



Candida Retinochoroiditis

Mohammad Ali Sadiq, Aniruddha Agarwal, Vishali Gupta,
Mangat Ram Dogra, Amod Gupta, and Quan Dong Nguyen

Contents

Introduction	251
Case 1: Posterior Segment Features of <i>Candida</i> Endophthalmitis	251
Case 2: <i>Candida</i> Endogenous Endophthalmitis in a Renal Transplant Recipient	252
Case 3: Postoperative <i>Candida</i> Endophthalmitis	254
Case 4: <i>Candida</i> Endophthalmitis in an HIV-Positive Patient	254
Suggested Reading	255

Introduction

Fungal endophthalmitis due to *Candida* species can occur following trauma, surgery (exogenous endophthalmitis), or, more commonly, due to hematogenous spread from other infectious foci in the body (endogenous endophthalmitis). Endogenous infection is more frequently seen in patients with intravenous drug abuse, hyperalimentation, diabetes, bone marrow transplantation, malignancy, and other immunocompromised states. *Candida* retinochoroiditis most often presents with focal white lesions in the superficial retina along with vitritis and characteristic vitreous cotton ball opacities. Multiple hemorrhages surrounding the

chorioretinitis may also be seen. It is important to differentiate *Candida* retinochoroiditis from other causes of retinitis that present with a similar picture, as the treatment options may be vastly different depending on the diagnosis.

Case 1: Posterior Segment Features of *Candida* Endophthalmitis

A 57-year-old woman diagnosed with type 2 diabetes presented with sudden-onset progressive decreased vision in both eyes for 2 days. The best-corrected visual acuity (BCVA) was 20/100 in the right eye and 20/120 in the left eye. Fundus photographs revealed multiple, raised, white chorioretinal lesions in both eyes. There was significant vitreous inflammation, and posterior hypopyon was also noted in the left eye (Fig. 1). The patient underwent vitreous tap and the sample was sent for microbiological analysis. The potassium hydroxide mount was positive for *Candida* sp. The patient was started on antifungal treatment with intravenous amphotericin B and intravitreal voriconazole in both eyes.

M. A. Sadiq (✉)
Kentucky Lions Eye Center, Department of Ophthalmology,
University of Louisville, Louisville, KY, USA
e-mail: ali.sdq@hotmail.com; mas@oirrc.net

A. Agarwal (✉) · V. Gupta (✉) · M. R. Dogra (✉) · A. Gupta (✉)
Advanced Eye Centre, Postgraduate Institute of Medical Education and
Research (PGIMER), Chandigarh, India
e-mail: aniruddha9@gmail.com; vishalisara@yahoo.co.in;
vishalisara@gmail.com; drmangatdogra@gmail.com;
dramodgupta@gmail.com

Q. D. Nguyen (✉)
Spencer Center for Vision Research, Byers Eye Institute at Stanford
University, Palo Alto, CA, USA
e-mail: ndquan@stanford.edu

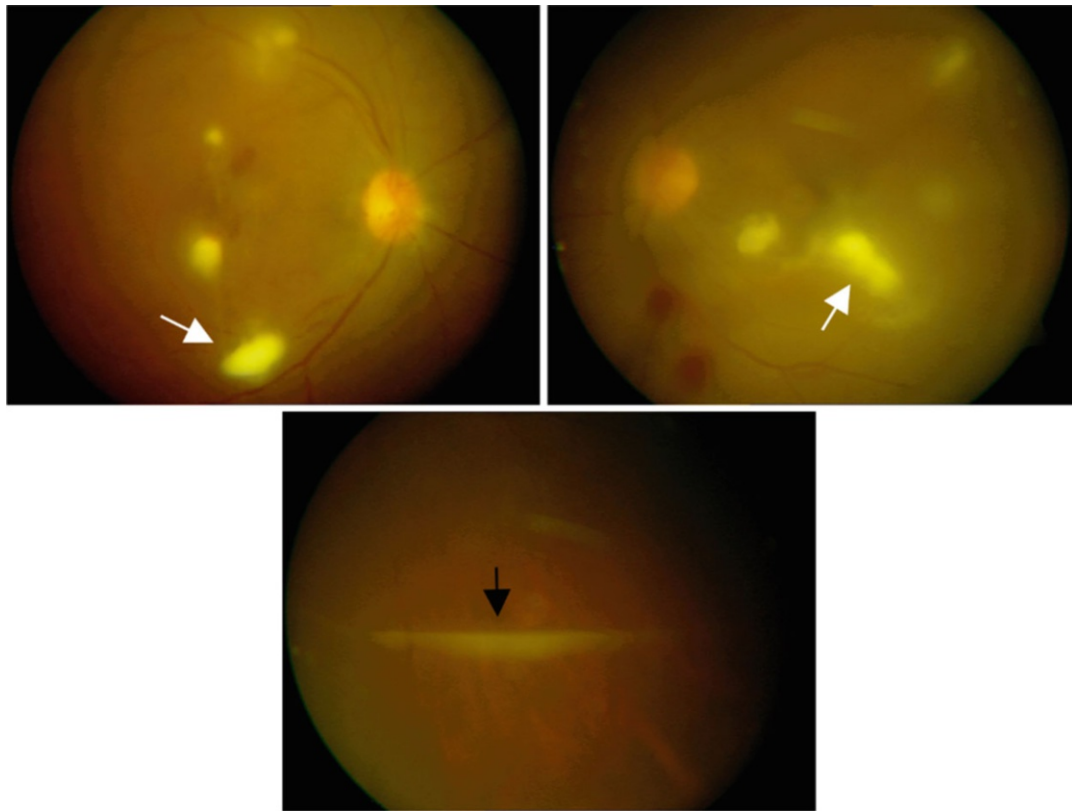


Fig. 1 Fundus photographs (at presentation) showing multiple raised white chorioretinal lesions in both eyes (*white arrows*). A posterior hypopyon is also seen in the left eye inferiorly (*black arrow*)

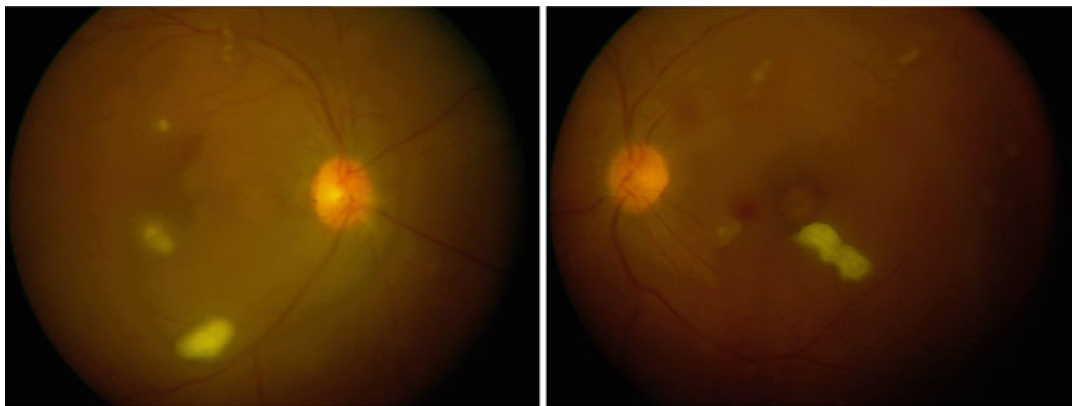


Fig. 2 Fundus photographs 2 weeks post treatment showing a reduction in the size of the chorioretinal lesions

The retinochoroidal lesions decreased in size following therapy. Two weeks after the initial visit (Fig. 2), fundus photography was performed which demonstrates an interval reduction in the vitreous haze and the size of the chorioretinal lesions. Six weeks after initiation of therapy, complete resolution of the lesions was seen in both eyes (Fig. 3). The patient was started on strict glycemic control. Two months following therapy, the BCVA improved to 20/50 in both eyes.

Case 2: *Candida* Endogenous Endophthalmitis in a Renal Transplant Recipient

A 28-year-old immunocompromised woman presented with unilateral decreased vision in the right eye. The patient had previously received a renal transplantation and was on treatment with oral mycophenolate mofetil. BCVA in the right eye

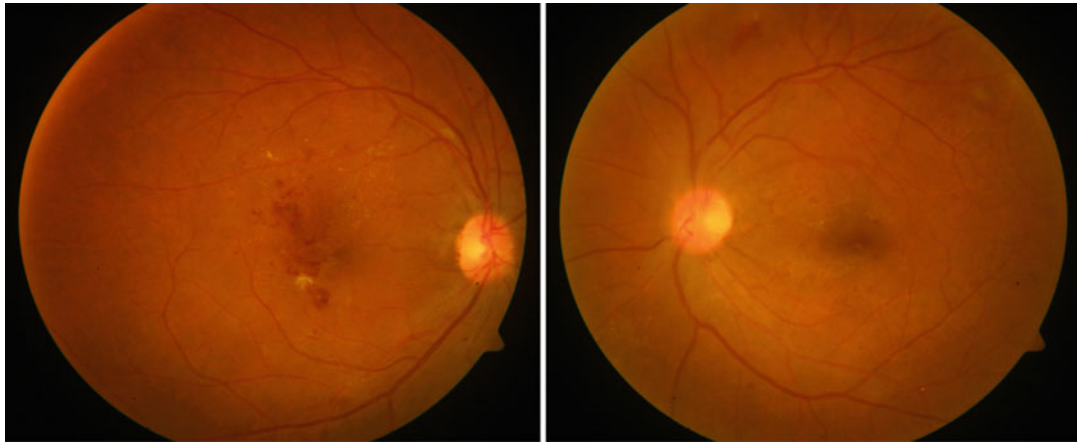


Fig. 3 Fundus photographs from both eyes 6 weeks post treatment showing complete resolution of the lesions

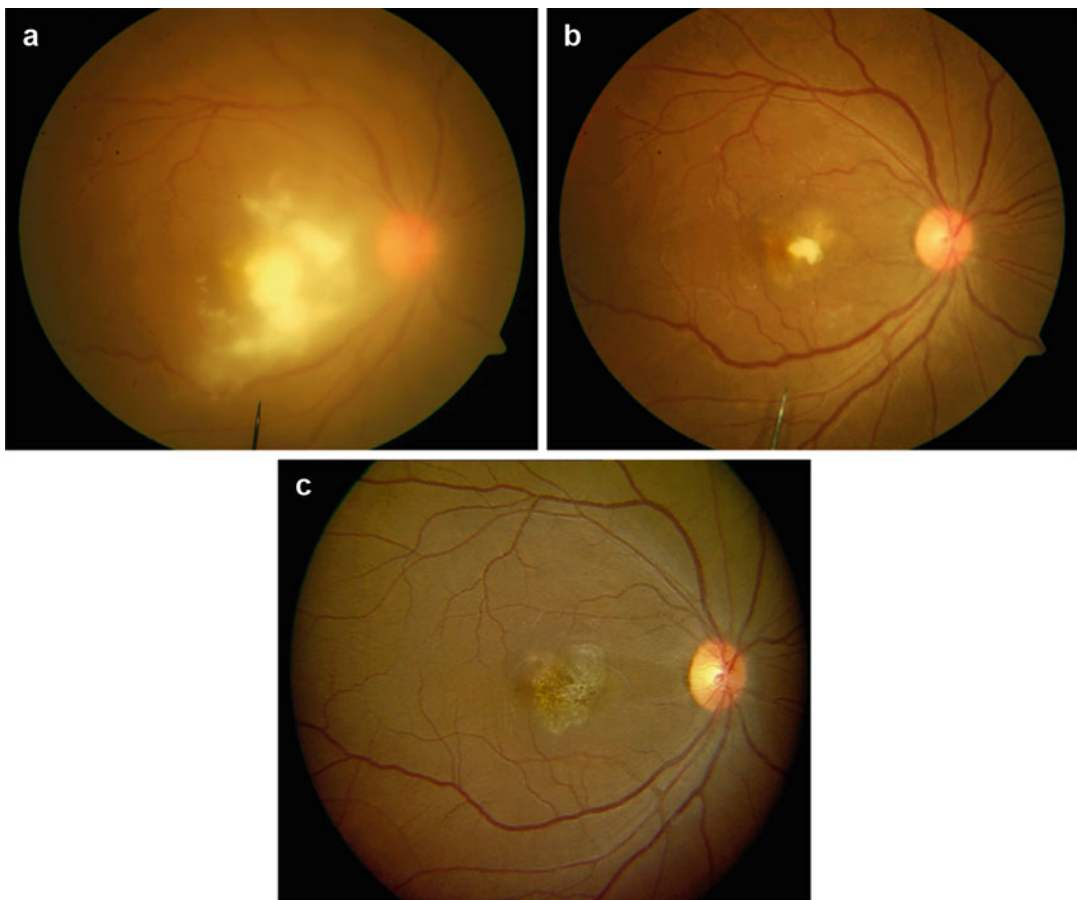


Fig. 4 Fundus photographs from a 28-year-old immunocompromised woman with unilateral decreased vision: (a) – at presentation, showing multiple white chorioretinal lesions and vitritis; (b) – 4 weeks post treatment, showing a reduction in the size of the chorioretinal lesions

and resolution of the vitritis; and (c) – 6 weeks post treatment, showing complete resolution of the chorioretinal lesion and residual scar in the central macula

was 20/200. On examination, anterior segment inflammation was noted with 1+ cells and 1+ flare. Fundus photographs revealed large whitish chorioretinal lesions in the central and inferior macula along with vitritis (Fig. 4a). A diagnosis of

Candida endophthalmitis was made following a positive vitreous biopsy. The patient was given intravenous as well as intravitreal amphotericin (along with intravitreal dexamethasone). The dose of systemic mycophenolate mofetil

was decreased. Fundus photographs after 4 weeks showed substantial reduction in the size of the chorioretinal lesions and decrease in the severity of vitritis (Fig. 4b). Complete resolution of the macular lesion with formation of a residual scar was seen 6 weeks after initiation of treatment (Fig. 4c).

Case 3: Postoperative *Candida* Endophthalmitis

A 47-year-old woman presented with decreased vision, pain, and redness in the left eye 72 h post-cataract surgery. BCVA was 20/200 in the left eye at presentation. On further evaluation using slit-lamp biomicroscopy, the main corneal incision appeared to gape and Seidel's test was positive for aqueous leakage. Significant anterior segment inflammation was noted with anterior chamber cells (3+) and flare (3+). Fundus photographs of the left eye revealed significant vitritis and the presence of whitish chorioretinal lesions in the central macula (Fig. 5a). Vitreous tap was performed and intravitreal vancomycin and ceftazidime were injected. Vitreous tap was positive for *Candida* sp. and, therefore, the

patient was started on intravitreal amphotericin B. Subsequent visits demonstrated decrease in the vitreous inflammation. The foci of retinitis also decreased in size.

Case 4: *Candida* Endophthalmitis in an HIV-Positive Patient

A 47-year-old HIV-positive woman presented with decreased vision in the left eye. BCVA was hand motion at face. On examination, there were significant anterior chamber cells and flare (3+). Examination of the posterior segment revealed large confluent chorioretinal lesions with dense vitritis, vitreous exudates, and membranes. Both macular and peripheral involvements were seen (Fig. 6). The patient was admitted for further evaluation and management of her systemic comorbidities. Vitreous tap was positive for *Candida* sp., and the patient was started on intravitreal and intravenous amphotericin B. Highly active antiretroviral therapy was also initiated. Unfortunately, the patient passed away within the next few weeks due to multiple organ failure.

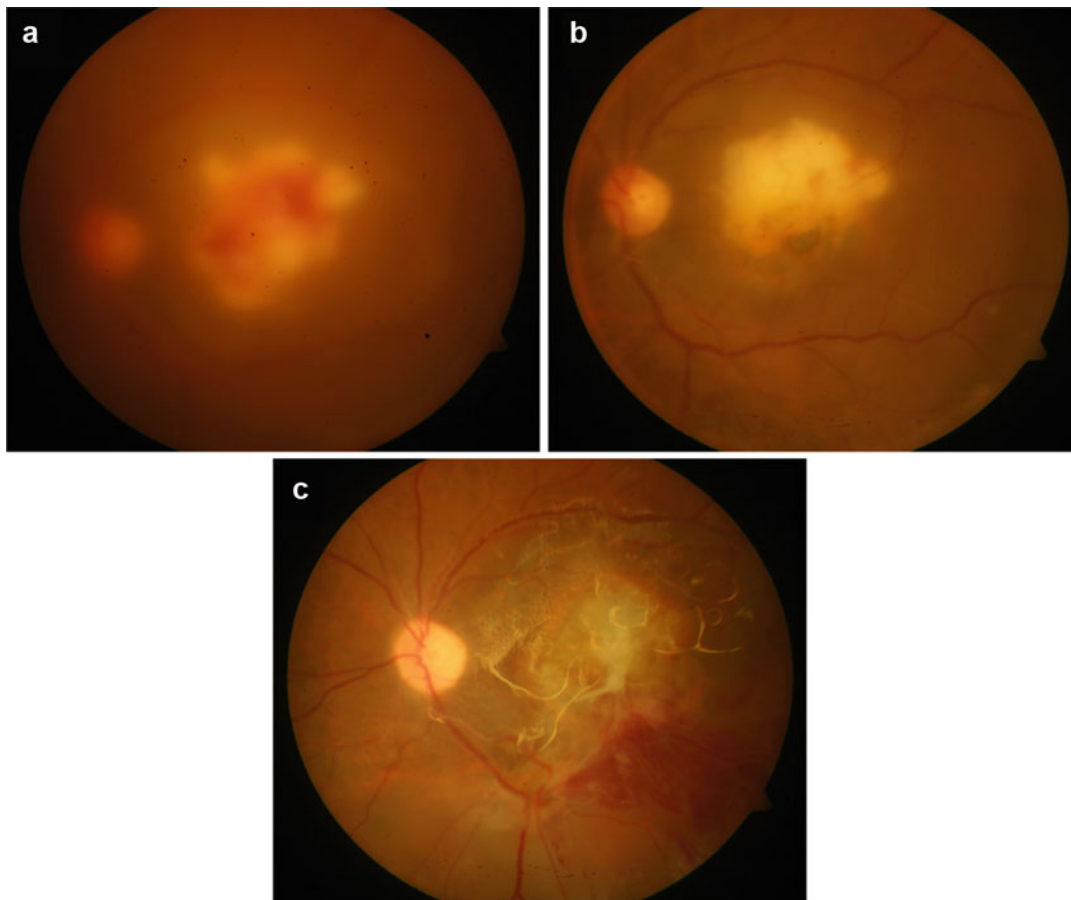


Fig. 5 Fundus photographs from a 47-year-old woman with unilateral decreased vision; (a) – at presentation, showing severe vitritis and the presence of active chorioretinal lesions in the central macula; (b) –

2 weeks post treatment showing reduction in the vitritis; and (c) – 4 weeks post treatment, demonstrating clearing of the vitreous but the presence of dense vitreoretinal membranes

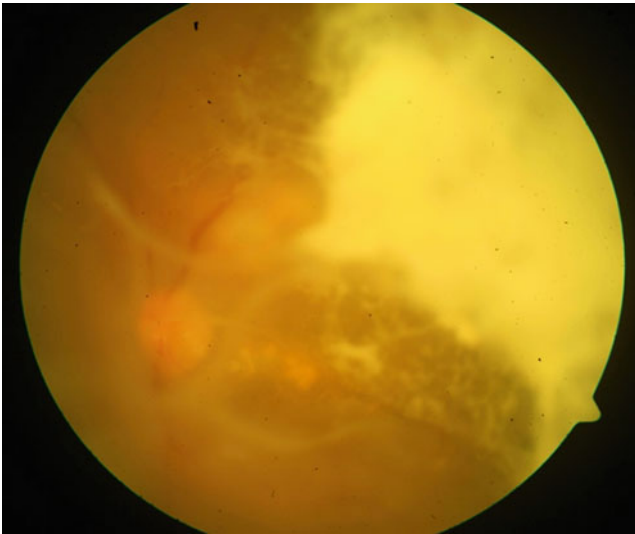


Fig. 6 Fundus photograph demonstrates dense vitreous inflammation and the presence of vitreous exudates and membranes in a patient who developed *Candida* endophthalmitis amid setting of systemic HIV infection

Key Points

- *Candida* retinochoroiditis may present in patients with immunocompromised status, hyperalimentation, or those with history of intravenous drug abuse.
- Typical presenting features include focal, superficial, white chorioretinal lesions along with white “cotton balls” in the vitreous, which is often accompanied by vitritis.
- Early diagnosis and treatment are necessary to salvage the vision and improve visual outcomes.

Suggested Reading

- Chakrabarti A, Shivaprakash MR, Singh R, Tarai B, George VK, Fomda BA, Gupta A. Fungal endophthalmitis: fourteen years' experience from a center in India. *Retina*. 2008;28(10):1400–7.
- Sallam A, Lynn W, McCluskey P, Lightman S. Endogenous *Candida* endophthalmitis. *Expert Rev Anti Infect Ther*. 2006;4(4):675–85.
- Shah CP, McKey J, Spirn MJ, Maguire J. Ocular candidiasis: a review. *Br J Ophthalmol*. 2008;92(4):466–8.
- Vinekar A, Dogra MR, Avadhani K, Gupta V, Gupta A, Chakrabarti A. Management of recurrent postoperative fungal endophthalmitis. *Indian J Ophthalmol*. 2014;62(2):136–40.