

Letrozole Induced Central Serous Chorioretinopathy: A Rare Case Report.

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Abstract

Title: Letrozole induced central serous chorioretinopathy- a rare case report. **Purpose:** To report a case of letrozole induced central serous chorioretinopathy. **Methods:** This is a case report. **Results:** A 59 years old female presented with diminished vision in right eye. On examination she had central serous chorioretinopathy in right eye and was not responding to anti VEGF and treated with focal laser. **Conclusion:** Letrozole induced central serous chorioretinopathy has not been reported before. It may be prudent for oncologist to have an ophthalmology consultation for their patients on letrozole to understand whether this is indeed rare or under reported.

Keywords: Central Serous Chorioretinopathy; Letrozole; Focal Laser.

Introduction

Central serous chorioretinopathy is a relatively common retinal disease characterized by the accumulation of subretinal fluid at the posterior pole of the fundus, creating a circumscribed area of serous retinal detachment [1]. It typically affects young and middle-aged men with no previous medical or family history and no systemic symptoms or signs. However, it has been noted that central serous chorioretinopathy is associated with different conditions, well known is exposure to corticosteroids. Tamoxifen a selective estrogen receptor modulator (SERM) is the commonly used drug in breast cancer [2]. In recent years in order to reduce the tamoxifen related ocular side effects aromatase inhibitors (AIs) such as anastrozole, letrozole, and exemestane have been increasingly prescribed to postmenopausal breast cancer patients as adjuvant endocrine therapy [3]. We present a case of central serous chorioretinopathy in a breast cancer patient treated with letrozole.

Case report

A 59 years old female, average built and nourished, complained of seeing black spots in front of her right eye for a few days. Her best corrected vision was 6/18 in the right eye and 6/6 in the left eye. Anterior segment was normal, and dilated fundus evaluation revealed bilateral drusen with right eye sub retinal fluid (SRF). The sub retinal fluid with drusen in right eye was confirmed and quantified using optical coherence tomography (OCT). Diagnosed as wet age related macular degeneration and one dose of intra vitreal injection ranibizumab 0.5mg/0.05 ml was given. After a month no reduction in SRF was noted in OCT. Fundus fluorescein angiography with indocyanin green angiography was done whose features suggestive of central serous chorioretinopathy. Based on angiography findings focal laser was done in right eye. On follow up, one month after laser reduction in SRF was noted in OCT.

Discussion

Drug-induced CSCR is well established, but treatment with AIs leading to CSCR has not been reported. SERMs like tamoxifen are well known for their ocular side effects like dryness, cataract, crystalline retinopathy and macular edema [4]. AIs like anastrozole have been shown to be associated with retinal hemorrhages which may be the result of excessive traction on the retina, caused

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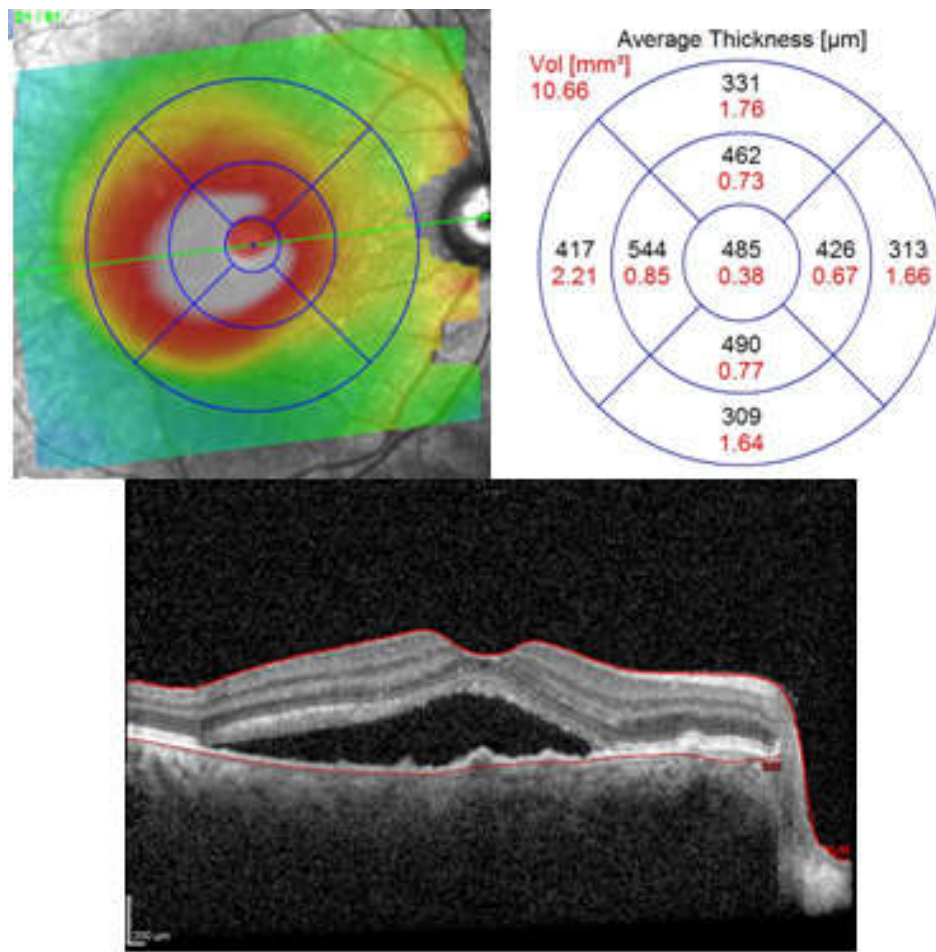


Fig. 1: OCT of the patient showing subretinal fluid before focal laser.

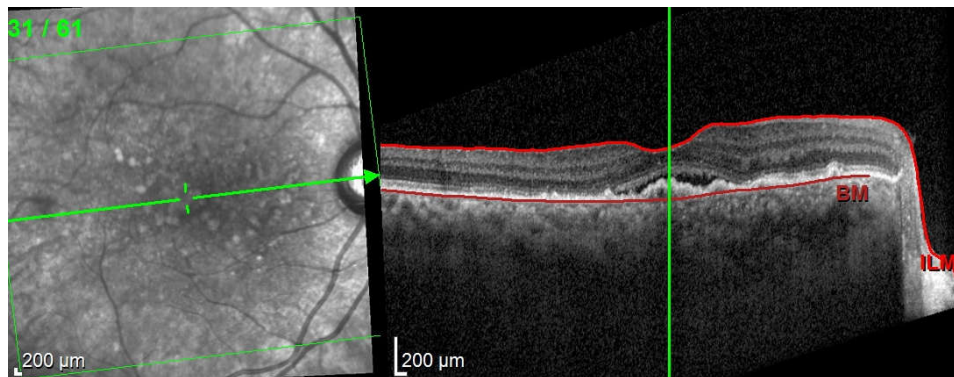


Fig. 2: OCT of the patient showing resolving subretinal fluid after focal laser.

by estrogen depletion and associated age related posterior vitreous detachment [5]. However, to the best of our knowledge, AIs use has never been associated with CSCR in the past. Letrozole is commonly used in infertility treatment. In recent years AIs have been increasingly prescribed to postmenopausal breast cancer patients as adjuvant endocrine therapy, sometimes after two to three years of tamoxifen treatment [6]. Our patient had four cycles of chemotherapy (paclitaxel 120 mg) followed by oral letrozole 2.5 mg for the past

three years. Estrogen receptors alpha and beta are expressed in retinal pigment epithelium, neurosensory retina and choroid. So estrogen has neuro protective effect in retina which will be lost by inhibitors of estrogen synthesis like aromatase inhibitors [7]. It is proven that letrozole and bevacizumab have synergistic effect in breast cancer treatment [8]. The mechanism is letrozole inhibits estrogen synthesis which is responsible for angiogenesis and bevacizumab mediated anti angiogenesis effect [9]. So neovascularisation is

halted in the tumour. But the same synergistic effect in retinal new vessels has not been studied. This synergistic effect of ranibizumab and AIs in CSCR is not supported in our patient. Further studies about Anti VEGF in AIs induced CSCR may fill the gaps of knowledge about treatment issues and may ultimately change the approach to the treatment.

Conclusion

In conclusion, we report a very rare case of letrozole induced CSCR in a post menopausal woman who did not respond to ranibizumab but responded to focal laser. It may be prudent for oncologist to have an ophthalmology consultation for their patients on AIs to understand whether this is indeed rare or under reported. In addition, patients may also be warned to get ophthalmic consultation if they experience blurred vision or dark spots.

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Key Messages: Drug-induced central serous chorioretinopathy (CSCR) is a well-established entity. We report a rare case of central serous chorioretinopathy in a breast cancer patient who is on treatment with letrozole a aromatase inhibitor. Letrozole associated CSCR was not responding to anti VEGF and subsequently treated with focal

laser. To the best of our knowledge, this is the first case report of letrozole induced CSCR.

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