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Case Report

Tuberculous Uveitis after Phacoemulsification and the Challenge of Etiological Diagnosis: Case Report

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Abstract

Purpose: Tuberculosis can primarily target lung tissue, but in the disseminated form, it can affect any organ, including the eye. The incidence in these cases is around 1 to 2%, however, there is no reliable data to prove these findings The common manifestations of tuberculous uveitis include choroiditis/chorioretinitis, choroidal mass, macular edema, panophthalmitis, anterior chamber reaction, in which diagnosis should be presumed based on the recurrence of TB cases in developing countries.

Methods: The present case reports a female patient, 64 years old, diabetic and hypertensive, who presented low visual acuity in oculus uterque, associated with photophobia after a facectomy. Visual acuity with correction was: right eye 20/50 and left eye 20/100. Slit Lamp: right eye with hyperaemia, anterior chamber +/4 + reaction, intraocular lens centered. Left eye with hyperemia, AC reaction ++/4+, IOL centered with various imprints. Eye fundus: decreased macular glow oculus uterque. Laboratory tests showed C-reactive protein: 2.4 mg/dL, Erythrocyte sedimentation rate: 16 mm and tuberculin test (PPD): 23 mm/72 h. The patient did not had the BCG vaccine scar. After 4 months of treatment, the patient presented no complaints, corrected OD 20/20 and OS 20/25.

Conclusion: The diagnosis of ocular TB is by exclusion so the ophthalmologist must pay attention to cases of difficult-to-resolve uveitis, in which there is no response to conventional treatment.

Keywords: *Uveitis; Tuberculosis; Macular Edema; Phacoemulsification*

Abbreviations

TB: Tuberculosis; PPD: Purified Protein Derivative Skin Test; LVA: Low Visual Acuity; OU: Oculus Uterque; OS: Left Eye; OD: Right Eye; VA: Visual Acuity; AC: Anterior Chamber; IOL: Intraocular Lens; FA: Angiofluoresceinography; ESR: Erythrocyte Sedimentation Rate; PCR: C-Reactive Protein; RIPE: Rifampin, Isoniazid, Pyrazinamide and Ethambutol

Introduction

Tuberculosis (TB) is an infectious bacterial disease caused by Mycobacterium tuberculosis that can affect many sites, including the eye. Its main route of ocular dissemination is hematogenic. It is known that ocular tuberculosis may involve any ocular tissue and that, not necessarily, there should be evidence of pulmonary TB. Approximately 60% of patients with extrapulmonary tuberculosis do not present

evidence of pulmonary tuberculosis, for example. It should be noted that the incidence of ocular TB is uncertain due to the lack of well-defined diagnostic criteria and difficulties in obtaining the microbiological diagnosis [1-3].

The most common ocular complaints described are low visual acuity, ocular hyperemia, ocular pain, photophobia and tearing. Patients may exhibit a wide variety of clinical signs. In addition, the disease may mimic several clinical entities. Ocular involvement commonly manifests as uveitis and has been reported in up to one-fifth of patients with cultured TB [4]. Despite this, there are no specific clinical features that suggest tuberculous uveitis, on the contrary, there is a wide range of manifestations. Thus, tuberculous uveitis is considered an under-diagnosed form of uveitis [5-7].

The common manifestations of tuberculous uveitis include choroiditis/chorioretinitis, choroidal mass, macular edema, panophthalmitis, anterior chamber reaction, multifocal choroidal tubercles, endophthalmitis, serpiginous-like choroiditis, subretinal abscess, neuroretinitis and retinal vasculitis [8].

Establishing the diagnosis of intra-ocular TB is a clinical challenge. The large variations in clinical presentation and lack of uniformity in diagnostic criteria in the absence of histopathologic or microbiologic evidence make the diagnosis of tubercular uveitis difficult. The diagnosis is often presumed, in view of a uveitis of etiology to be clarified accompanied by the absence of improvement with treatment, a history of positive contact and positive PPD. Gold standard tests are not useful most of the time [9].

Purpose of the Study

At the present study we describe a hard case of post-phacoemulsification tuberculous uveitis and the challenge of etiologic diagnosis.

Case Report

A 64-year-old female patient, hypertensive and diabetic, complaining of low visual acuity (LVA) in oculus uterque (OU), that was more pronounced in the left eye (OS), associated with photophobia. Previous history of facectomy in the right eye (OD) 2 months ago and in OS 3 months ago. Since then, it evolved with ocular hyperemia and progressive LVA. The patient was in use of topical corticosteroids on their own, after unsuccessful withdrawal attempts by the ophthalmologist. Visual acuity (VA) with correction was: OD 20/50 and OS 20/100. Intraocular pressure: OD 11 mmHg and OS 11 mmHg. Slit Lamp: OD hyperaemia, anterior chamber (AC) +/4 + reaction, intraocular lens (IOL) centered. OS hyperemia, AC reaction ++/4+, IOL centered with various imprints. Eye fundus: decreased macular glow OU. Angiofluoresceinography (FA), and laboratory tests were requested and prescribed propaedeutics 0.1% topical dexamethasone. FA: retinal vasculitis with capillary dilatation in OS (Figure 1). Laboratory tests showed PCR: 2.4 mg/dL, ESR: 16 mm and tuberculin test (PPD): 23 mm/72h. Patient denies any sign or symptom other than previous complaints. It denies immunization for childhood tuberculosis and does not show the BCG vaccine scar. Prolonged close contact with family member was reported, who died a year ago of pulmonary tuberculosis (TB). Initiated therapy and after 3 weeks of RIPE scheme there was improvement of symptoms. After 4 months of treatment, the patient presented no complaints, corrected OD 20/20 and OS 20/25, optically empty anterior chamber, unchanged eye fundus, and other propaedeutics without alterations (Figure 2).

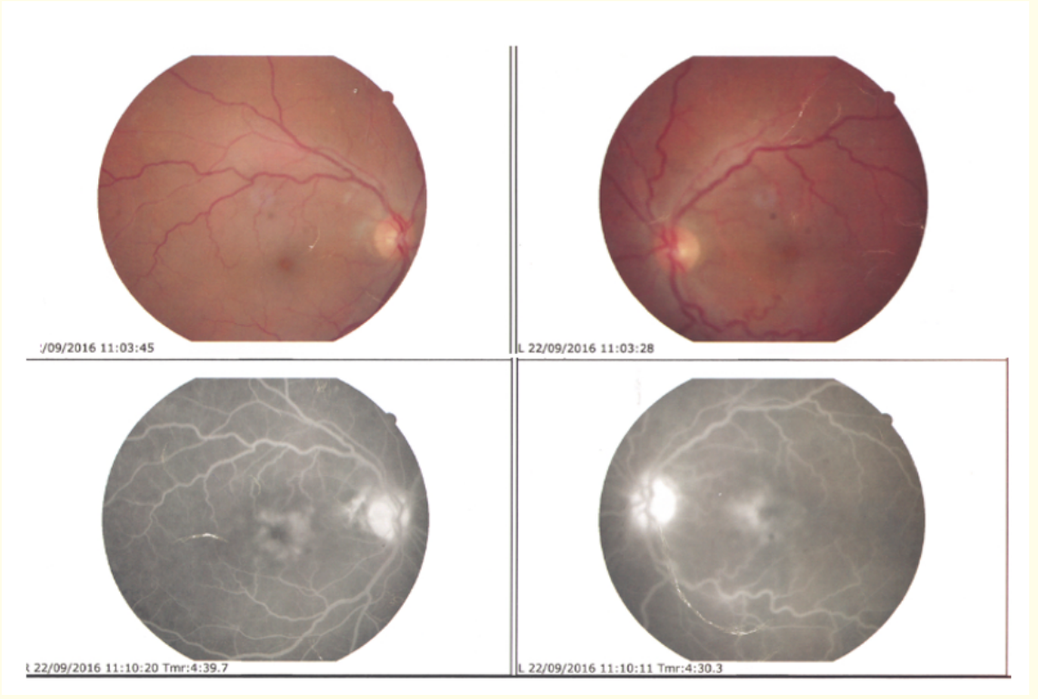

Figure 1: *OU angiofluoresceinography showing retinal vasculitis and macular edema.*

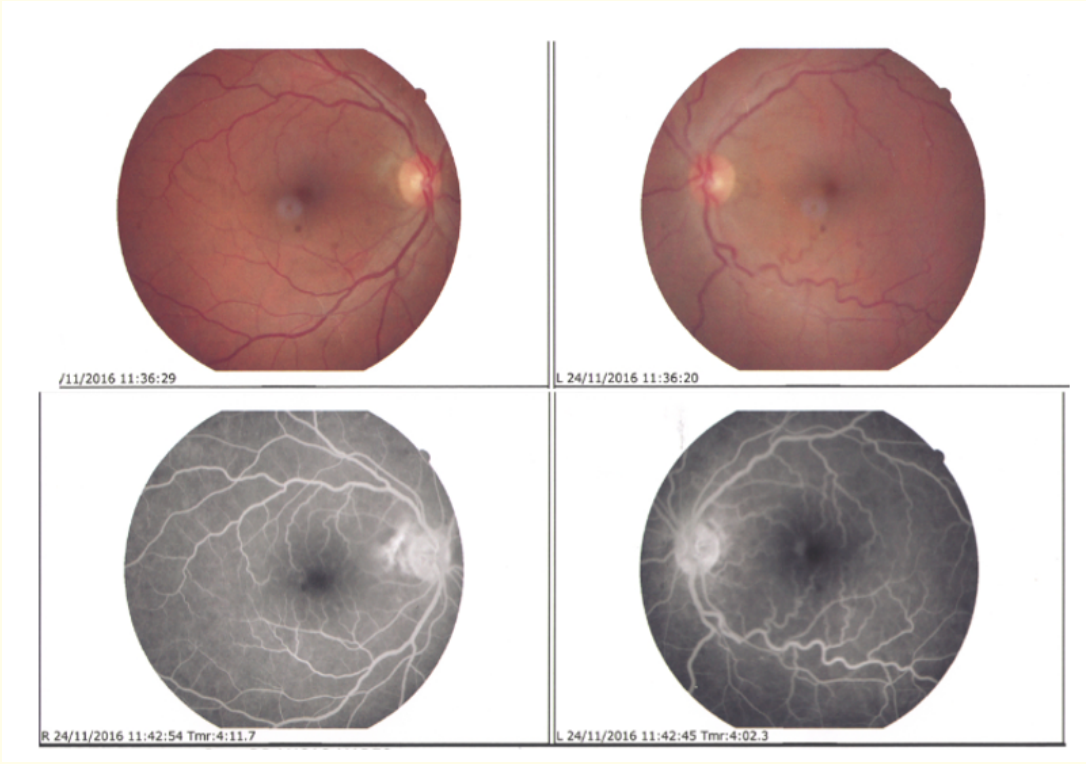

Figure 2: *Angiofluoresceinography after treatment.*

Discussion

In cases of postoperative uveitis it should be considered other etiological diagnosis. Syphilis and lymphoma are large plagiators that can cause macular edema accompanied by uveitis, as well as tuberculosis. Therefore, a laboratory investigation should be done for the differential diagnosis, considering that the signs and symptoms of intraocular tuberculosis are not specific [10,11].

The chronology of the case, low visual acuity after 2 and 3 months of phacoemulsification, the non-impregnation of the optic nerve at angiography and the history of uncomplicated surgery practically excludes the possibility of irvine-gass.

The diagnosis of ocular TB is often presumed, in view of a uveitis of etiology to be clarified accompanied by lack of improvement with treatment, history of positive contact, positive PPD. Clinical improvement after the indicated treatment reinforces the clinical suspicion. Diagnosis in a timely manner directly interferes with the prognosis.

Conclusion

Macular edema after phacoemulsification is a common event, however, in cases of post-operative uveitis, other etiologic diagnoses such as neoplasms, mechanical, inflammatory and infectious causes should be considered. The diagnosis and indication of treatment of ocular TB is a clinical challenge that requires good preoperative evaluation.

Conflict of Interest

The authors have no conflicts of interest to declare.

Bibliography

1. Oluleye TS. "Tuberculous uveitis". *Journal of Multidisciplinary Healthcare* 6 (2013): 41-43.
2. Alvarez S and McCabe WR. "Extrapulmonary tuberculosis revisited: a review of experience at Boston City and other hospitals". *Medicine* 63 (1984): 25-55.
3. Lauren A Dalvin and Wendy M Smith. "Intraocular manifestations of mycobacterium tuberculosis: A review of the literature". *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases* 7 (2017).
4. Agrawal R., *et al*. "For the Collaborative Ocular Tuberculosis Study Group. Global variations and challenges with tubercular uveitis in the Collaborative Ocular Tuberculosis Study". *Investigative Ophthalmology and Visual Science* 59 (2018): 4162-4171.
5. Sanghvi C., *et al*. "Presumed tuberculous uveitis: diagnosis, management, and outcome". *Eye* 25.4 (2011): 475-480.
6. Varma D., *et al*. "Tuberculosis: an under-diagnosed aetiological agent in uveitis with an effective treatment". *Eye* 20 (2006): 1068-1073.
7. Gupta A., *et al*. "Ocular signs predictive of tubercular uveitis". *American Journal of Ophthalmology* 149 (2010): 562-570.
8. M A El-Asrar A., *et al*. "Tuberculous uveitis". *Middle East African Journal of Ophthalmology* 16.4 (2009): 188-201.
9. Yeh S., *et al*. "Update on ocular tuberculosis". *Current Opinion in Ophthalmology* 23 (2012): 551.
10. Albert DM and Raven ML. "Ocular Tuberculosis". *Microbiology Spectrum* (2016): 4.
11. Helm CJ and Holland GN. "Ocular tuberculosis". *Survey of Ophthalmology* 38 (1993): 229.

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