

## From hazy dusk till dawn

### Case

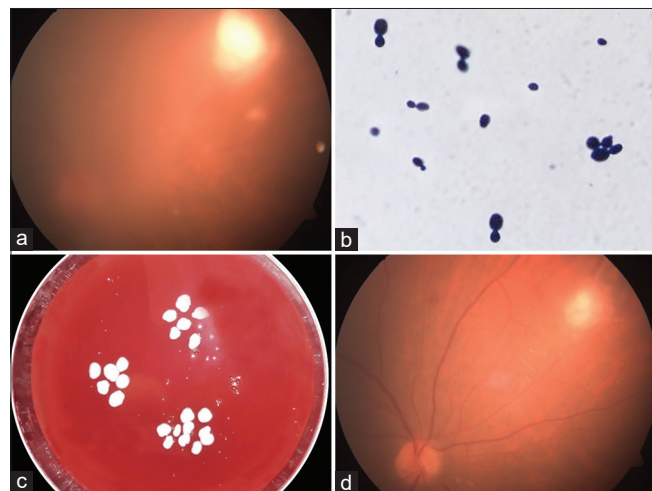
A 70-year-old Asian Indian male, after recovery from COVID-19 40 days ago, presented with decreased visual acuity in the right eye (OD) since 1 week, associated with floaters and redness. During the active COVID-19 phase, he was hospitalized for 10 days and treated with oral steroids, remdesivir, favipiravir, doxycycline, and cefpodoxime. He is a known diabetic, hypertensive, and asthmatic with hypothyroidism. On examination, best-corrected visual acuity OD was counting fingers 2 m, and 20/60 in left eye (OS) with pseudophakia in both eyes (OU). Anterior segment showed mild circumciliary congestion in OD and mild posterior capsular opacity in OS. Right eye showed moderate vitreous haze (grade 3) and vitreous cells (grade 3+), spheroid vitreous clumps, a subretinal yellowish well-defined placoid lesion supero-nasally measuring 3 × 3 × 1 mm, and optic disc hyperemia [Fig. 1a]. It was unremarkable in OS.

### What is your next step?

- Examine his oral cavity
- Pars-plana vitrectomy with intravitreal antifungal injection
- Systemic antifungal medications
- All the above

### Findings and Management

He had a patch of oral thrush. His blood culture showed growth of *Candida* spp and *Aspergillus* spp. Galactomannan, however, was positive (0.63), indicating aspergillosis. Pars-plana vitrectomy with an intravitreal injection of amphotericin B was performed OD. Vitreous biopsy, taken adjacent to the lesion, showed budding yeast cells on Gram stain and creamy yellow colonies on blood agar indicating *Candida albicans* [Fig. 1b and c], confirming



**Figure 1:** (a) Pre operative OD showed moderate vitreous haze (grade 3) and vitreous cells (grade 3+), spheroid vitreous clumps, a subretinal yellowish well-defined placoid lesion supero-nasally measuring 3 × 3 × 1 mm, and optic disc hyperemia. (b) Gram-positive budding yeast cells seen on Gram stain. (c) Creamy-white colony of yeast grown on blood agar. (d) At third postoperative week, OD shows clearing of vitreous haze and cells with reduction of lesion size

the diagnosis as post-COVID-19 endogenous *Candida* endophthalmitis. Oral itraconazole 100 mg twice a day was prescribed. At 3 weeks postoperative follow-up, his vision in OD improved to 20/60 with the clearing of vitreous haze and cells with reduction of lesion size [Fig. 1d].

### Diagnosis

Post-COVID-19 Endogenous *Candida* Endophthalmitis OD.

### Correct Answer

D. All the above.

### Discussion

With the advent of SARS-CoV2, the related spectrum of ocular manifestations has evolved, ranging from conjunctivitis to fulminant mucormycosis. Endogenous endophthalmitis typically occurs in immunocompromised individuals constituting 2%–15% of all endophthalmitis.<sup>[1]</sup> The common causative organisms of endogenous fungal endophthalmitis are *Candida* and *Aspergillus* spp, with a more favorable prognosis in *Candida* spp.<sup>[1]</sup> High-dose intravenous corticosteroids as a part of COVID-19 management and uncontrolled diabetes are known to contribute to systemic immunosuppression, predisposing to opportunistic infections. A combination of oral and intravitreal antifungal agents with pars-plana vitrectomy has proven to be successful.<sup>[2,3]</sup> In our case, pars plana vitrectomy, intravitreal amphotericin B injection, and maintenance dose of oral itraconazole showed a significant clinical response. High index of suspicion, targeted investigations, and expedited intervention may help salvage the vision in patients with post-COVID-19 endogenous fungal endophthalmitis.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

### References

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**Rolika Bansal, Ajit B Majji, Ashok G Reddy, Santosh G Honavar**

Center for Sight, Hyderabad, Telangana, India

Correspondence to: Dr. Ajit B Majji,  
Center for Sight, Ashoka Capitol, Road No 2,  
Banjara Hills, Hyderabad, Telangana, India.  
E-mail: ajitmajji2012@gmail.com

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