

Bilateral loss of vision in severe preeclampsia case

- case report -

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Abstract

Purpose. We present a very rare case of a patient with dramatic temporary and bilateral loss of vision secondary to severe preeclampsia. **Case report.** In this study, we present the clinical evolution of a pregnant woman in her 27th week of her second gestation developing severe preeclampsia complicated with temporary blindness. Her visual acuity was recovered slowly after several weeks of treatment although generally, in this cases vision is usually regained in a period of 4 hours to 8 days postpartum. **Conclusion.** Pregnancies complicated with preeclampsia must benefit of a multidisciplinary treatment and it must be noticed that visual disorders in a pregnant woman may be the first symptoms of this disease. **Keywords:** blindness, pregnancy, preeclampsia, reversible

Introduction

Preeclampsia represents a pregnancy specific complication, which evolves with severe dysfunction of the vascular endothelium and the appearance of a generalized vasospasm, modifications that occur after 20 weeks of pregnancy but not later than 4-6 weeks postpartum⁽¹⁾.

Severe preeclampsia and eclampsia represents the main causes of maternal and perinatal mortality. The global incidence of preeclampsia was estimated between 5-14% of all pregnancies, 25% of these cases develop a severe form of preeclampsia⁽¹⁾. Vatten et al.⁽²⁾ showed that 10% of pregnancies less than 34 weeks' gestation develop severe preeclampsia, while Sibai and colleagues⁽³⁾ found a rate of only 0.3%.

Although almost 25% of women with severe preeclampsia develop vision dysfunction, but total blindness is rare, being reported in only 1-3% of cases.

The most frequent 3 visual complications of preeclampsia and eclampsia included hypertensive retinopathy, retinal detachment and cortical blindness and they are due to the retinal and/or choroidal vascular changes⁽⁴⁾.

Our study presents the case of a pregnant woman with severe preeclampsia complicated with transitory, bilateral loss of vision.

Case report

We present the case of a 27 years old pregnant woman, with a gestational age of 27 weeks that was admitted in the Obstetrics and Gynecology Clinic, from the Clinical Emergency Hospital of Craiova (Romania) for hypertension (220/120 mmHg) under specific treatment, blurred vision and persistent headaches.

History reveals a 2 para 1 pregnant woman that was not taken out, with no significant personal or family history and with a previous pregnancy that progressed normally to term.

A general examination reveals a pregnant woman with malaise, obnubilation, with moderated edemas in the inferior limbs. Due to the persistently high levels of the blood pressure

it was decided to monitor the patient in the Intensive Care Unit. Laboratory tests were normal excepting the persistent proteinuria (e.g. proteinuria 2+).

An ultrasound exam performed at the admission revealed an ultrasound age of 23 weeks, with severe oligoamnios and stillbirth.

The ophthalmological exam revealed loss of vision in both eyes VOD= 1/50nc; VOS= light perception (LP), suddenly appeared one day before the admission of the patient. Intraocular pressure was normal: intraocular pressure of the right eye was 16 mmHg, intraocular pressure of the left eye was 13 mmHg and slit lamp examination was also normal. Fundus exam reveals moderately bleached optic disc with blurred contour, papilar ischemic edema that extends to the peripapillary retina on 2-3 papilar diameters including the macular area, multiple cotton wool spots concentric around the optic disc, generalized arteriolar narrowing, silver-wiring sign of the arteries, venous dilatation, Sallus sign stage 2, macular star and macular edema in both eyes^(1,2). Clinic aspect of the fundus pleads for the diagnosis of neurohypertensive retinopathy stage 3 in both eyes.

The cardiac consult revealed a BP with oscillatory values (between 160/120 mmHg and 230/140), moderate tachycardia with a HR of 94 beats/min.

In the first 24 hours from her admission in the Obstetrics and Gynecology Clinic, the patient suffers a spontaneous abortion: dead fetus, female, 500 g weight. The general status improves after the abortion. In this period of time, the patient was supervised and evaluated under specific cardiac, ophthalmological and neurological treatment. The blood pressure was 140/100 mmHg with the persistence of the visual complaints, under antihypertensive treatment.

Four days after the spontaneous abortion it was decided the transfer of the patient in the Ophthalmology Clinic for specific treatment and monitoring.

In the Ophthalmology Clinic admission, the visual acuity presented visual acuity of the right eye of 3/50 f.c; visual acuity of the left eye of 2/50 f.c. The patient did not present

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refraction disorders. Intraocular pressure was maintained in normal limits, as follows: intraocular pressure of the right eye which was 18 mmHg and intraocular pressure of the left eye which was 12 mmHg. Biomicroscopical examination was also normal. At this time, ophthalmoscopy examination revealed the presence of ischemic modifications, decreased macular edema and a discrete improvement of the visual acuity^(3,4).

Under general treatment with Pentoxifilinum and local paravulbare injections with Atropine 1‰ and also cardiac treatment and monitoring, evolution was favorable, with the stabilization of the arterial blood pressure at 120/80 mmHg.

After 10 days of treatment, vision improved spectacularly in both eyes (VAO=0.4 cps).

At discharge, fundus exam in both eyes revealed optic disc edema reduced due to the macular and retinal edema reabsorption, cotton wool spots also in reabsorption, in accordance with the increased visual acuity^(5,6).

A visual field test was performed: kinetic perimetry revealed periferic amputation in the superior sectors, computerized perimetry revealed periferic amputations in the superior sectors, decreased retinal sensitivity, essentially of bulk relative scotoma and peripheral isosphers retraction. Contrast sensitivity remained decreased (Figures 1-8)^(7,8).

At the end of the treatment, the patient's general condition was good, with normal laboratory analysis and absent proteinuria.

Discussion

Although in severe preeclampsia and eclampsia cases, loss of vision is quoted in about 25% of the cases, total blindness is rare, with an incidence between 1% and 3%⁽⁴⁾.

Nowadays, total blindness from severe preeclampsia is considered mostly associated with a cortical origin⁽⁹⁾. In over 90% of the preeclampsia cases occur spasm in the posterior cerebral arteries associated or not with cerebral edema and that can be revealed by Doppler velocimetry. In these situations, ophthalmological examination can be normal or only narrowing of the small vessels from the posterior pole which can be present⁽¹⁰⁾.

In our study, total blindness was caused by the retinal and optic nerve modifications.

The most frequent retinal modifications in preeclampsia or severe eclampsia are the vascular spasm with vessel narrowing, associated with areas of retinal ischemia and/or retinal edema, especially in the posterior pole. Also, in some cases, are associated retinal non-perfusion areas, but if they are not very large, the visual acuity is not affected.

In this case, ischemia was intense and generalized in the posterior pole, being certified by the numerous cotton-wool spots, that represents in fact retinal non-perfusion areas with localized ischemia. Ischemia was extended also in the macular area, being certified by the presence of the macular ischemic edema, with a cherry color of the macula.

In the literature were quoted only a few cases of total blindness in preeclamptic patients. Gandhi and colleagues⁽¹¹⁾ presented a case of loss of vision until light perception in an eye, with full recovery after treatment. Interestingly, Capoor

et al.⁽¹²⁾ presented the case of a patient with total blindness. Fundus examination revealed important ischemia of the posterior pole and white-centered retinal hemorrhages. Fundus modifications and loss of vision preceded in this case the other preeclampsia signs. Authors consider that severe vasospasm with retinal capillary anoxia represent the probable cause. Brancato et al.⁽¹³⁾ presented a preeclampsia case which evolved with bilateral retinal neovascularisation and important irreversible loss of vision. The pathogeny was attributed to the formation of microtrombus probably due to a disseminated intravascular coagulation.

Severe modifications simulating Purtscher retinopathy were described in 3 pregnant women with retinal modifications in the first hours from delivery due to a very hard labor. Fundus examinations and angiography revealed multiple retinal or macular peripapilar superficial ischemic zones, suggesting a microtrombotic phenomenon⁽¹⁴⁾.

Recently, it was described the case of a patient with severe preeclampsia and bilateral loss of vision secondary to an arteriolar occlusion, with the aspect of a Purtscher retinopathy⁽¹⁵⁾. Choroidal modifications, which are described since 1855, can also be present under a serous retinal detachment, with spontaneous reattachment of the retina and full vision recovery in the first days after giving birth.

A variable severity retinopathy was presented in the majority of preeclamptic patient. There is a positive correlation between the severity of the preeclampsia and the degree of retinopathy, but with all that, most of the changes are reversible once the preeclampsia disappears, thing demonstrated also in our case, where vision was fully recovered once blood pressure became normal and the pregnancy evolution was stopped.

Loss of vision is usually regained in 4 hours until 8 days postpartum⁽¹⁶⁾, and in comparison with our case, the vision was slowly recovered after several weeks of treatment (i.e. in the first 10 days the patient recovered until 0.4 of the visual acuity in both eyes). The further treatment gained with vasodilatory and vasoprotectors, generally administrated, determined full vision recovery (VOD=1, VOS=0.9).

Fundus examination after 2 months from the preeclampsia episode revealed reabsorption of all retinal exudates and hemorrhages, with the persistence of some narrowing in the retinal arteries, especially at the crossing level. The patient will remain further under cardiac observation.

The particularity of this case consists of the following elements:

- the rarity of the total blindness, especially bilateral blindness, having in the view that the global incidence of preeclampsia is between 5 and 14% of all pregnancies, of which only 25% develop a severe preeclampsia, and only in 1-3% of cases with severe preeclampsia total blindness can occur;

- our case represents the second complicated preeclampsia case with temporary blindness in the last 20 years at the Obstetrics Gynecology and Ophthalmology Clinic of the Emergency County Hospital from Craiova (Romania);

- the full recovery of the vision is regained usually in a period between 4 hours and 8 days in comparison with

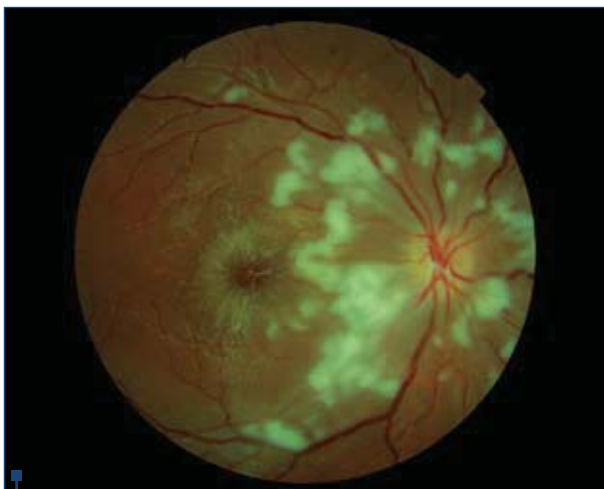


Figure 1. Right eye fundus at the admission in the Obstetrics and Gynecology Clinic (Ophthalmology Clinic collection)

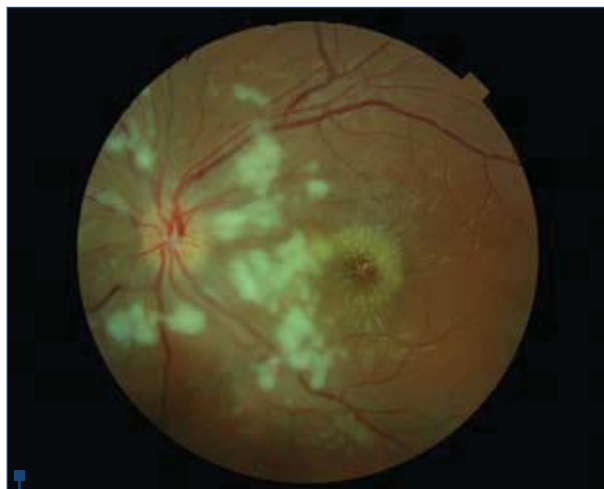


Figure 2. Left eye fundus at the admission in the Obstetrics and Gynecology Clinic (Ophthalmology Clinic collection)

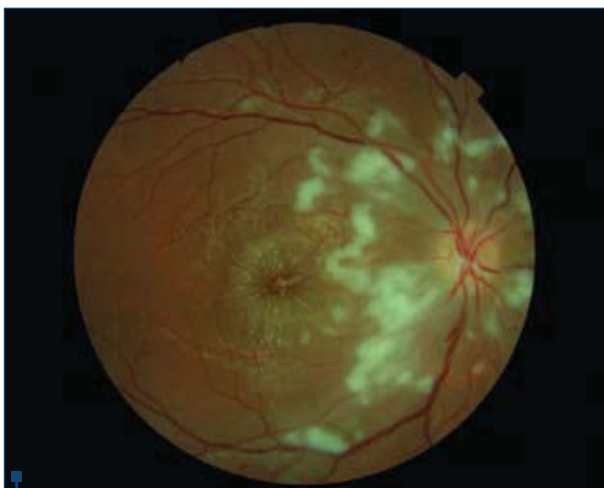


Figure 3. Right eye fundus at the admission in the Ophthalmology Clinic (Ophthalmology Clinic collection)



Figure 4. Left eye fundus at the admission in the Ophthalmology Clinic (Ophthalmology Clinic collection)

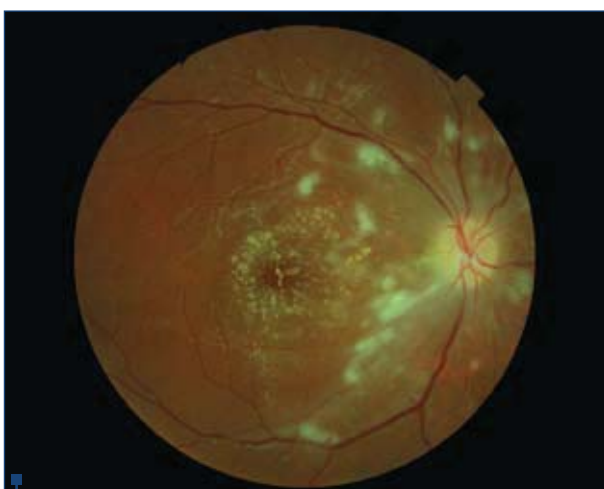


Figure 5. Right eye fundus at discharge (Ophthalmology Clinic collection)



Figure 6. Left eye fundus at discharge (Ophthalmology Clinic collection)

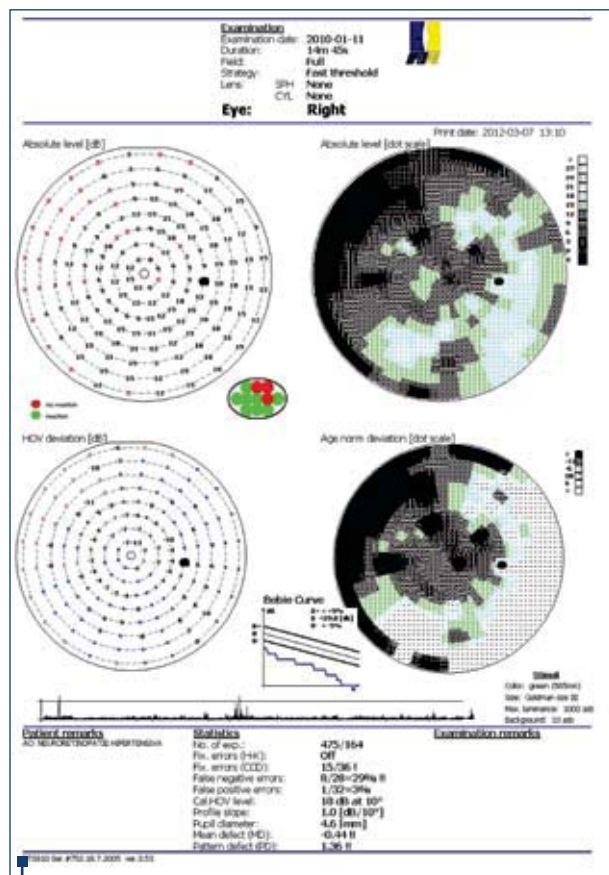


Figure 7. Right eye visual field (Ophthalmology Clinic collection)

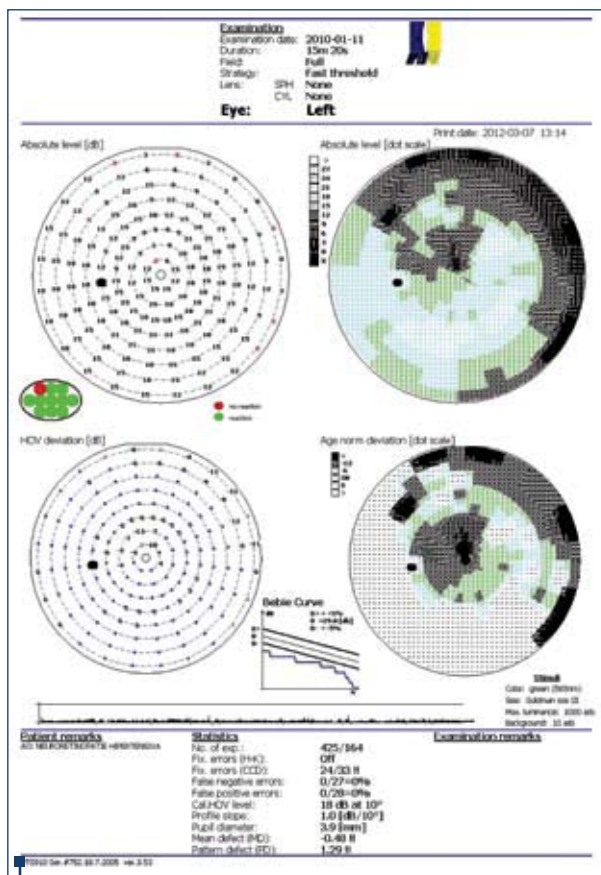


Figure 8. Left eye visual field (Ophthalmology Clinic collection)

our case in which the vision recovery was slow, in about 8 weeks from the termination of pregnancy at 27 weeks of gestation.

Conclusions

Visual complaints that appear in preeclampsia, such as diplopia, amaurosis, photopsia and/or scotoma, are relatively frequent, but the bilateral vision loss with the important ischemical modifications in both eyes is a very rare complication. Pregnancies complicated with

preeclampsia are associated with a bad prognosis both for the mother and child especially in preeclampsia cases complicated with blindness. Such cases must benefit of a multidisciplinary treatment and it must be noticed that visual disorders in a pregnant woman may be the first symptoms of this disease. After a medline search, we found 8 cases of severe preeclampsia complicated with blindness in the last 20 years. In 7 of the cases blindness was associated with a cortical origin and in only one case with a retinal origin. ■

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