

Unilateral color vision abnormality in a patient with hemolysis, elevated liver enzymes and low platelet counts (HELLP) syndrome

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Abstract: We present a case of unilateral color vision abnormality in a 34-year-old postpartum woman. She complained of color vision abnormality on day 1 post-partum. Fundus examination revealed serous retinal detachment in both eyes. These lesions were much more prominent in the left eye than the right. Color vision testing with a Farnworth Dichotomous Test showed confusion pattern of the tritan axis in left eye. Her color vision abnormality gradually ameliorated and retinal detachment completely resolved on day 34 post-partum. Although serous retinal detachment was detected in both eyes, we speculate that this inequality of the color vision test is resulted from the different condition of serous retinal detachment in both eyes.

Keywords: color vision, optical coherence tomography, serous retinal detachment, HELLP

INTRODUCTION

Serous retinal detachment (SRD) is sometimes caused by hypertensive disorders in pregnancy and its associated conditions, in which the predominant eye symptoms are blurred vision, distorted vision, and reduced visual acuity [1-4]. Color vision abnormality can be a manifestation of various eye disorders [5-7]. However, unilateral acquired color vision abnormality is extremely rare [8]. Herein, we report a case of unilateral color vision abnormality in a 34-year-old postpartum woman.

CASE REPORT

A 34-year-old woman was transferred to this institute due to hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome. On day 1 post-partum, she complained of color vision abnormality: 'although the wall looked white yesterday, now it looks yellow.' She was referred to our clinic on the same day. Best corrected visual acuity was 1.2 in her both eyes. Fundus examination revealed SRD in both eyes (Figure 1a and b). These lesions were much more prominent in the left eye than the right.

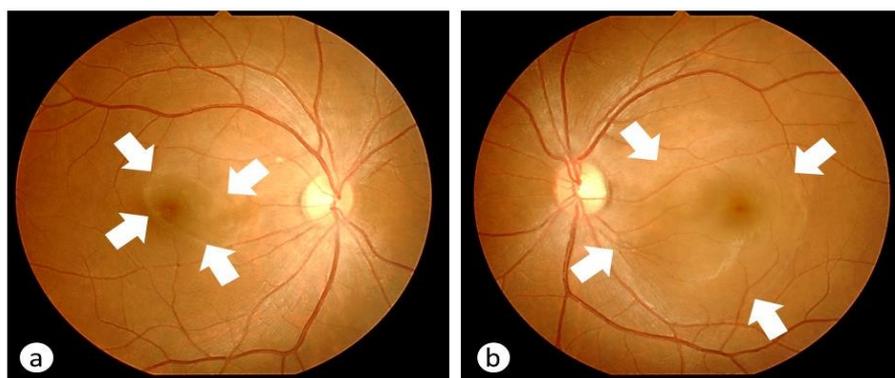


Fig. 1 Fundus photographs of the (a) right and (b) left eyes.

Note serous retinal detachment in both eyes (arrows). Optical coherence tomography (OCT) confirmed marked SRD in both eyes (Figure 2a and 2b). SRD was

much more prominent in the left eye than the right as well as fundus examination.

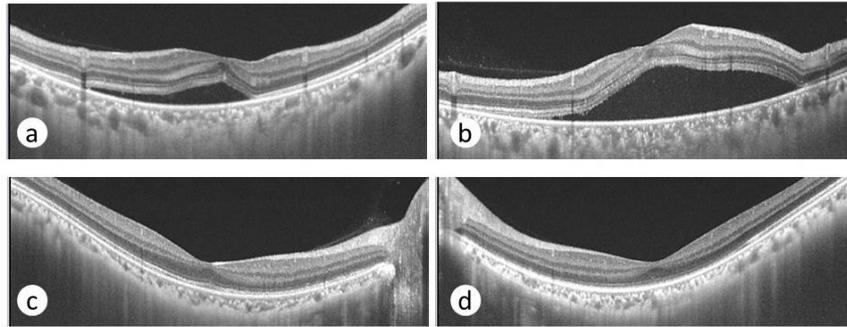


Fig. 2 Optical coherence tomography images of the (a, c) right and (b, d) left eyes.

A, b: initial visit; c, d: 1 month later

Note marked serous retinal detachment (a, b) has disappeared (c, d).

Color vision testing with a Farnworth Dichotomous Test (Panel D-15 test) showed confusion pattern of the tritan axis in left eye (Figure 3a and 3b).

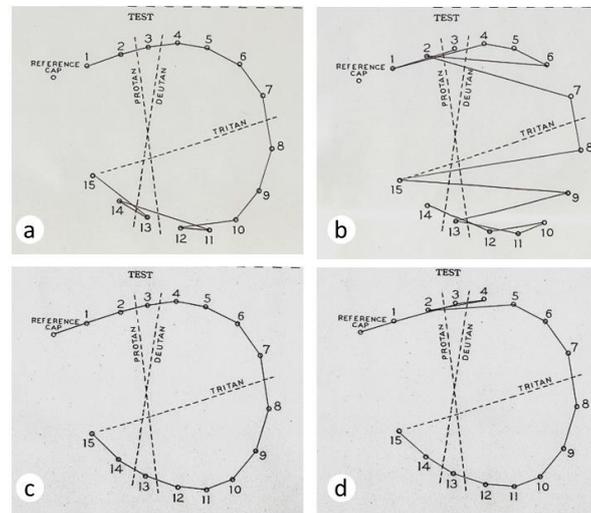


Fig. 3 Farnworth Dichotomous Test of the (a, c) right and (b, d) left eyes.

a, b: initial visit; c, d: 1 months later

Note confusion pattern of the tritan axis in left eye (b).

OCT revealed the complete resolution of SRD (Figure 2c and 2d), and color vision abnormality completely disappeared on day 34 postpartum (Figure 3c and 3d). The obstetric aspect of this case was previously described [9].

DISCUSSION

A previous report showed that SRD occurs in 0.2–2% and 0.9% of patients with preeclampsia and HELLP syndrome, respectively [2, 3]. To our best knowledge, this is the first report describing a post-partum woman with HELLP-related SRD, in whom color vision abnormality was the first and predominant manifestation. Furthermore, this patient had unilateral color vision abnormality.

Color vision abnormality can be a manifestation of various eye disorders, including congenital color vision abnormality, cataract, glaucoma, optic neuropathy, and macular edema [5-7]. Our patient had no family history on color vision abnormality. Color vision abnormality completely disappeared after the improvement of SRD. Therefore, we diagnosed this condition as color vision abnormality caused by SRD.

Color vision abnormality has been suggested to be caused by selective damage to the cone cells, that is, when the detachment spreads to the macula, then the cone cells richly distributed there, deprived of a blood supply, lose their normal function [5, 6]. Why color vision abnormality was unilateral in this patient remains unclear. A possible explanation for this reason is SRD was much more prominent in the left eye than the right.

In addition, unilateral acquired tritanopsia is extremely rare [8]. Generally, tritan defects affect the short-wavelength cone (blue cone). In central serous chorioretinopathy, a typical model of SRD, vision defect involving various colors (blue, red-green, and both red-green and blue) occur, meaning that vision defect involving any color can develop [5-7]. However, the color defect was a blue color vision defect in most cases [6]. A possible explanation for this reason is blue cones may be more delicate physiologically and more susceptible to photoreceptor diseases [6]. Although our findings are based on a single case, additional cases are necessary to answer this question.

Disclosure

The authors have no conflicts of interest to disclose.

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