

Minoxidil and I (eye), just a coincidence or is it fate?

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Abstract

A 39 years old healthy cardiologist with history of two months applying of topical Minoxidil for androgenic alopecia was presented with metamorphopsia and central scotoma. After full medical work-up, CSC was diagnosed. Minoxidil may be the culprit for CSC.

Key clinical message

Central serous chorioretinopathy (CSC) probably finds its way into adverse reaction column of Minoxidil's drug leaflet. Hence, whenever you face a patient with CSC it worth taking full drug history specifically steroid and Minoxidil.

Key words: Minoxidil, Central serous chorioretinopathy

Introduction

Central serous chorioretinopathy (CSC) is a common disease of posterior segment of the eye which predominantly affects young men[1] with type A personality, hypertension, steroid usage or obstructive sleep apnea[2]. According to the latest reports, this is the fourth most common retinal disease and also a frequent cause of mild to moderate visual impairment[3]. Metamorphopsia and central scotoma are the main presenting symptoms in acute CSC. Acute CSC is often self-limiting and treatment may be unnecessary. However; chronic CSC causes occupational limitation and bothering visual symptoms which urge physicians to take treatment measures[4]. In addition, high rates of recurrence mandate us to be aware of its pathophysiology and related risk factors. Choroidal vascular compromise and multifocal choroidal hyperpermeability have been suggested for the pathophysiology of this entity[5]. In this case report which was happened to one of the authors of this article (Dr. Ali Bozorgi), we decided to share our views about CSC and its probable preventable cause.

Case Presentation

A 39 years old healthy cardiologist (A. Bozorgi) presented with metamorphopsia and central scotoma dominantly in the right eye. He was examined by his ophthalmologist. After dilated eye examination he ordered for retinal imaging. Dr. Bozorgi underwent optical coherence tomography (OCT) the day after, Figure 1. Along with OCT his ophthalmologist performed Fluorescein angiography to decide the appropriate therapy and plausibility of photodynamic therapy PDT. OCT and angiography were both in favor of CSC. He was asked about his past medical history and also history of steroid usage; which all were negative but 2% topical Minoxidil since 2 months ago. He was reassured that this disease is not only common but also is self-limiting and the definite etiology is unknown yet. Eplerenone was started and wait and watch approach was suggested. However, as an electrophysiologist he needed his eye to be the same as before ASAP. Unfortunately after almost 3 weeks his symptoms progressed and his job was affected. He sought for second medical opinion from another well-known ophthalmologist; and the same tests were ordered again. The leakage and the Sub-retinal fluid were increased, Figure 2, and he started to panic! Nothing was changed in his life style

in these 3 weeks to justify the progression of CSC but the dosage of topical Minoxidil which was increased from 2% to 5%. So far, everything was toward the stressful job and a type A personality as the culprit for this progression. He was not convinced and as a researcher he started to search the net himself to find the answer!

In 2011 Dr. Scarinci and his colleagues in Italy, reported a case with CSC in which the patient was on Minoxidil and discussed about the relation between these two. After almost 3 months, on the impression of that article, he stopped Minoxidil and the symptoms were subsided in about 10 days. Follow up OCT was also in favor of improving retinal damage after Minoxidil discontinuation, Figure 3.

Discussion

Based on pathophysiologic pathway Minoxidil may be the culprit for CSC. Capillary rearrangement and massive angiogenesis are the baseline events for many retinal diseases. Scant data in literature defend the hypothesis that Minoxidil enhances proliferation of choroidal vessels and is related to CSC. The debate about the precise mechanism of this association is still on the table. Direct toxic effect of Minoxidil on retinal pigmented epithelium or vasodilation of choroidal vessels have been mentioned[6]. In 2010, Dr. Reza Rastmanesh, described the effect of Minoxidil on inducing Aquaporin 4 receptor which causes glial cell swelling and edema. This pathway may also be involved in CSC [7]. To date, there is not a confirmative consensus on the exact mechanism, may be more than one mechanisms are involved.

The high prevalence of CSC and also Minoxidil usage is of note. May be this is just a coincidence between two common things in young male population. However, the unique feature of this case presentation is unwanted increase in dosage of Minoxidil and deterioration of retinal edema and patients symptoms in three weeks. This is in favor of the causal role of Minoxidil in CSC pathophysiology.

Side effects of Minoxidil are unwanted facial/body hair, dizziness, fainting, chest pain, unusual weight gain, etc. Conjunctivitis and blurred vision were also mentioned[1], Possibly, into the future, based on this article and previous studies by Dr. Sancrini and Dr. Rastmanesh, CSC finds its way into adverse reaction column of Minoxidil's drug leaflet.

Recently a case report has also postulated the relation between long term Minoxidil usage and CSC in a 41 years old man. Eplerenon was suggested as an effective therapy in this situation. Compared to their report, in our case presentation the duration of Minoxidil usage was shorter and CSC did not improve by Eplerenon. We think Eplerenon is no more than placebo in CSC treatment and discontinuation of Minoxidil is the first option[8].

Finally, may be an important message of this article to the medical researchers and staffs is: whenever you face a patient with CSC it worth taking full drug history specifically steroid and Minoxidil.

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AUTHOR CONTRIBUTION

AB and KH: Gathered all clinical materials and images. AKH: revised the manuscript. AB and KH: Reviewed the literature and drafted the initial version of manuscript.

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Figure Legends

Figure 1. First OCT and angiography.

Figure 2. The second OCT of the right eye. After up titration of Minoxidil dosage.

Figure 3. Last OCT of the right eye. 10 days after Minoxidil discontinuation.

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