Case report

Unilateral acute idiopathic maculopathy secondary to yellow fever disease: a case report

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ABSTRACT

Purpose: To report a case of unilateral acute idiopathic maculopathy (UAIM) associated with yellow fever.

Observations: A 59-year-old man presented with acute blurring of his vision 30 days after symptoms of yellow fever virus infection. Findings resembling unilateral acute idiopathic maculopathy of the left eye were noted on ophthalmoscopy, fluorescein angiography and optical coherence tomography. The right eye exam was normal.

He was managed conservatively and recovered complete visual function in 8 weeks.

Conclusions: We describe a case of unilateral acute idiopathic maculopathy disease in a patient infected by yellow fever virus confirmed with reverse transcriptase polymerase chain reaction (RT-PCR).

1. Introduction

Unilateral acute idiopathic maculopathy (UAIM) is an inflammatory disease involving the outer retina and retinal pigment epithelium (RPE) of the macula. It was firstly described by Yanuzzi et al. (1991) in a series of 9 patients with serious visual loss, macular serous detachment and a central scotoma. This disease frequently affects young, healthy individuals and is often associated with a prodromal flu-like illness. The prognosis of UAIM is generally good with spontaneous resolution within several weeks to months, leaving a characteristic “bull’s-eye” appearance in the macula. There is no previously reported case of UAIM associated with Yellow Fever.

Yellow Fever (YF) is a viral hemorrhagic fever caused by Flaviviridae. It is transmitted by a bite of a previously infected mosquitoes of Aedes aegypti and Haemagogus spp.. The incubation period after the bite of an infected mosquito is 3–6 days. The clinical findings varies from a non-specific, abortive illness to a fatal hemorrhagic fever. Disease onset is typically abrupt with fever, chills, malaise, headache, lower back pain, generalized myalgia, nausea and dizziness is usually self-limited, and recovers in 17 ± 8 days. Molecular biology tests such as ELISA for YF virus-specific IgM or isolation of the virus from blood samples are the recommended standard diagnostic tests for YF. There is no cure treatment, but clinical support is often necessary to prevent systemic shock.

Our aim is to report a case of UAIM associated with acute YF virus infection.

1.1. Case report

A 59-year-old healthy Brazilian man who recently travelled to an YF endemic zone in Sao Paulo developed high fever, vomits, jaundice and myalgia for 10 days. Based on the primary diagnostic hypothesis of YF acute infection, the patient was treated with symptomatic medication. Eventually, the positive results of RT-PCR and IgM antibodies ELISA test for YF on blood samples 8 days after the onset of symptoms confirmed this virus infection.

Three weeks after hospital discharge, the patient self-referred to the Santa Casa de São Paulo Ophthalmic Emergency Department for 20 days of vision loss in his left eye (OS).

At the initial examination, his best-corrected visual acuity (VA) was 20/20 in the right eye (OD) and 20/70 in the OS, and the anterior segment was normal in both eyes. The fundus examination revealed a temporal nevus in the OD and a deep gray circular lesion at the macular area in the OS (Fig. 1).

Also, a fundus autofluorescence (FAF) was performed and OS’ macula disclosed a hyperautofluorescence that corresponded to the areas of RPE changes surrounding by an irregular ring of hypoautofluorescence. (Fig. 2).

OS’ fluorescein angiogram (FA) revealed a central area of irregular hypofluorescence that corresponded to the areas of RPE changes surrounding by a hyperfluorescence margin, followed by late staining of...
the lesion (Fig. 3). There was no leakage. Also, optical coherence tomography (OCT) demonstrated hyperreflective debris on the apical side of RPE and disruption of ellipsoid layer, the external limiting membrane was preserved (Fig. 4). The OD showed no evidence of subclinical maculopathy (Fig. 2).

After a 2 weeks subsequent follow-up, the patient’s symptoms have partially improved even though no specific treatment for the maculopathy was given. Best-corrected VA at the OS improved to 20/40, the fundus examination was unchanged and the OCT showed minimal subretinal fluid and some granular hyperreflections at the posterior retinal surface and before RPE (Fig. 5).

Two months following the initial presentation, VA was spontaneously recovered to 20/20 in the OS. Fundus examination revealed an epithelial hyperpigmentation nearby an irregular ring of hypopigmentation at foveal area. OCT examination demonstrated partial resolution of hyperreflectivity from the RPE. Sparse points of hyperreflective debris in neurosensory retina and persistent disruption of ellipsoid layer were noted. FAF showed that the hyperautofluorescence area became more hypoautofluorescent (Fig. 6).

In addition, findings in the right eye remained unremarkable during the follow-up examination.

2. Discussion

In this case report the patient present with the circular area of mild white-gray discoloration of the central macula, the outer retinal and RPE anatomic change with disruption of the inner segment outer segment layer and deposition of debris hyperreflective subretinal material on OCT were consistent with UAIM.6 The autofluorescence showing the shift from hyperautofluorescence to hypoautofluorescence in the disease course, the early hypoautofluorescence with irregular late central staining on angiogram and spontaneous recovery of 20/20 vision were also consistent with UAIM.6 These ocular findings and the associated viral prodrome, suggesting a viral etiology are typical of UAIM.1,2 There are few previously reported cases of UAIM caused by Coxsackievirus infection.7 However, in this case there was a cause effect evidence of Flavivirus febrilis as an etiologic agent.

To our knowledge, this is the first case describe of UAM in an adult with Yellow Fever infection laboratory confirmed with RT-PCR and IgM antibodies by ELISA. The case strongly suggests that Yellow Fever, like other viruses, may be associated with maculopathy consistent with UAIM. Yet it is uncertain whether the ocular manifestation in this case was resulting from direct viral infection of RPE cells or is an immune mediated reaction.

3. Conclusions

Further information on the natural history and prognosis of YF is needed. In the meantime, Yellow Fever should be considered in patients with UAIM. We recommend increased vigilance for YF infection in patients who present with ocular symptoms shortly after a viral fever in
endemic areas for the virus and early ophthalmologic screening.

3.1. Patient consent

Consent to publish the case report was not obtained. This report does not contain any personal information that could lead to the identification of the patient.

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Conflicts of interest

The following authors have no financial disclosures: RCD, ACFLA, RPAM, MAMF, HYK, JCTC.

Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ajoc.2019.100464.

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