

Bilateral Endogenous Fungal Endophthalmitis secondary to COVID-19 hospitalization

Rafael de Oliveira Sousa¹, Leandro Cesar Cotta², Douglas Henrique Teixeira³, Francielly Roberto Pires⁴, Pedro Augusto Parreira Monteiro⁵, Rafael Eidi Yamamoto⁶: 1-2-3-4. Intern physicians in the internship program of ophthalmology at Visão Hospital de Olhos, Brasília – Federal District. 5. Fellow ophthalmologist in the Retina service at Visão Hospital de Olhos, Brasília – Federal District. 6. Ophthalmologist and Director of the retina service at Visão Hospital de Olhos, Brasília-DF

INTRODUCTION

Endophthalmitis is a rare and severe intraocular infection which can be vision-threatening. The authors presents a case of a 70 year-old female patient that developed Bilateral Endogenous Fungal Endophthalmitis after a 30 days ICU hospitalization due to COVID-19.

CASE REPORT

A 70 year-old female patient were hospitalized due to COVID-19. During her 30 days ICU admission she was under mechanical ventilation, had a long term central venous catheter (CVC) insertion and was treated with global spectrum antibiotics and vasoactive drugs.

Three weeks after her hospital discharge she started developing bilateral ocular symptoms like eye pain and blurred vision. The patient reported visual acuity (VA) in Right Eye (RE) in the ophthalmologic examination by Light Perception (LP) and 20/60 in Left Eye (LE). In the biomicroscopy exam she had conjunctival injection, diffuse posterior synechiae with a fibrin membrane in the Anterior Chamber (AC) and Anterior Chamber Reaction (ACR) 3+ on the RE. The LE was white and quiet and she had nuclear cataract 2+ and 16mmHg Intraocular Pressure (IOP) in both eyes.

Funduscopy showed vitritis in both eyes, with important vitreous opacity and diffuse whitish plaques on the RE and whitish plaques on the posterior pole of the LE. OCT evidenced vitreous opacity in RE and inflammation showing increased retinal thickness with extension to the intraretinal layers and apparent extraretinal migration to the vitreous in LE (Figure 1). Pars plana posterior vitrectomy (PPV) was conducted in the left eye to collect material for further exams; balanced saline solution was used as vitreous substitute. Amphotericin B (5 mcg/0.1 ml) intravitreal injection was performed, in addition to dexamethasone (400 µg/0.1 ml), at the end of the surgical procedure. Posteriorly PPV was conducted in the right eye with lensectomy and membranectomy for vitreoretinal proliferation removal and heavy silicone oil was used as a long-term endotamponade agent. Amphotericin B (5 mcg/0.1 ml) intravitreal injection was performed, in addition to dexamethasone (400 µg/0.1 ml), at the end of the surgical procedure. The assistant expert in infectious diseases evaluated the patient and suggested using fluconazole 450mg/day orally for 4 weeks. Direct bacterioscopic and mycological examinations results and collected vitreous cultures were positive for *Candida albicans*.

Unfortunately the patient evolved with a close funnel retinal detachment in the RE and decided not to intervene again due to the bad visual prognosis. On the LE she reported 14mmHg IOP, absence of ACR, and progressive reduction in vitreous opacity and in the size of funduscopic lesions and OCT showed full edema regression after the PPV, 30 days after surgery (Figure 2).

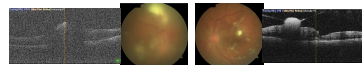


Figure 1.

The patient reported Best Visual Corrected Acuity (BVCA) of LP RE and 20/20 LE 60 days after the surgical procedure in both eyes.

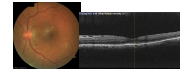


Figure 2.

DISCUSSION

Endophthalmitis is one of the most severe complications among ophthalmic disorders; it accounts for the worst functional outcomes. Endogenous endophthalmitis responds for 2% to 15% of all endophthalmitis cases and is the cause of hematogenous spread of distant focus. *Candida albicans* is the most common etiologic agent related to endogenous fungal endophthalmitis. With respect to the here described case, endophthalmitis is assumed as a candidemia complication, since the patient was previously hospitalized because of COVID-19 and treated with broad-spectrum antibiotics. She had a central venous catheter during hospitalization, a fact that corroborates the emergence of endogenous endophthalmitis.

Endophthalmitis diagnosis is clinical and confirmed through positive aqueous or vitreous culture. However, negative culture does not exclude the diagnosis because this outcome can happen in up to 30% of cases. As for the current case report, the presumptive diagnosis of endogenous fungal endophthalmitis by *Candida albicans* was based on the patients previous pathological history, on ocular clinical case and on classical retinal manifestation. Empirical treatment was promptly prescribed: intravitreal amphotericin B injection, systemic antifungal with oral fluconazole and pars plana vitrectomy. Despite our best efforts the patient evolved with BCVA of LP on the RE due to a close funnel retinal detachment. Differently 20/20 on the LE after prompt and aggressive treatment.

Because of the rapid advance of medical technology, a longer life span of patients with chronic diseases and a rising prevalence of long-term intravenous access, the disease may become more common in clinical practice. It is important that the physicians are aware of Endogenous Endophthalmitis because early diagnosis and prompt aggressive treatment are imperative if vision loss is to be avoided.

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