OPTICAL COHERENCE TOMOGRAPHY STUDY IN TAMOXIFEN MACULOPATHY

MACULOPATÍA POR TAMOXIFENO. ESTUDIO MEDIANTE LA TOMOGRAFÍA DE COHERENCIA ÓPTICA

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ABSTRACT

Case report: We describe the case of a patient who presented with progressive and bilateral loss of vision. She had been treated with tamoxifen for 13 years. We performed fluorescein angiography and optical coherence tomography in order to study the macula.

Discussion: Loss of visual acuity related to tamoxifen maculopathy may be caused either by retinal nerve fibre atrophy or macular oedema. Macular findings obtained by fluorescein angiography and optical coherence tomography are complementary (Arch Soc Esp Oftalmol 2008; 83: 615-618).

Key words: Tamoxifen maculopathy, fluorescein angiography, optical coherence tomography.

INTRODUCTION

Tamoxifen is a drug having anti-estrogen effect frequently used as a coadjuvant treatment in breast cancer. Ocular alterations at the cornea, retina and optic nerve have been described with this drug, even utilizing low doses (1). In general, it is estimated that the ocular toxicity prevalence caused by tamoxifen is low (2). Patients suffering loss of vision in relation to tamoxifen usually exhibit whitish-yellowish crystal deposits in the nervous fiber and internal layers of the retina (3). In these cases, a fluorescein angiography (FA) study is useful because it frequently identifies the presence of
macular edema. In addition, it has recently been observed that a supplementary study of the macula in these patients by means of Optical Coherence Tomography (OCT) can provide anatomical details not evidenced by FA (4,5). Treatment of tamoxifen maculopathy consists in discontinuing its use, upon which some patients exhibit improved vision.

**CASE REPORT**

A 53 year-old female diagnosed with breast cancer in June 1992. She underwent a radical mastectomy and tamoxifen was prescribed at a dosage of 20 mg/d, which she took regularly for 13 years (aggregate dose 95 g). During the last year of use of tamoxifen she exhibited a progressive loss of bilateral vision. The ophthalmological assessment made 6 months after the onset of symptoms revealed a visual acuity (VA) of 0.6 and 0.4 in the right eye (RE) and left eye (LE), respectively. Intraocular pressure and biomicroscopic exploration were normal. The eye fundus showed the presence of multiple whitish-yellowish spots dispersed in both posterior poles, involving both foveae (fig. 1). A FA study was made, evidencing the presence of slight bilateral macular edema (fig. 2). The OCT study showed a single foveal cyst with focal disruption of the photoreceptor line without increased macular thickness in RE and reduced foveal thickness in the LE (fig. 3).

The differential diagnostic was mainly based on the dominant drusen and the fundus albipunctatus. The patient did not refer premature vision loss in any of her forbearers and did not exhibit a significant deposit of crystals on the nasal side of the optic nerve, the typical area of involvement in dominant drusen cases. In addition, she did not refer nycatalopia and the scotopic function of the electroretinogram was normal. The photopic function of the left eye was slightly depressed, with the elec-

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**Fig. 1:** Bilateral retinography. Multiple whitish-yellowish spots dispersed on both posterior poles.

**Fig. 2:** Bilateral fluorescein angiography showing slight fluorescein loss in both foveae.
troculogram being normal in both eyes. The patient was diagnosed with tamoxifen retinopathy and recommended to discontinue the use of the drug. Twelve months after discontinuation her VA improved slightly only in the RE, reaching 0.75. Since then and after 2 years of follow-up her VA has remained stable. During said period the OCT pattern as remained unchanged.

**DISCUSSION**

The study of tamoxifen maculopathy has usually been made via eye fundus exploration and fluorescein angiography. The instant case only had the eye fundus and FA and would have involved a diagnostic of slight bilateral macular edema but the OCT allowed a more detailed observation of the macular pathology. Therefore, as observed by Gualiano et al (4) and Bourla et al (5), there isn’t always a correspondence between angiographic evidence of macular edema and the presence of said edema via OCT. Consequently, we believe that OCT, as a supplement to FA can provide anatomical details of the macula which confirm with greater certainty the visual symptoms and may assist in establishing a visual prognosis for these patients. In our case a visual improvement was observed 12 months in the eye with the foveal cyst (RE) after discontinuing the use of the drug. This was not the case in the eye with established foveal atrophy (LE). More tamoxifen maculopathy cases analyzed with OCT need to be published in order to determine the different macular patterns and their corresponding visual prognosis.

**REFERENCES**


![Fig. 3: Bilateral OCT showing a foveal cyst with disruption of the photo receptor line in RE and foveal atrophy in the LE.](image-url)