

Case Report

Central Serous Chorioretinopathy Associated with Tadalafil

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Keywords

Central serous chorioretinopathy · Tadalafil · Pachychoroid

Abstract

We report a case of central serous chorioretinopathy (CSCR) associated with tadalafil, a phosphodiesterase 5 inhibitor medication. In this report, we describe a case of a 59-year-old male who presented with blurred vision in the right eye. On examination, he was noted to have serous macular, pigment epithelial detachments, and increased choroidal thickness. The diagnosis of CSCR was made, and the patient was asked to stop the offending agent. Three months after stopping tadalafil, the patient's visual symptoms and subretinal fluid resolved. In conclusion, prescribing physicians should be aware of tadalafil's ability to decrease vision and cause CSCR. The addition of CSCR to the list of tadalafil's side effects should also be considered.

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Introduction

Central serous chorioretinopathy (CSCR) is a neurosensory disorder characterized by serous detachment of the neurosensory retina and the retinal pigment epithelium [1]. The exact etiology behind CSCR has not been proven yet. However, many factors may contribute to CSCR which include type A personality, corticosteroids, pregnancy, and smoking [1]. To the best of our knowledge, phosphodiesterase (PDE) 5 inhibitor-induced CSCR has not been studied extensively and is limited to only few case reports mostly on sildenafil [2, 3].

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Case Report

A 59-year-old male presented with acute decreased vision in the right eye for 5 days. The patient is medically free and does not have any risk factors for developing CSCR. He lost vision in the left due to penetrating injury 50 years ago. He had been using tadalafil 5 mg occasionally over 1 month prior to presentation. Best corrected visual acuity was 20/300, and there was no light perception in the right and left eyes, respectively. Examination of the right eye showed a clear cornea, with a deep and quiet anterior chamber. On dilated fundus examination of the right eye, asteroid hyalosis was noted along with an area of macular serous detachment (Fig. 1). Examination of the left eye showed band keratopathy and dense cataract with no view of the posterior pole. Enhanced depth imaging-optical coherence tomography demonstrated the presence of subretinal fluid, serous pigment epithelial detachment, and pachychoroid in the right eye (Fig. 2). Fundus fluorescein angiography illustrated a macular-leaking area in a smokestack appearance (Fig. 3). The diagnosis of CSCR was made, and the patient was asked to stop tadalafil. Follow-up after 3 months showed improvement in visual acuity to 20/30 and resolution of the subretinal and serous PDEs.

Discussion

Tadalafil (Cialis) is a PDE5 inhibitor used for erectile dysfunction. Tadalafil has the same overall systemic adverse event rate as sildenafil; however, the specific adverse events are different. For example, there is no significant difference in the incidence of headache, dyspepsia, nasal congestion, or nasopharyngitis between tadalafil and sildenafil, but tadalafil is linked to a higher rate of myalgia and back pain, as well as a lower rate of flushing, than sildenafil [4]. Ocular side effects of PDE5 inhibitors include conjunctival hyperemia, color vision changes, increased light sensitivity, and possibly nonarteritic anterior ischemic optic neuropathy [5]. In the present report, we describe a case of CSCR after starting tadalafil.

Two different factors caused by PDE5 inhibitors may cause CSCR: increased choroidal blood flow and increased choroidal thickness. PDE5 is not only found in smooth muscles but also present in retinal and choroidal blood vasculature [6]. The inhibition of PDE5 causes vasodilation and increase in retinal and choroidal vascular blood flow and permeability. Ultrasound Doppler demonstrated an increase in retinal and choroidal blood flow in healthy subjects [6]. This is potentiated by an increase in cyclic guanosine monophosphate and nitric oxide, which play an important role in ocular blood flow control [7]. Pulsatile ocular blood flow was also found to increase 2 h after the administration of sildenafil [8]. On the other hand, pachychoroid or increased choroidal thickness is an important part of the pathogenesis of CSCR, and sildenafil was found to be associated with increased choroidal thickness proven by measurement of the choroid by enhanced depth imaging-optical coherence tomography [9].

The prognosis of PDE5 inhibitors-induced CSCR is very good but can be variable. In the present case, upon discontinuation of tadalafil, the patient's symptoms and subretinal fluid resolved. Similarly, there are reported cases of the resolution of subretinal fluid following the discontinuation of sildenafil in CSCR [2, 10]. Interestingly, there are also reported cases of recurrence of CSCR following the resuming sildenafil [3, 10]. However, failure of the resolution of serous detachments after stopping sildenafil has also been observed [3]. It remains unclear if the resolution of CSCR after stopping PDE5 inhibitor is related to the discontinuation of the drug or part of the natural disease process. Nevertheless, the fact that CSCR may recur after resuming sildenafil or tadalafil (positive rechallenge) may favor the fact that these medications have a role in the disease pathogenesis and stopping them is an important part of the management.

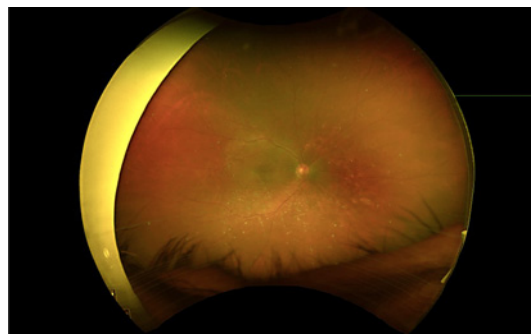


Fig. 1. An area of macular serous detachment is noted in the right eye.

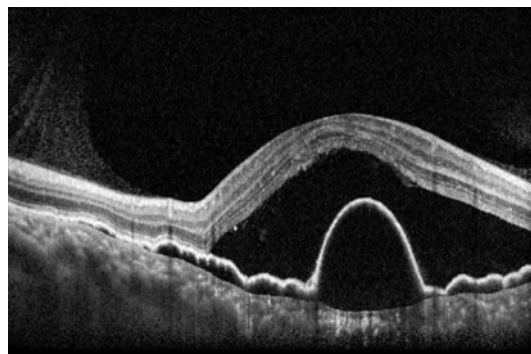


Fig. 2. Optical coherence tomography showing subretinal fluid and pigment epithelial detachment in the macula.

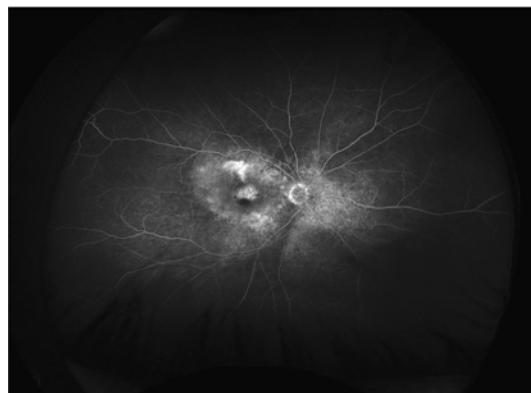


Fig. 3. Fundus fluorescein angiography illustrated a macular-leaking area in a smokestack appearance.

In conclusion, prescribing physicians and patients should be aware of tadalafil's ability to decrease vision and CSCR. The addition of CSCR to the list of tadalafil's side effects should be considered.

Statement of Ethics

Ethical approval is not required for this study in accordance with local or national guidelines. Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Conflict of Interest Statement

None of the authors have any conflicts of interest.

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Author Contributions

All the authors attest that they meet the current ICMJE criteria for authorship. Abdulaziz Alsarhani drafted and revised the manuscript. Motazz Alarfaj and Hamad Alsubaie provided clinical evaluation of the subject and reviewed the manuscript. Khalid Alhoutan provided revisions to the manuscript. All the authors read and approved the final manuscript.

Data Availability Statement

All data generated during the study are included in this article. Further inquiries can be directed to the corresponding author.

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