

Jaqueline Azevedo Leão<sup>1</sup>; Maria Leticia Lasca Sales Campos<sup>1</sup>; Leonardo Amarante Pereira<sup>1</sup>; Cristina Nery Carbajo<sup>1</sup>; Gregório Daniel Pepeliascov<sup>1</sup>; Gabriel Aguiar dos Santos; Julio Zaki Abucham Neto<sup>1</sup>.

<sup>1</sup>Ophthalmology Department, Centro Universitário FMABC, Santo André, Brazil.

✉ jaquelineleao22@gmail.com

## INTRODUCTION

The cilioretinal arteries (CILRAs) prevalence is uncertain in most studies, usually between 8,7% and 29,6%, but in fluorescent angiography studies may reach 49%.<sup>1,2,3</sup> These are a branch of short posterior ciliary arteries and goes through the temporal optic disc. The CILRA and choroidal vessels presents simultaneous capillary filling and are independent regarding the central retinal artery (CRA).<sup>4</sup>

Central retinal artery occlusion (CRAO) has uncommon incidence, a maximum of 10 in 100.000. Cilioretinal artery occlusion (CILRAO) represents about 5% to 7% of retinal artery occlusion (RAO) types, therefore even more unusual.<sup>4,5</sup>

CRAO with CILRA sparing may preserve central vision, however, in our case we will describe an isolated CILRAO, which can result in transient visual loss and good visual prognosis.

## CASE REPORT

A 34-year-old woman, black skin, came to ophthalmology emergency room with scotoma in the left eye (LE), described as a gray spot in her vision within three days, combined to temporal visual field changes. The clinical condition began two weeks ago with transient vision lost in LE.

Visual acuity (VA) was 20/20 in the right eye (RE) and was 20/20 in the LE, partially, once she had only nasal visual field. The patient had no previous story of ophthalmologic diseases. She had no previous story of smoking or alcohol consumption. She had breast cancer diagnosis one year ago, undergoing chemotherapy treatment.

The biomicroscopy showed no findings. The exam had none afferent pupillary defect. Intraocular pressure (IOP) was 12mmHg in the RE and was 16mmHg in the LE. The funduscopy showed no changes in RE, but LE shows the following findings: ischemic area of papillomacular bundle, scattered retinal hemorrhages in the superotemporal and inferior arcade and increased vascular tortuosity (Image 3).

Complementary tests performed were: Retinal imaging, Optical coherence tomography (OCT), Fluorescein angiography and Brain Computed Tomography Scan (CT).

The findings in the LE are: OCT visualizes one hyperreflective band compatible with the nasal ischemia (Image 1); fluorescein angiography has unveiled no ischemic areas (Image 4).

CT scan ruled out any orbital or brain masses wich could cause retinal vessels congestion.

A month later, the patient came back for a new clinical evaluation and exhibited normal VA. OCT exposed normal retinal pattern in the foveal area, no edema, although presented thinning of the inner retinal layers in macular nasal region, thus, kept expectant management.

## DISCUSSION

The CILRAO pathophysiology remains unclear on medical literature, nevertheless, consisting of: isolated CILRAO or combined with CRAO or CILRAO associated with anterior optic ischemic neuropathy.<sup>6</sup> It is worth mentioning that comparing to CRAO, it has no protecting mechanisms against changings in the blood flow.<sup>7</sup>

There are many possible CILRAO etiologies, such as: hypertension, arrhythmia, dyslipdemia, vasculitis, migraine, hemoglobinopathies, pregnancy, thrombophilia, thromboembolism and hypercoagulability conditions.<sup>8</sup> In this reported case, it is possible to relate the use of chemotherapy with some increased susceptibility to an CILRAO event since there were described CILRAO cases of patients ongoing chemotherapy treatment with aromatase inhibitors.<sup>9</sup>

## DISCUSSION

The diagnosis can be made by anamnesis and clinical eye examination consistent with central scotoma wich can be seen as ischemic retinal area combined to vascular tortuosity and arteriolar dilatation, as well as hemorrhage and hard exsudates. Furthermore, OCT may demonstrate edema, ichemia and internal layers nasal zone enhancement, despite of external layers preservation. The fluorescein angiography helps to set the extent of involvement compatible to a contrast flow blockage in the same area

Generally, this clinical presentation has good prognosis due to the scotoma disappearance, reflecting on progressive VA gain.<sup>6,10</sup> The prognosis is associated to the foveal involvement corresponding area<sup>11</sup>, that being in the case the patient had a good outcome since showed only nasal macula involvement. OCT evaluation was performed again a month after the first one, wich presented vanishing of the initial findings, such as the hyperreflectivity and the papillomacular bundle nasal fibers enhancement, compatible to clinical improvement (Image 2).

The CILRAO treatment is poorly explored, since those are not effective and the natural progression of disease is relatively benign.

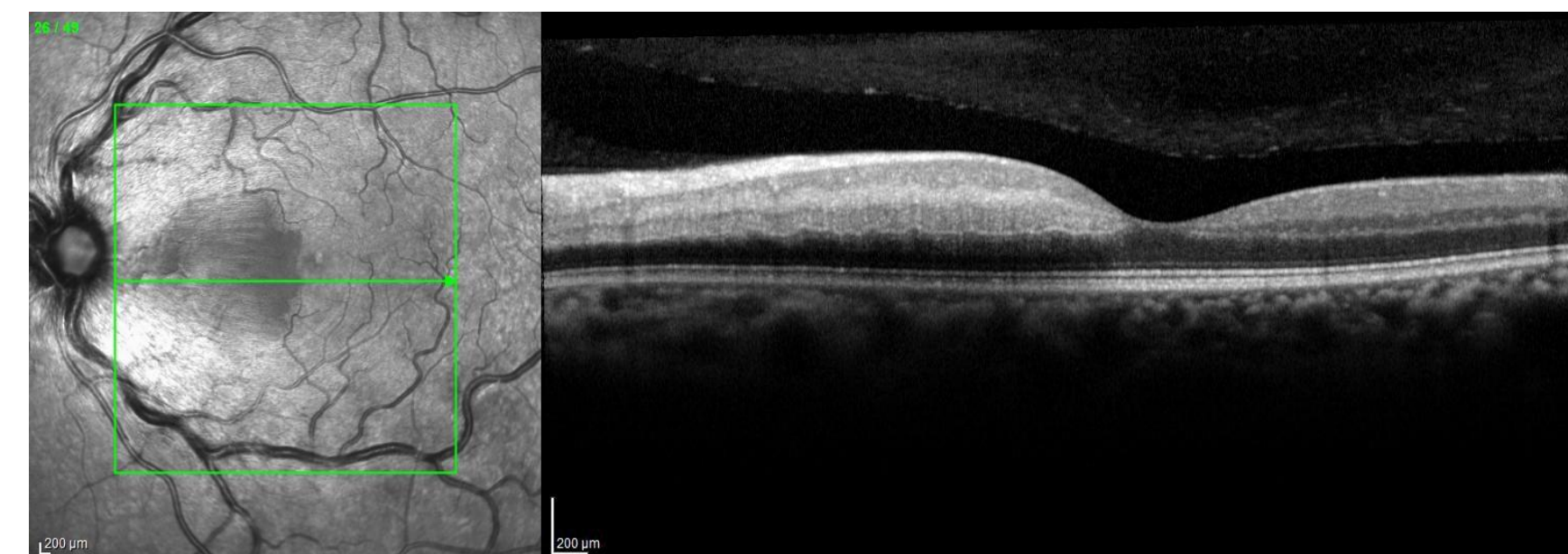


Image 1: OCT's LE visualizes one hyperreflective band compatible with the nasal ischemia

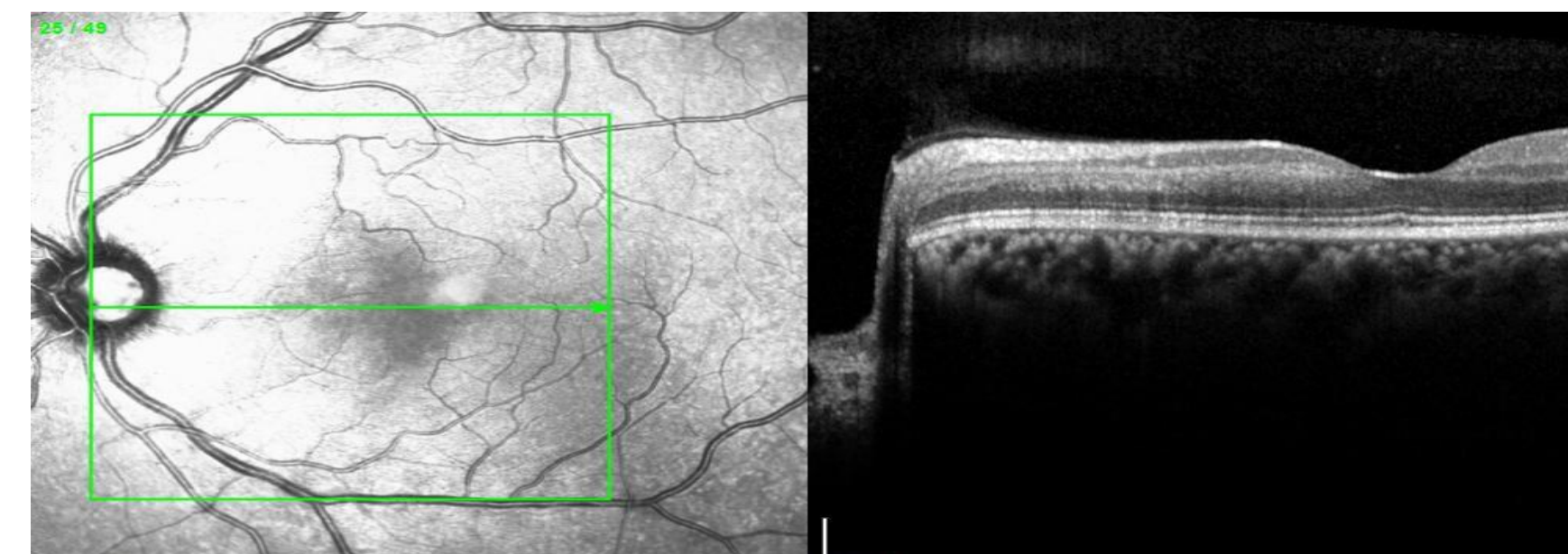


Image 2: OCT's LE after a month presented vanishing of the initial findings, such as the hyperreflectivity and the papillomacular bundle nasal fibers enhancement, compatible to clinical improvement

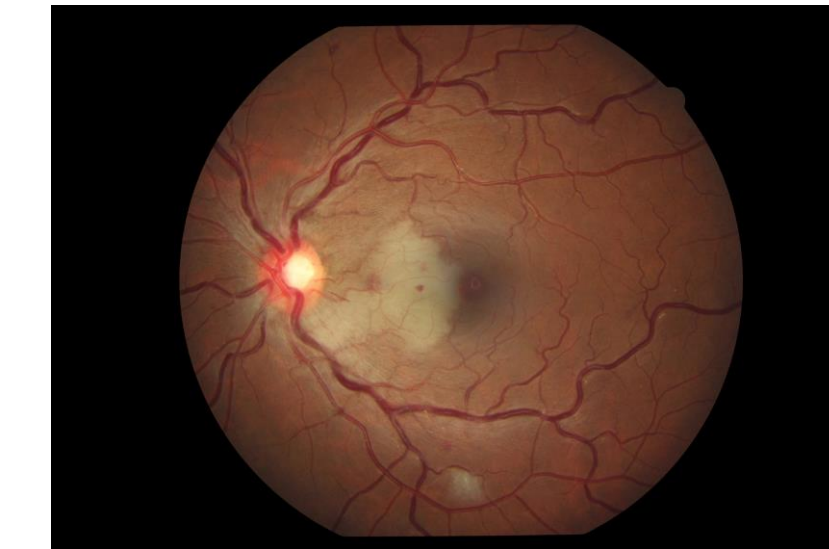


Image 3: LE's funduscopy shows the following findings: ischemic area of papillomacular bundle, scattered retinal hemorrhages in the superotemporal and inferior arcade and increased vascular tortuosity

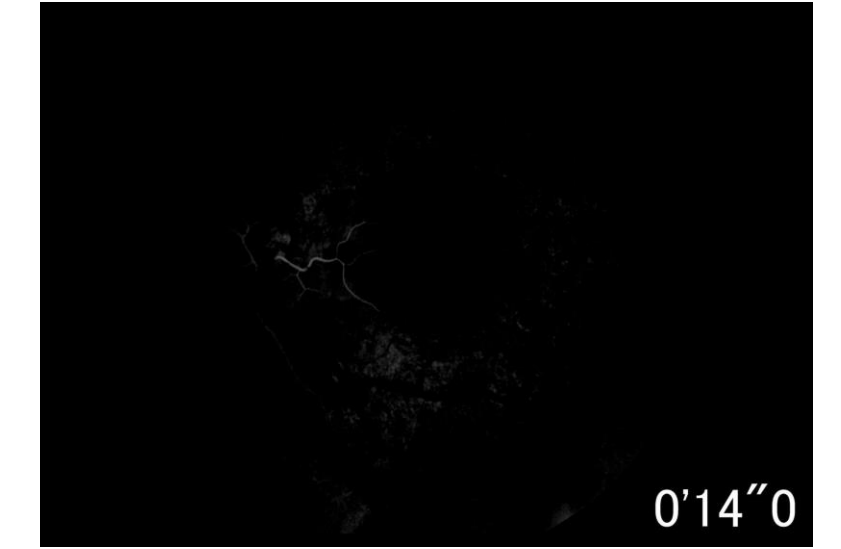


Image 4: LE's fluorescein angiography has unveiled no ischemic areas

## CONCLUSION

Therefore, it is notable that there is difficult to establish the proper cause and pathophysiological mechanism of the patient's CILRAO, we can only imply. Thus, new studies are important to serve as a foundation to assessment of future cases. Moreover, the good prognosis stands out, which was noticed in this case related, that was unveiled with improvement of the initial changes in retinography and OCT tests.

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