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CASE REPORT

Bilateral Exudative Retinal Detachment Secondary to Malignant Hypertension – A Case Report

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Abstract

To report a case of bilateral exudative retinal detachment secondary to malignant hypertension. Hypertension has been identified as a major cause of morbidity and mortality across the world. A 29-year-old female presented with sudden onset painless loss of vision in both eyes since a day. Known case of hypertension for 6 months on irregular medication. On examination vision of the right eye was hand movement with no pinhole improvement, and on left eye it was counting finger 2 meter with no pin hole improvement. Intraocular pressure of both eyes was normal. Anterior segment examination of right eye was normal except relative afferent pupillary defect. Anterior segment of left eye was normal. Fundus examination - Bilateral disc swelling with inferior retinal detachment extending 4 to 7 clock hours with flame shaped haemorrhages and cotton wool spots over blood vessels with AV crossings with dull foveal reflex. OCT showed bilateral exudative detachment of sensory retina**.** BP -150/100 mmhg. Further investigation found to have acute renal failure, requiring urgent dialysis, and patient was started on dialysis. 3weeks after blood control was acheived ,visual acquity improved to 6/18 BE with exudative retinal detachment in both eyes resolved by its own except with few residual haemorrhages. Accelerated HTN may precipitate bilateral exudative retinal detachment in patient with acute renal failure in young adults. Bilateral exudative retinal detachment is a catostropic event which results in devastating vision loss within very short time span. Timely intervention may save the vision loss and renal failure.

Keywords: Hypertensive retinopathy; Exudative retinal detachment; OCT

Introduction

Hypertension has been identified as a major cause of morbidity and mortality across the world[(1)]. Hypertension affects about 1 billion people worldwide; about half of them remain unaware of their

hypertensive status[1]. Malignant hypertension is sudden increase in blood pressure more than 200/120 mmHg[2]. Vascular narrowing is the primary response of retinal arteries to hypertension[3]. Hypertension may cause or accelerate changes in the vascular wall of target organs such as the kidney, brain, or heart. Particularly in the eye, arterial hypertension may induce changes in the retina, the choroid, and the optic nerve[4]. It may also cause a wide range of injuries: from mild to severe vascular narrowing to loss of visual acuity due to ischemic optic neuropathy[3]. Vascular narrowing is the primary response of retinal arteries to hypertension[5]. Typical signs in the fundus due to hypertensive retinopathy include diffuse or focal vasoconstriction, increased vascular permeability and arteriolosclerosis with thickening of the vessel wall[6]. These events are responsible for the development of different lesions that will characterize the stages of the retinal disease: arteriovenous crossings, hard and cotton ball exudates, thrombosis, embolisms, retinal hemorrhages, papilledema, and ischemic optic neuropathy (in severe cases)[6]. In addition, the presence of macular serous retinal detachment has been reported to be a marker of malignant hypertension[7].

Case Report

A 29-year-old female presented with one day history of sudden onset painless loss of vision in both eyes. Loss of vision is associated with headache. known case of hypertension for 6 months on irregular. medication. Ocular Examination vision of the right eye was hand movement with no pinhole improvement, and on left eye it was counting finger 2 meter with no pin hole improvement. Intraocular pressure of right eye was 14 mmhg and left eye was 15 mmhg. Anterior segment examination of right eye was normal except relative afferent pupillary defect with no intraocular inflammation. anterior segment examination of left eye was normal. Distant direct ophthalmoscopy found that both eyes media hazy and greyish reflex. Indirect ophthalmoscopy showed - Bilateral disc swelling with inferior retinal detachment extending 4 to 7 clock hours with flame shaped haemorrhages and cotton wool spots over blood vessels with AV crossings with dull foveal reflex. No retinal tears were observed in the peripheral retina examination with scleral depression. OCT showed bilateral exudative detachment of sensory retina**.** A systemic work up was conducted and found to be blood pressure was 200/120 mmhg. Patient was referred to physician for management of hypertension. Physician diagnosed that the patient has acute renal failure with laboratory investigation of urea 101mg/dl and creatinine-11.6mg/dl, requiring urgent dialysis. Patient underwent dialysis. On follow up after 1 month blood pressure was with in normal limits. Visual acquity improved to 6/18 Both eyes. Dilated fundus examination demonstared a significant resolution of the exudative retinal detachment except with few residual haemorrhages.

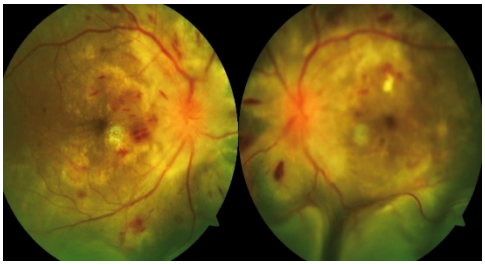

Fig 1. INDIRECT OPHTHALMOSCOPY - Bilateral disc swelling with inferior retinal detachment extending 4 to 7 clock hours with flame shaped haemorrhages and cotton wool spots over blood vessels with AV crossings with dull foveal reflex

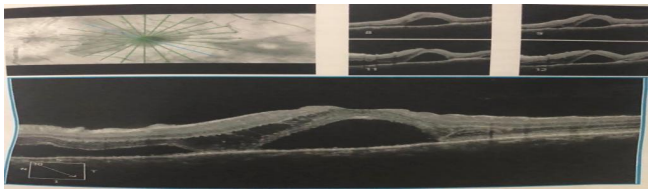

Fig 2. Optical coherence tomography - showed bilateral exudative detachment of sensory retina

Discussion

The potential causes of serous retinal detachment include a variety of conditions that can be classified into idiopathic, congenital, postsurgical, inflammatory, uveitic, hematologic, vascular, and neoplastic[8]. A complete examination, anamnesis and workup should be undertaken in patients with serous retinal detachment. The main differential diagnostic possibility in the case we reported was the Vogt- Koyanagi-Harada syndrome, a systemic inflammatory disease with ocular, neurological and skin involvement, caused by an immune reaction to antigens of melanic cells[7,9]. It usually affects young women. Its hallmark is the presence of lobulated bilateral serous retinal detachment involving the macula, and associated with variable degrees of vitreous cells and flare. The absence of extraocular manifestations, altogether with the absence of increased vitreal cellularity, made us rule out this possibility[10]. Hypertension can cause ischemic changes due to a disruption of the external blood-retinal barrier[7]. These changes can be explained by the increase of endogenous vasoconstrictor agents, leading to vasoconstriction and fibrinoid necrosis of the choroidal vessels[5]. This leads to ischemia of the overlying retinal pigment epithelium (Elschnig spots)[11]. Ischemia of the pigment epithelium allows leakage into the subretinal space (serous retinal detachment)[12]. In our case, the serous retinal detachment resolved following a normalization of blood pressure. Fundus findings were suggestive of hypertensive retinopathy such as splinter hemorrhages, vascular sclerosis and tortuosity. Cases of hypertensive retinopathy with serous retinal

detachment have been previously reported and are related to malignant hypertension, preeclampsia, eclampsia, hemolysis, elevated liver enzymes, low platelet count (HELLP) syndrome during pregnancy, primary pulmonary hypertension, and in Castleman's disease[9]. In these cases, the subretinal exudation was typically limited to the macular area without any massive serous bilateral detachment.

However, there are a few isolated case reports in literature where exudative retinal detachment is a presenting feature. Malhotra et al.[13] described similar presenting features in a young female with with bilateral renal artery stenosis. Pierro L et al.[14] de Venecia G et al.[15] reported a case of exudative retinal detachment in previously diagnosed case of renovascular hypertension. But in our case the patient presented with bilateral exudative retinal detachment which led to the diagnosis of acute kidney injury with secondary hypertension within few days.. In this scenario we are emphasizing here the role of the ophthalmologist in first detecting a case of secondary hypertension and quick management of the patient's complaints. It is also clearly demonstrated that ophthalmic manifestations do not need any specific treatment other than controlling blood pressure. Good comprehensive examination of the patient can lead to a systemic diagnosis and control of systemic parameters will help in improving associated ophthalmic features

Conclusions

In conclusion, our case indicates that accelerated hypertension may precipitate massive spontaneous bilateral exudative retinal detachment It is necessary to obtain a fundus examination in any patient with elevated blood pressure and concomitant vision complaints. Therefore, screening hypertensive patients involves close collaboration between internist and ophthalmologist. Antihypertensive is the first line of treatment, but if the exudative retinal detachment is not resolved and retinal detachment is chronic and bullous, surgical intervention to drain the fluid can be planned[16]. Accelerated HTN may precipitate bilateral exudative retinal detachment[17]. Bilateral exudative retinal detachment is a catostropic event which results in devastating vision loss within very short time span. Timely intervention may save the vision loss and renal failure.

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