CASE REPORT

Intermediate uveitis: an unusual presentation of cytomegalovirus intraocular infection in an immunocompetent patient

Rowayda M Amin,^{1,2} Trucian Ostheimer,¹ Nicholas J Butler¹

¹The Wilmer Eye Institute, Division of Ocular Immunology, The Johns Hopkins University School of Medicine, Baltimore, Maryland,

²Alexandria Faculty of Medicine, Ophthalmology department, Vitreoretinal diseases and Uveitis division, Alexandria, Egypt,

Correspondence to
Dr Rowayda Mohamed Amin,
drrowaydaamin@hotmail.com

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SUMMARY

We report a case of cytomegalovirus (CMV) intraocular infection in an otherwise healthy 51-year-old patient, presenting atypically as isolated intermediate uveitis without retinitis or retinal vasculitis. The patient had a confirmed CMV infection as a cause of her intraocular inflammation via PCR DNA testing of an aqueous sample. Appropriate oral antiviral therapy was initiated, and resulted in complete resolution of inflammation and improvement in visual acuity. Prophylactic therapy was instituted thereafter.

BACKGROUND

Reports over recent years have implicated cytomegalovirus (CMV) as a cause of unilateral recurrent or chronic anterior uveitis associated with raised intraocular pressure (IOP) in immunocompetent patients.^{1–5} Vitritis is not a prominent feature of this uveitic entity and should lower the clinical

suspicion of CMV-related anterior uveitis in the absence of retinitis. Our patient, an otherwise healthy, immunocompetent individual, is the first, to the best of our knowledge, to present with intermediate uveitis without retinitis or retinal vasculitis in association with intraocular CMV infection.

CASE PRESENTATION

A 51-year-old woman presented with a new and constant haze with shifting floaters in her right eye (OD) over the past several weeks. Vision and IOP were 20/25 and 22 mm Hg, respectively, OD. The patient had 1–2+ AC cell with 3–4+ vitreous cell and 1–2+ vitreous haze. There was no retinitis or retinal vasculitis by examination or fluorescein angiography (figure 1). The left eye was completely uninvolved.

According to records and the patient's self-reported history, she had suffered from episodic 'black outs' associated with IOP elevation and

Figure 1 Colour fundus photos of the right (A) and left (B) eyes demonstrating vitreous haze and lack of retinitis, retinal vascular sheathing, or haemorrhages in the right eye. (C and D) display late frame fluorescein angiography findings in the right (7:00 min) and left (9:14 min) eyes, respectively. Notably, there is an absence of overt retinal vasculitis in the affected right eye.

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recurrent, acute anterior uveitis OD over the preceding 9 years. She was otherwise completely healthy with no significant medical, family or social history. She had been variably treated with oral acyclovir, topical steroids and glaucoma drops, but remained poorly controlled, with 10 flares of anterior uveitis associated with IOP elevation in 1 year alone. Glaucomatocyclitic crisis (Posner-Schlossman syndrome) had been entertained, a disease in which CMV has been aetiologically tied with increasing evidence.^{1 5} In the past several months, the patient's disease had become more refractory, chronic and fulminant, involving the vitreous and becoming more visually symptomatic. Her referring retina specialist had tried high-dose oral prednisone and then a posterior subTenon's triamcinolone injection, with no benefit.

INVESTIGATIONS

An anterior chamber paracentesis was performed OD, confirming the presence of CMV DNA by a qualitative, real-time PCR-based assay. The fluid was negative for herpes simplex virus (HSV) DNA and for varicella zoster virus (VZV) DNA by PCR. Positive and negative controls were performed, ensuring test accuracy. Cultures of the ocular fluid were negative for bacteria and fungi, with the exception of very light *Bacillus pumilus* growth, a common laboratory contaminant. Additional work up for other infectious causes of her intermediate uveitis was negative, including toxoplasma, syphilis, tuberculosis and Lyme disease. A complete blood count with differential, complete metabolic panel, serum ACE, serum lysozyme and chest X-ray were also normal. The patient did have evidence of positive serum CMV IgG, HSV 1+2 IgG and VZV IgG on past investigations.

TREATMENT

Oral valganciclovir, a more specific antiviral agent for CMV, was initiated at 900 mg orally two times per day, in addition to the patient's present topical regimen of steroids and IOP-lowering medications.

OUTCOME AND FOLLOW-UP

The patient's inflammation reduced significantly within 2 weeks but required 3 months to become completely suppressed. At last follow-up, 1 year after beginning therapy, she had no inflammation in the AC or vitreous while on valganciclovir 900 mg daily and topical difluprednate 0.05% once daily OD. IOP was normal off all glaucoma therapy. She was symptom-free and remarked that she had not enjoyed this level of vision for more than 10 years.

DISCUSSION

To the best of our knowledge, this is the first report of CMV-associated intermediate uveitis in the absence of retinitis or retinal vasculitis. Pathanapitoon *et al*⁶ recently demonstrated that posterior segment involvement by CMV in patients without HIV coinfection represents a more varied spectrum of disease than classic CMV retinitis. The majority of their 18 patients were immunosuppressed from other causes. Two eyes (of 22) did not have retinitis, but both had retinal vasculitis in addition to vitritis.

Learning points

- ▶ The range of clinical expressions of cytomegalovirus (CMV) intraocular infection may rarely include isolated intermediate uveitis and careful history taking may elucidate a more classic history of unilateral recurrent or chronic anterior uveitis with raised intraocular pressure in these patients.
- ▶ Molecular analysis of intraocular samples generally is not indicated in the setting of isolated intermediate uveitis; however, careful history taking may uncover a course more typical of a viral process and direct the physician to perform PCR analysis in select cases.
- ▶ Always consider infectious aetiologies or masquerading syndromes in the differential when encountering a patient with steroid-resistant intraocular inflammation.
- ▶ Though often refractory to acyclovir or valacyclovir, CMV-associated uveitis generally responds favourably to valganciclovir or other antivirals with anti-CMV activity.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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