A Case of Onset and Treatment on Purtscher's Retinopathy in a Single Eye

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Case report

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Abstract

Background:

Purtscher's retinopathy is an occlusive microvasculopathy caused by traumatic injuries, especially like head and chest injuries. The exact mechanism of injury remains unclear, and Most case reports about Purtscher's retinopathy focused on the symptoms of fundus, and did not provide detailed medical treatments.

Case presentation:

In this case, the patient suffered suddenly vision loss in the right eye one day after a traffic accident with moderate head and chest injuries. Ocular examinations revealed typical characteristics of cotton wool spots, and minimal intraretinal hemorrhages around the optic disc. 5 different drugs were used in this patient. 15 days after the treatment (corticosteroids and traditional Chinese medicine), the vision of the patient was improved and the symptoms (cotton wool spots, hemorrhages, retinal edema and visual field) were alleviated obviously.

Conclusions:

Corticosteroids and traditional Chinese medicines used in our case did improve the vision of the patient, and alleviated the symptoms of fundus.

Background

Purtscher's retinopathy is an occlusive microvasculopathy caused by traumatic injuries, especially like head and chest injuries. The disease has a prevalence of approximately 0.24 persons per million per year^[1, 2]. Patients with Purtscher's retinopathy typically present with a sudden onset visual decline in single eye or both eyes within two days after traumas, and are characterized with large white areas (Purtscher's fleckens), cotton wool spots and minimal intraretinal hemorrhages around the optic disc^[3]. However, the exact mechanism of injury remains unclear, and current evidence suggests that it is embolic in nature. Most case reports about Purtscher's retinopathy focused on the symptoms of fundus, and did not provide detailed medical treatments. Our case report, however, provided more detailed information on the treatment on Purtscher's retinopathy, and compared the symptoms of fundus after the treatment with that before the treatment.

Case Presentation

A 41-year-old man came to our hospital due to suddenly decreased vision in his right eye (OD) for 9 days. The uncorrected visual acuity (UCVA) was 20/200 in the right eye and 20/25 in the left eye (OS), and the best corrected visual acuity (BCVA) did not improve in the right eye. The man sustained a traffic accident with moderate head and chest injuries 10 days before. Fundus examination showed multiple cotton wool

spots of different sizes and retinal hemorrhages around the optic disc in the right eye (Fig. 1a, b), and fundus fluorescein angiography (FFA) showed amounts of non-perfusion areas around the optic disc in the right eye (Fig. 1c, d). Retinal edema surrounding the macula was shown in the right eye by optical coherence tomography (OCT) (Fig. 1e, f). Besides, static perimetry indicated enlarged blind spots in the right eye (Fig. 1g, h).

Purtscher's retinopathy was considered as the diagnosis in this case for the sudden vision loss associated with multiple traumas and multiple cotton wool spots of different sizes around the optic disc. Therefore, 5 different drugs were used in this patient, including prednisolone acetate tablets (30 mg per day), extract of ginkgo biloba leaves injection (70 mg per day), mecobalamin injection (0.5 mg per day), compound anisodine hydrobromide injection (0.5 mg per day), compound vitamin B tablets (3 tablets per day).

7 days after the treatment, prednisolone acetate tablets were stopped using. UCVA was 20/50 in the right eye, and BCVA was 20/30 with a spectacle correction of -1.00 D. 15 days after the treatment, UCVA was 20/30 in the right eye, and BCVA was 20/20 with a spectacle correction of -1.00 D. Fundus examination showed less cotton wool spots and retinal hemorrhages around the optic disc in the right eye (Fig. 2a), and approximately normal retinal structure was shown in the right eye by OCT compared with the examinations before (Fig. 2b). In addition, static perimetry indicated reduced blind spots in the right eye compared with the examination before (Fig. 2c).

Discussion And Conclusions

In this case, the patient suffered suddenly vision loss in the right eye one day after a traffic accident with moderate head and chest injuries. Ocular examinations revealed typical characteristics of cotton wool spots, and minimal intraretinal hemorrhages around the optic disc. 15 days after the treatment (corticosteroids and traditional Chinese medicines), the vision of the patient was improved and the symptoms (cotton wool spots, hemorrhages, retinal edema and visual field) were alleviated obviously. Although it was reported that the difference between no treatment and glucocorticoid therapy had no statistical significance, the evidence quality for this conclusion was "very low" and had large bias^[4]. Therefore, if possible, a further large-scale prospective study on these cases is necessary.

Other cases also reported patients with Purtscher's retinopathy after traumatic head injuries^[5, 6]. We, however, provided more detailed treatments and ocular examinations after the treatment compared with before. Corticosteroids and traditional Chinese medicines used in our case did improve the vision of the patient, and alleviated the symptoms of fundus.

Abbreviations

OD	The right eye
UCVA	Uncorrected visual acuity
OS	The left eye
BCVA	Best corrected visual acuity
FFA	Fundus fluorescein angiography
OCT	Optical coherence tomography

Declarations

Ethics approval and consent to participate

This study was performed in accordance with the tenets of the Declaration of Helsinki for research involving human subjects. Written informed consent was obtained from the patient.

Consent for publication

The written consent to publish the information was obtained from the patient in this paper. The patient agreed to publish the findings and figures gathered from himself in this paper.

Availability of data and material

All data generated or analysed during this study are included in this published article.

Competing interests

There is no competing interests in this study.

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Authors' contributions

TY collected the data and was a contributor in writing the article.

HL was the corresponding author and collected the data.

CG was the corresponding author; wrote, proofread and approved the final version of the article.

All Authors read and approved the manuscript.

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Figures

Figure 1

Ocular examinations. a) Fundus photograph of the right eye before treatment. b) Fundus photograph of the left eye before treatment. c) FFA results of the right eye before treatment. d) FFA results of the left eye before treatment. e) OCT results of the right eye before treatment. f) OCT results of the left eye before treatment. g) Static perimetry results of the right eye before treatment. h) Static perimetry results of the left eye before treatment.

Figure 2

Ocular examinations after treatment. a) Fundus photograph of the right eye 15 days after treatment. b) OCT results of the right eye 15 days after treatment. c) Static perimetry results of the right eye 15 days after treatment.