Commentary: A case of endogenous candida endophthalmitis with incidental cytomegalovirus infection and optic neuropathy in a patient recovered from severe COVID-19

Endogenous endophthalmitis is a sight-threatening intraocular inflammation. Though uncommon, it accounts for 2%–16% of all endophthalmitis cases. Endogenous endophthalmitis can have devastating effects on the patient’s eye and vision. Candida albicans is the most common causative pathogen isolated in these patients.

Wise et al. reported a case of mixed endogenous endophthalmitis but with aspergillus and CMV retinitis following kidney transplantation as early as 1988.

Similarly, a case of a presumed mixed intraocular opportunistic infection by a fungal species and cytomegalovirus was published by Giarmoukakis et al. in 2019.

However, Kaluarachchi et al.[1] in their manuscript reported the first case of microbiologically confirmed mixed viral and fungal endophthalmitis (Candida endogenous endophthalmitis and incidental CMV infection of vitreous fluid) in a patient that recovered from COVID-19 pneumonia.

It is evident that Cytomegalovirus (CMV) retinitis is the most common opportunistic intraocular infection in immunocompromised patients and that mixed endogenous endophthalmitis is quite uncommon.

COVID-19 pandemic has resulted in prolonged hospitalization and ICU stay with multiple indwelling catheters and intravenous lines, which is a pertinent risk factor for developing opportunistic nosocomial infections.[2] Clough et al.[3] documented a fivefold increase in the incidence of candidemia in an ICU setting during the COVID-19 pandemic. The COVID-19 infection results in substantial neutropenia along with reduction of peripheral CD4 and CD8 T cells.[4] Although systemic corticosteroids are extremely important in the management of COVID-19, they contribute to immunosuppression.[5]

Ocular surface involvement due to the novel coronavirus disease 2019 (COVID-19) manifesting as ocular pain, discharge, redness, and follicular conjunctivitis has been reported in the literature.[6] Posterior segment involvement has been seen as central retinal vein occlusion,[7] and endogenous fungal endophthalmitis following severe COVID-19 disease has been noted.[8]

However, ocular symptoms have been shown to poorly correlate with ophthalmic findings in patients with fungaemia. Dilated fundoscopy is a safe way to identify an uncommon but sight-threatening condition such as endophthalmitis. Bedside monitoring of vision and funduscopic examination of at-risk patients should be recommended. Confirming ophthalmic involvement will optimize the care as patients with candidemia are treated with systemic antifungal agents which have poor ocular penetrate. In the setting of ocular candida, a treatment change would be required.

Endotheliopathy is an important aspect of COVID-19 disease. The SARS-CoV-2 virus impacts the capillary density and perfusion of the optic nerve head, which can result in non-arteritic anterior ischemic optic neuropathy. Although vitamin K and vitamin D are administered to reduce the severity of COVID-19 disease, intervention studies are needed to assess their effects.

Patients in home quarantine or those who have recovered from COVID-19 infection should be taught to monitor vision. They should be explained about the warning visual symptoms and instructed to report to their ophthalmologist if they experience any.

The authors should be appreciated for prompt diagnosis and management. The combination of both systemic and topical antifungal and antiviral treatment followed by surgical intervention led to a successful outcome. As pointed out by the authors as well, we must be alert not to label such a clinical scenario as a non-infectious panuveitis and start the patient on
a high dose of steroids. Proper history, complete array of blood tests, and adequate screening with a holistic approach must be kept in mind. The authors should share their experience with various ICUs and doctors irrespective of patients’ COVID-19 status. It will result in better patient care and teamwork among medical colleagues.

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