Case Report

Traumatic Central Retinal Vein Occlusion: A Case Report

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Article Notes:

Received: Sep. 29, 2018
Received in revised form: Nov. 1, 2018
Accepted: Nov. 28, 2018
Available Online: Jan. 5, 2019

Keywords:

Retinal vein occlusion
Trauma
Case
Iran

Abstract

Here we report a healthy 48-year-old man who experienced severe loss of vision in the left eye due to central retinal vein occlusion (CRVO) after head trauma. The patient was visited by us three days after the trauma. All systemic workups were normal. Anterior segment examination showed subconjunctival hemorrhage in the left eye. Anterior chamber was deep and clear and intraocular pressure was normal. Relative Afferent Pupillary Defect (RAPD) was negative. A dilated fundoscopic examination of the left eye revealed a moderately congested optic nerve with dilated and tortuous retinal veins scattered throughout the fundus with dot, blot, and flame-shaped hemorrhages. A few yellowish white cotton-wool spots were also seen. A fluorescein angiogram in the left eye confirmed a nonischemic CRVO. Although isolated CRVO following trauma is a rare condition, ophthalmologists should be aware of the potential for blunt head trauma causing CRVO.

How to cite this article: Gohari M, Babaei E. Traumatic Central Retinal Vein Occlusion: A Case Report. Journal of Ophthalmic and Optometric Sciences . 2019;3(1): 36-9.

Introduction

Central retinal vein occlusion (CRVO) has been defined as a retinal vascular disorder characterized by dilation of the retinal veins, retinal hemorrhage, macular edema and retinal ischemia [1,2]. CRVO is potentially harmful for vision and usually occurs in patients over 60 years of age with associated risk factors such as diabetes and hypertension [2]. CRVO is rare in young patients and usually occurs without typical risk factors [3]. Unusual causes for CRVO include hypercoagulability states, collagen vascular disease, lymphoproliferative disorders, medications and trauma [3-11].

In this report, we present a 48-year-old man with CRVO caused by trauma to his head after a car accident.

Case report

This case report was approved by our institutional ethics committee and informed consent was obtained from the patient before before reporting the case.

A 48-year-old man presented with blurring of vision in the left eye immediately after head trauma following a car accident. The patient was visited by us three days after the trauma. Visual acuity was counting fingers in 10cm in the left eye and in the right eye.

Anterior segment examination showed subconjunctival hemorrhage in the left eye. Anterior chamber was deep and clear and intraocular pressure was normal. Relative Afferent Pupillary Defect (RAPD) was negative. The right eye fundus examination was normal. A dilated fundoscopic examination of the left eye revealed a moderately congested optic nerve with dilated and tortuous retinal veins scattered throughout the fundus with dot, blot, and flame-shaped hemorrhages (Figure 1). A few yellowish white cotton-wool spots were also seen.

Figure 1: Dot, blot, and flame-shaped hemorrhages with cotton-wool spots and congested optic nerve in fundoscopic examination of the left eye

A fluorescein angiogram in the left eye confirmed a nonischemic central retina vein occlusion (CRVO). It showed marked hypo fluorescence in all four quadrants, consistent with the blocking effect of retinal hemorrhages and the area of capillary non perfusion (Figure 2).

Optical coherence tomography (OCT) showed normal retina in the right eye and cystoid

Figure 2: Marked hypo fluorescence in all four quadrants, consistent with the blocking effect of retinal hemorrhages and the area of capillary non perfusion in angiography of the left eye

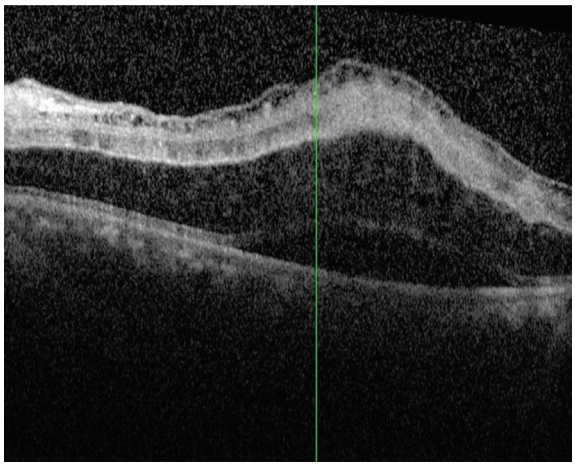

Figure 3: Cystoid macular edema with subfoveal fluid in patient's left eye

macular edema with subfoveal fluid in the left eye (Figure 3).

Routine systemic workups and a thrombophilia profile requested were normal. There was no history of ocular disorders and systemic disease in our patient. The diagnosis of traumatic CRVO was made for the patient.

Discussion

CRVO is one of the most common retinal vascular disorders and might be potentially harmful for vision function. Usually, CRVO is seen in old patient with a history of systemic disease. In our rare case, a healthy 48-year-old man who experienced severe visual loss after blunt head trauma following a car accident was diagnosed as a case of CRVO.

In a study by Zvorničanin et al. ,[12] the analysis of literature related to post traumatic central retinal artery occlusion (CRAO) showed that most cases are a pure CRAO without CRVO. However, in other studies by Noble et al., [13] Kumar Singh et al., [14] and Bouraoui et al., [15] combined CRVO and CRAO following trauma has been reported.

Kline et al., [16] have reported a case with the clinical picture of thrombosis of the central retinal vein after minor head trauma. In our patient the exact mechanism of the CRVO could not be determined without a direct ocular trauma. The facial contusion could have induced a compression force transmitting to the orbit resulting in stretching of the blood vessels. This induced vasospasm or retinal vessel stretching might have then resulted in endothelium damage which leads to formation of thrombus and finally vascular occlusion [17,18].

Conclusion

Although isolated CRVO following trauma is a rare condition, ophthalmologists should be aware of the potential for blunt head trauma causing CRVO.

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Footnotes and Financial Disclosures

Conflict of interest:

The authors have no conflict of interest with the subject matter of the present study.