

## Pre-eclampsia Associated Bilateral Serous Retinal Detachment: A Case Report

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### Abstract

Serous retinal detachment is a rare complication of pre-eclampsia. We report the case of a 20-year-old patient with a 28-week pregnancy who was referred from the obstetric emergency department for a sudden decrease in visual acuity in both eyes. The general examination revealed high blood pressure with massive proteinuria and the ophthalmological examination showed extensive bilateral retinal serous detachment. In view of this clinical picture, blood pressure was balanced with antihypertensive therapy and the retina reattached totally after 2 months.

**Keywords:** Pre-eclampsia (PE); Serous Retinal Detachment (SRD); High Blood Pressure, Proteinuria

### Introduction

Pre-eclampsia (PE) or toxemia gravidarum is an obstetric disease with a multifactorial cause that affects 5% of pregnant women [2]. It is a manifestation of arterial hypertension occurring mainly during pregnancy. It combines high blood pressure with proteinuria greater than 300 mg/24 hours in a pregnant woman for more than 20 weeks of amenorrhea. Its most frequent ophthalmologic manifestation is retinal arteriolar vasospasm. Serous retinal detachment is a rarely reported complication of preeclampsia [1,4,5]. We report the observation of a patient with bilateral serous retinal detachment complicating severe pre-eclampsia.

### Case Description

This is a 20-year-old primiparous patient who was admitted to the emergency department of the Hassan II University Hospital in Fez/Morocco for a high uterine contraction during a 28-week pregnancy. The patient also complained of a sudden bilateral decrease in visual acuity that occurred 3 days ago with intense headaches

and oedema of the limbs and face. Examination on admission shows: blood pressure 170/120 mmHg, albuminuria 3 crosses, oedema of lower limbs with facial puffiness; uterus tense with uterine height 28 cm and uterine contractions (2 CU/10 min); an absence of perception of fetal heart sounds; the patient did not present with metrorrhagia. A vaginal delivery was initiated due to severe pre-eclampsia complicated by retro placental hematoma with intra uterine fetal death.

The ophthalmological examination in the immediate postpartum period revealed: visual acuity limited to counting fingers at 1m in both eyes, the examination of the anterior segment was normal; The fundus shows an extensive retinal detachment taking the posterior pole without visible dehiscence in both eyes with deep yellowish lesions in the macular area related to diffuse alterations of the pigmentary epithelium (Figure 1). OCT confirmed bilateral retinal serous detachment with marked thickening of the macula (Figure 2). A better blood pressure control was recommended and the patient was put on antihypertensive treatment.

**Figure 1:** Fundus images of both eyes showing extensive SRD involving the macula with diffuse alterations of the pigment epithelium.

**Figure 2:** OCT appearance of both eyes showing extensive SRD with marked thickening of the macula.

After blood pressure control, ophthalmological examination at 3 weeks showed visual acuity of 1/10 poor in the right eye and 0.5/10 in the left eye, with partially reattached retina and persistent retrofoveal serous retinal detachment (Figure 3). After two months, the retina was completely reattached on OCT (Figure 4) with visual acuity improvement to 4/10 in the right eye and 3/10 in the left eye.

**Figure 3:** OCT of both eyes after 3 weeks showing partial regression of SRD and macular thickening.

**Figure 4:** OCT of both eyes at 2 months showing a complete regression of the SRD with persistence of alteration of the pigmentary epithelium predominantly in the left eye.

## Discussion

Pre-eclampsia affects approximately 3% to 5% of pregnant women [6]. Minimal visual symptoms may be observed in up to 25% of pre-eclamptic patients, however, serous retinal detachment (SRD) is estimated to affect less than one in 10,000 pre-eclamptic patients [4]. This is a very rarely reported complication of pre-eclampsia. SRD is usually bilateral (80%), more frequent in primiparous women (60%) as in our patient. The diagnosis is most often made post-partum (69%) although it can occur in the third trimester or immediately post-partum [3].

The physiopathology of retinal detachment complicating toxemia in pregnancy is still poorly understood. Several theories have been put forward, including: that the *primum movens* is choroidal ischemia; it's thought to be the cause of an alteration in the blood-retinal barrier leading to the accumulation of fluid between the pigment epithelium and the neuroretina [7]. Also in pre-eclampsia, choroidal ischemia could be related to extrinsic activation of the coagulation system induced by the release of placental thromboplastin resulting in disseminated intravenous coagulation associated with HELLP syndrome [1]. It may also be related to increased activation of the sympathetic system during pregnancy toxemia, resulting in increased choroidal vasoconstriction [9].

As the ischemia is reversible, no specific treatment is required other than blood pressure control. The evolution is generally favorable with complete resolution of the detachment within 2 to 12 weeks after delivery [10].

After resolution of the RSD, irregular areas of hyper- and hypopigmentation "Elschnig spots" may persist. In general, visual acuity improves gradually with full recovery of vision after 3 months [2].

## Conclusion

Serous retinal detachment is a rare complication of pre-eclampsia. It is thought to be related to choroidal ischemia with complex physiopathological mechanisms. Its presence should raise suspicion of an imminent worsening of the patient's general condition. Resorption of the SRD is usual after delivery and no specific treatment is required apart from blood pressure control with antihypertensive drugs.

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