retinal detachment resolved gradually and vision regained after 6 weeks.

CONCLUSION

Preeclampsia may cause bilateral serous retinal detachment which has a good prognosis if the causative factor is managed immediately. Most patients with retinal detachment in preeclampsia have had full spontaneous resolution within a few weeks. It may cause permanent blindness if it is not detected and treated in time. Therefore, a good coordination must be present between an obstetrician and an ophthalmologist to diagnose and manage these kinds of cases and help to prevent blindness.

REFERENCES

1. Ober RR. Pregnancy-induced hypertension (preeclampsia-eclampsia). In: Ryan SJ, editor. *Retina*. 2nd ed. St Louis: Mosby; 1994. p 1405-11.
2. Mihiu D, Mihiu CM, Talu S, Costin N, Ciuchin S, M
3. Wagener HP. Arterioles of the retina in toxemia of pregnancy. *JAMA* 1933; 101(18): 1380-4.
4. Dinn RB, Harris A, Marcus PS. Ocular changes in pregnancy. *Obstet Gynecol Surv* 2003; 58(2): 137-44.
5. Sheth BP, Mieler WF. Ocular complications of pregnancy. *Curr Opin Ophthalmol* 2001; 12(6): 455-63.
6. Alimanovi-Halilovi E. Correlation Between Refraction Level and Retinal Breaks in Myopic Eye. *Bosn J Basic Med Sci* 2008; 8(4): 346-9.
7. Alimanovi -Halilovi E. Correlation between Bulbar Axis Length and Retinal Ruptures in Case of Myopia Eye. *Bosn J Basic Med Sci* 2009; 9(3): 187-90.
8. Spaide RF, Goldbaum M, Wong DWK, Tang KC, Iida T. Serous detachment of the retina. *Retina* 2003; 23(6): 820-46.
9. Saito Y, Tano Y. Retinal pigment epithelial lesions associated with choroidal ischemia in preeclampsia. *Retina* 1998; 18(2): 103-8.
10. Lee C, Hsu TY, Ou CY, Chang SY, Soong YK. Retinal detachment in postpartum preeclampsia and eclampsia: report of two cases. *Changeng Yi Xue* 1999; 22(3): 520-4.
11. Bos AM, van Loon AJ, Ameln JG. Serous retinal detachment in preeclampsia. *Ned Tijdschr Geneesk* 1999; 143(48): 2430-2.