

Bilateral Serous Retinal Detachment Unusual Cause of Visual Loss in a Case of Preeclampsia - Case Report

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Abstract: ***Aim:** To Report a Case of Bilateral Serous Retinal Detachment due to Preeclampsia in the Government Maternity Hospital (Tertiary Health Care Center). **Materials and Methods:** A 25 year old house wife resident of pileru primi-parous women presented to the labour room at government maternity hospital, Tirupati with severe preeclampsia. Her blood pressure was found to be elevated in the range of (systolic 140-160mm of Hg) and diastolic (100 – 120 mm of Hg). **Results:** Reattachment of the retina was found with minimal retinal pigment epithelial changes. The visual acuity improved significantly after she was discharged from hospital (Range 6/18 to 6/6) indicates the role of early diagnosis and management in preeclamptic patient to prevent visual morbidity.*

Keywords: Severe Preeclampsia, Serous retinal detachment, visual acuity, epigastric pain

1. Introduction

Preeclampsia is a multisystem disorder characterized by abnormal vascular response to placentation (1). It affects 5-10% of all pregnant women and defined by Hypertension and proteinuria that may be also associated with others symptoms and science such as visual disturbances, headache and epigastric pain (2, 3, 4). When symptoms and signs associated with seizures it is called eclampsia (2, 3, 4).

1%-2% of patients with pre eclampsia and 10% of patients with eclampsia have been reported with retinal detachment.

As a result of increased sensitivity circulating prostaglandins, severe vasospasm occurs throughout the body. 30%-100% preeclampsia patients have involvement of the visual system. Serous retinal detachment is a rare cause of visual loss in preeclampsia. Although visual symptoms are seen in 25% of preeclamptic patient, retinal detachment is seen in around 1% of severely affected individuals.

2. Case Report

A 25year old female house wife, resident of pileru with no previous history of hypertension reported to the labour room at government maternity hospital Tirupati. She developed hypertension at 34 weeks of her Gestational age in her Index pregnancy and was started on anti hypertensive at government hospital, pileru. She was on regular medication. She had completed 37 weeks of Gestation when she came to the government maternity hospital with high blood pressure with recordings (140/100mm of Hg) with no imminent signs and symptoms.

On physical examination patient was conscious and coherent. Pulse rate: 96 bpm, blood pressure 140/100mm of Hg, Temperature: 98.6F Respiratory Rate: 18/min. Laboratory examination didn't show any Thrombocytopenia and elevated liver enzymes. Urine analysis showed

proteinuria. Her blood urea was found to be 30mg/dl, serum creatinine was found to be 0.8mg/dl. Ultrasound abdomen was done and there was no abruption and Doppler changes were present. She was taken for caesarean section (in view of severe preeclampsia with Doppler changes with fetal distress). Patient had delivered an alive male child with low Apgar scores and shifted to neonatal care unit (in view of respiratory distress). Her Intraoperative period was uneventful. During post operative period patient had complaints of headache and blurring of vision and had persistent high blood pressure values and patient was started on Pritchard regimen and she was on anti hypertensives.

Patient developed sudden bilateral diminution of vision. Her bedside ophthalmic examination was conducted. Ocular examination revealed visual acuity of finger counting at two feet distance. Both eyes had normal pupillary reaction, anterior segment in both eyes were normal. Fundus examination in both eyes showed clear media, optic discs with well defined margins of vertical cup disc ratio of 0.3, serous retinal detachment of more than 2 disc diopters involving the macula with a blunted foveal reflex.

She was started on Topical Non-steroidal anti-inflammatory drops (0.1% Nepafenac) thrice daily. She was advised strict control of blood pressure and kept on antihypertensives. She had serial fundus examination during her stay at hospital. At 6 weeks follow up visit, she had reattachment of retina in both eyes with visual acuity of 20/20 in both eyes.

Case Discussion

Preeclampsia affects 5-10% of pregnancies. It is a multi system disorder characterized by abnormal vascular response to placentation and new onset of hypertension after 20weeks of gestation and associated with proteinuria. Sometimes associated with maternal organ dysfunction (renal, hepatic, neurological, hematological, fetal growth restriction may be seen).

In normal pregnancy, the bulbar conjunctival vessels with mild arteriolar spasm are normal. Whereas in pregnancy induced hypertension, the vasospasm is severe and result in choroidal ischaemia. The severity of preeclampsia can be assessed using ophthalmic arterial blood flow by Doppler analysis. In preeclampsia the increase of impedance of orbital vessels have been noted. (5). OCT has advantage of being non-invasive, breast feeding advantage, more sensitive than FFA and ICG in the pre-eclampsia.

Proper antenatal follow up with early diagnosis of gestational hypertension and pre-eclampsia cases plays a great role in reducing the morbidity and mortality.

Retina examination is warranted even in Normotensive post-partum patients, who complains of blurring of vision, headache, nausea and vomiting to rule out possibility of serous retinal detachment.

Most patients with retinal detachment in pregnancy induced hypertension will have spontaneous resolution within a few weeks without any sequelae. Medical treatment with antihypertensive drugs and steroids is helpful.

The incidence of ocular symptoms in pregnancy induced hypertension is about 50%, whereas about 40% of people show retinal changes. The cause of sudden loss of vision in pregnancy induced hypertension is exudative retinal detachment with an incidence of up to 10% in eclampsia associated with pregnancy induced hypertension. The spasm of retinal arterioles associated with raised hypertension followed by retinal ischaemia leading to vascular leakage is the proposed mechanisms for development of pregnancy induced hypertension retinopathy. Earliest changes consists of nasal arterioles narrowing followed by generalized narrowing. Retinal oedema and exudation is usually marked and these may be associated with macular star or flat macular detachment.

Ocular symptoms in the form of blurring of vision, scotoma, amaurosis will be present in 50% of patients with pregnancy induced hypertension.

Retinal features like spasm of retinal arterioles, retinal haemorrhages, cotton-wool spots, hard exudates, macular oedema and serous retinal detachment are seen in pregnancy induced hypertension.

In hypoxic retinopathy in the form of cotton-wool spots, retinal oedema, haemorrhages should be considered an indication for termination of pregnancy. Otherwise permanent visual loss or even loss of life (both mother and foetus)

The choroidal vascularisation occurs in less than 1% of preeclamptic patients with slightly higher incidence in eclamptic patients. The commonest ocular finding in preeclampsia is severe arteriolar spasm, evidenced by either segmental or generalised constriction of the retinal arterioles which is reported in 70% of cases of toxemia. (2)

Retinal haemorrhages, oedema and cotton-wool spots, areas of nonperfusion or arterial or venous occlusive disease may

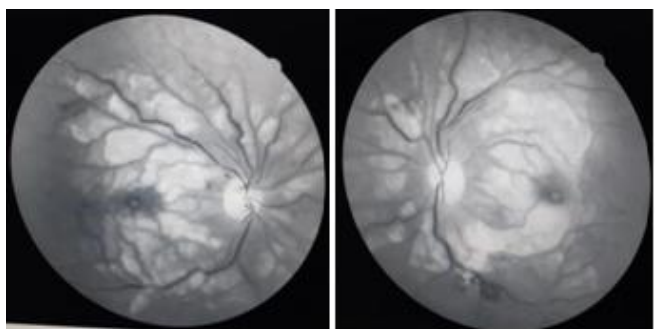
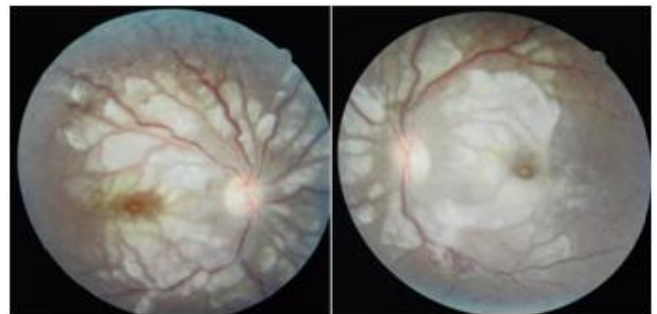
also develop. In the pathogenesis of retinal detachment, an important role is played by the peripheral retinal degenerations, retinal ruptures, vitreo retinal tractions, detachment of vitreous cavity. Also retinal detachment cases are associated with myopic refraction and researches proved the existence of positive correlation between the frequency of retinal ruptures and bulbar axis length.

Retinal detachment in eclampsia or pre eclampsia may be associated with HELLP syndrome in which the pathophysiology for retinal detachment is micro angiopathic haemolysis.

Not all pregnant women with preeclampsia will have HELLP syndrome. HELLP syndrome can occur without high BP or proteinuria. Majority within first 48 hrs of delivery develop HELLP syndrome. 30 percent of HELLP syndrome develop after delivery. The time of onset HELLP varies from few hours to 7 hrs after delivery.

The changes in the ion transport function and fluid in the retinal pigmentary epithelium underlying the neurosensory retina play an important role in sub retinal fluid generation and consequent serous retinal detachment. Under normal physiological function of retinal pigmentary epithelium is capable of pumping the great amount of fluid and other metabolic products, out of neuro epithelium. RPE function is greatly influenced by the choroidal circulation. (7).

In the pre eclamptic state, vasoconstriction leading to choroidal ischaemia. Ischaemia of the chorio-capillaries is the underlying mechanism which leads to compromised fluid transport by the RPE, accumulation of subretinal fluid and consequent serous neurosensory detachment. (1)



Fundus photographs of both Right and Left Eye

Severe preeclampsia and eclampsia are major causes of maternal and perinatal morbidity and mortality. The blindness may be due to involvement of occipital cortex or the retina. Cortical blindness with incidence of up to 15% in

eclampsia associated with pregnancy induced hypertension. Involvement of Choroidal vascularisation results in unusual cause of visual loss in pre-eclampsia. This complication occurs in less than 1% of cases of pre-eclampsia and slightly higher in eclamptic patients.

The retinal detachment usually occurs in preeclampsia or eclampsia in the absence of significant retinal abnormalities or retinal rupture.

The exact pathophysiology of serous neurosensory detachment in preeclampsia is not known. It is probably changes in ion transport and fluid function of the retinal pigment epithelium underlying the neurosensory retina play an important role in generation of subretinal fluid and serous detachment formation. RPE pump fluid and other metabolic products out of neuroepithelium.

Vasoconstriction leads to Choroidal ischaemia and Choroidal dysfunction, primarily chorio-capillaries ischaemia leads to compromised fluid transport by the RPE, accumulation of subretinal fluid leading to serous neurosensory detachment.

3. Conclusion

Hence medical treatment with antihypertensive drugs and steroids are helpful in case of exudative retinal detachment develop in severe preeclampsia patient or in intrapartum eclampsia patient.

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