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Case Report

Malignant Hypertensive Retinopathy: A Clinch to the Diagnosis of Occult Pregnancy: A Case Report

Anuradha Raj[1]*, Navdeep Kaur[2] and Meenakshi Arya[3]

[1]*Professor and HOD, Department of Ophthalmology, All India Institute of Medical Sciences, Bathinda, Punjab, India*

[2]*Associate Professor, Department of Radiodiagnosis, All India Institute of Medical Sciences, Bathinda, Punjab, India*

[3]*Senior Consultant, Gunjan IVF Centre, Meerut, Uttar Pradesh, India*

***Corresponding Author:** Anuradha Raj, Professor and HOD, Department of Ophthalmology, All India Institute of Medical Sciences, Bathinda, Punjab, India.

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Abstract

A 34-year-old female presented with a diminution of vision associated with headache and vomiting. Ocular examination revealed grade IV hypertensive retinopathy. Her blood pressure was 220/120 mmHg. She was sent to a cardiologist for ECG and Echocardiography which were normal. On ultrasound of the abdomen, an occult pregnancy of about 32 weeks was diagnosed which was not diagnosed before. The patient delivered a healthy baby at about 34 weeks of gestation. On a follow-up of three months, all fundus changes regressed. Hence, we report a case that was diagnosed with occult pregnancy after the diagnosis of malignant hypertensive retinopathy.

Keywords: *Pregnancy-Induced Hypertension; Arteriolar Spasm; Papilledema; Cotton Wool Spots*

Introduction

Pregnancy-induced hypertension (PIH) is a hypertensive disorder that occurs after 20 weeks of pregnancy in the absence of other causes of raised blood pressure (BP) > 140/90 mmHg measured twice with at least 4-hour intervals. If this gets in combination with generalized edema and/or proteinuria (> 300 mg per 24 hrs) it is called preeclampsia and it is a life-threatening disorder for both the mother and fetus. It complicates 2% - 8% of all pregnancies [1,2]. This condition can show the coexistence of one or more of the other maternal organ dysfunctions including renal insufficiency, liver involvement, hematologic complications, or uteroplacental dysfunction [3].

We herein report a case of grade IV hypertensive retinopathy on a case of PIH with bilateral diminution of vision as the presenting symptom, in a woman with an unknown pregnancy.

Case Presentation

A 34-year-old female with morbid obesity (body mass index 47 kg/m^2) presented with a diminution of vision in both eyes for the last ten days. The diminution of vision was sudden in onset and preceded by transient obscuration of vision. It was painless without any diurnal variation and was associated with severe headaches. The headache was throbbing in nature and was associated with nausea and vomiting. There was no history of any ocular or systemic illness.

On ocular examination, her unaided visual acuity was 20/400 OU. The best-corrected visual acuity was 20/200 OD with +1.75Dioptre (D) Sphere but there was no improvement in visual acuity after correction for the left eye. Her color vision was normal. Pupils were normal in shape and were reacting normally to light. On Slit-lamp examination, the anterior segment of both eyes was normal. Intraocular pressures were 20 mmHg and 18 mmHg in the right (OD) and left eye (OS) respectively. Fundi examination on slit-lamp bio-microscopy (with noncontact slit-lamp lens+90D) revealed that the disc margins were blurred with obscuration of the cups in both eyes. There were tortuous and dilated veins with attenuated arterioles. There were a few flame-shaped hemorrhages and multiple cotton wool spots in both fundi with almost symmetrical changes. There were bilateral serous retinal detachments in macular areas. There was bilateral hypertensive retinopathy grade 4 (Figure 1a and 1b). Optical coherence tomography of both eyes showed serous detachments in macular areas, and a thickened peripapillary retinal nerve fibre layer corresponding to optic disc edema (Figure 2a-2d).

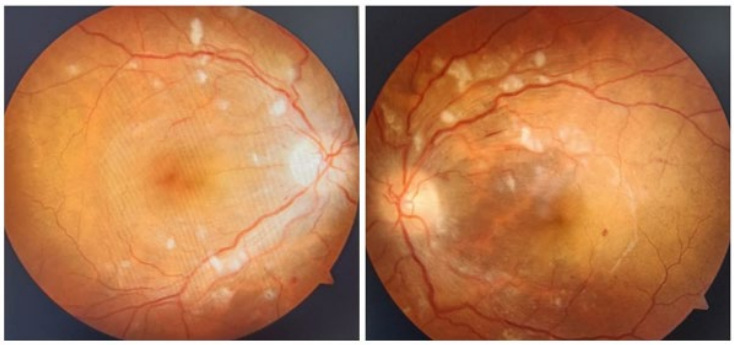

Figure 1: *Fundus photograph (a) Right eye (b) Left eye shows optic disc edema, retinal hemorrhages, cotton wool spots and serous detachments at the macular area.*

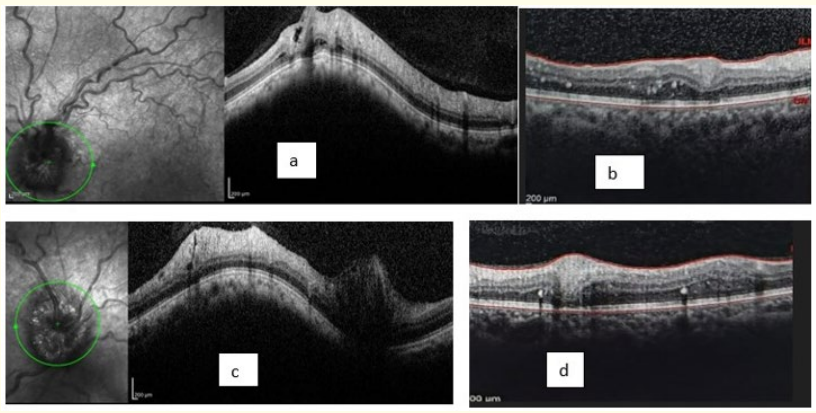

Figure 2: *Optical coherence tomography shows (a-d) Thickened peripapillary retinal nerve fiber layer corresponding to optic disc edema and retinal edema with retina serous detachments for right and left eye respectively.*

The blood pressure was 210/120 mm Hg. She was sent to a cardiologist for the therapeutic management of hypertension and systemic workup. Electrocardiography and Echocardiography were unremarkable. The Ultrasound abdomen was advised to find out the morphological changes in the kidneys and the adrenal glands which were unremarkable but it revealed a previously unknown pregnancy with a live fetus of 32 weeks (Figure 3). On complete blood count, her hemoglobin was 10.3 g/dL. Her renal, and liver function tests and serum electrolytes were within normal limits. The viral markers such as human immunodeficiency virus (HIV), Hepatitis B Virus (HBV), and Hepatitis C Virus (HCV) were non-reactive. A diagnosis of PIH-induced grade IV hypertensive retinopathy was made.

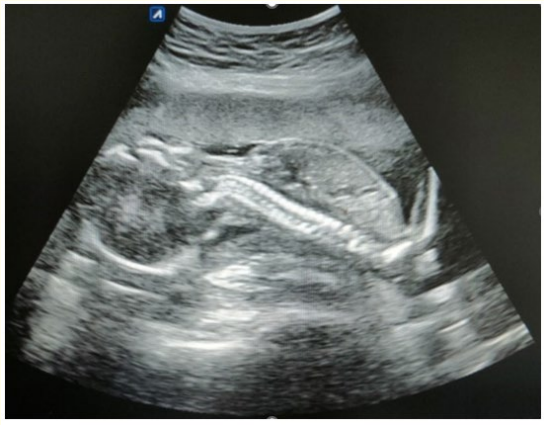

Figure 3: *Ultrasound abdomen revealed gravid uterus with single alive intrauterine fetus corresponding to 8 months of gestation.*

This diagnosis was disclosed to the patient and was started on oral antihypertensive by the cardiologist. The patient came back to us after a period of two weeks with a piece of news that she delivered a healthy baby elsewhere with a weight of 1.85 Kg by normal vaginal delivery about 6 days ago. Her BCVA improved to the tune of 20/80 for both eyes. On fundus examination, there was an almost similar picture as before but her blood pressure came down to the level of 150/86 mmHg with continued medication.

On follow-up examination after three months revealed complete resolution of previous serous detachments, diffuse arteriolar constriction, and multiple cotton wool spots. The BCVA was 20/30 with a +0.75D sphere for both eyes.

Discussion

The terminal arteriolar vasospasm and papilledema are the most prominent findings in grade IV hypertensive retinopathy. These changes can last for six weeks postpartum in PIH. The fundus changes in PIH run more parallel with diastolic blood pressure than systolic blood pressure, edema, or proteinuria [4].

The commonest changes of the fundus are evident by spasm of retinal arterioles which is an early sign of PIH and evidenced by either segmental or generalized constriction of the retinal arteriole in 70% of cases [5]. The retinal edema is suggestive of the severity of PIH and is a bad prognostic sign that is associated with spontaneous premature delivery and stillbirth [6].

Serous retinal detachment is an unusual fundus change seen in 1% - 2% of patients and causes visual loss in pre-eclampsia. It affects in its most severe form and is more common in the eclamptic patient [7]. Such changes can be seen either before or after delivery. Intensive arteriolar vasospasm can cause bilateral bullous serous detachments. Choroidal vascular insufficiency can lead to various other fundus changes such as lesions in the retinal pigment epithelium, fluid transudation, and focal retinal detachment [8,9]. The Elschnig's spots can also be seen which demonstrate areas of focal occlusion of the choriocapillaris that lead to necrosis and focal atrophy of the retinal

pigment epithelium. The intensive vasospasm of the posterior ciliary arteries supplying the optic nerve head leads to ischemic changes and eventually disc edema.

Conclusion

The eye-opener, in this case, was the unknown late pregnancy which was masked by the extreme obesity in a woman who presented with ocular signs of malignant hypertension that included grade IV hypertensive retinopathy and choroidopathy in both eyes.

This case advocates the need to rule out pre-eclampsia in all women of childbearing age who present with ocular signs and symptoms of malignant hypertension even in the absence of a known history or external signs of pregnancy. This case scenario highlights the important role of Ophthalmologists in diagnosing this potentially devastating pathology which if not diagnosed could have led to devastating complications and outcomes.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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