Case Report

Acute Mental Stress as a Precipitating Factor for Central Retinal Vein Occlusion in an Elderly Patient

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Abstract

A 59-year-old male patient was referred to Basir Eye Clinic, Tehran, Iran, for visual evoked potential (VEP) and electroretinography (ERG) of the left eye. The results showed a flat VEP P100 peak and a flat ERG b-wave. Further investigation into the cause of this sudden episode revealed central retinal vein occlusion, which was attributed to acute mental stress.

Keywords: Central Retinal Vein Occlusion; Mental Stress; Blindness.

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Introduction

Stress is an inevitable condition experienced by people worldwide. Continuous exposure to stress can significantly impact mental activity as well as physical health, leading to various diseases [1]. Stress can evoke anxiety and depression [2]. Furthermore, short-term emotional stress can act as a trigger for cardiac events in individuals with advanced atherosclerosis [3].

The visual system is not exempt from the effects of stress; it can also be adversely affected. Sabel et al., [4] reported that continuous stress negatively impact the eye and brain due to imbalances in the autonomic nervous system and vascular dysregulation. Consequently, stress may be a significant contributor to visual system diseases such as glaucoma and optic neuropathy [4].

Ophthalmic electrophysiology is widely used to diagnose and monitor the progression of vision-related disorders. In this context, visual evoked potential (VEP) and electroretinography (ERG) are essential techniques for the differential diagnosis of functional versus organic visual loss [5].

Shushtarian et al., [6] investigated the potential effect of dyslexia on the visual pathways of patients in a case-control study involving 13 dyslexic individuals. They recorded VEP in these patients and compared the VEP P100 peak latency and amplitude with the same parameters in a healthy population [6]. Their study concluded that dyslexia influences the visual pathways, which can be evaluated using VEP [6]. Adhami-Moghadam et al.,[7] explored retinal changes in patients with Coats disease using the ERG technique. Their findings demonstrated that Coats disease damages the retina, which can be quantified by changes in the amplitude of the ERG b-wave [7].

Here we present a case of an elderly patient suffering from central retinal vein occlusion caused by acute mental stress. This was approved by the institutional ethics committee. The patient gave written consent before the case being reported..

Case report

A 59-year-old male patient was referred to Basir Eye Clinic, Tehran, Iran, for visual evoked potential (VEP) and electroretinography (ERG) of the left eye. He could barely distinguish light with his left eye. Both eyes were tested using VEP and ERG examinations. The results for the right eye were normal; while the left eye showed a flat VEP P100 peak and a flat ERG b-wave in flash VEP and ERG testing.

A comprehensive examination of the left eye, including fluorescein angiography (FAG) and optical coherence tomography (OCT) led to a diagnosis of central retinal vein occlusion (CRVO).

To investigate the cause of this episode, a detailed evaluation was performed. The patient was otherwise healthy, with normal results in pathological laboratory examinations. Ultimately, the patient reported experiencing significant mental stress the night before the visual loss, caused by an argument with his son-in-law regarding debt repayment. This acute mental stress was likely the underlying cause of CRVO.

Discussion

A 59-year-old man with visual loss in his left eye underwent a comprehensive examination using routine and specific ophthalmic techniques, including slit-lamp evaluation, VEP and ERG. The final diagnosis was central retinal vein occlusion (CRVO), with

acute mental stress identified as the probable underlying cause.

Ha et al., [8] performed an extensive study regarding relationship between depression and risk of retinal vein occlusion (RVO) and concluded that the presence of depression was significantly associated with risk of RVO. This finding supports the result of the present work regarding the probability of acute mental stress causing CRVO.

Conclusion

Acute mental stress can induce CRVO in rare cases, which should be considered by ophthalmologists for the effective treatment of patients.

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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 manuscript.