Presumed Fuchs Heterochromic Iridocyclitis and Posner-Schlossman Syndrome: Comparison of Cytomegalovirus-Positive and Negative Eyes

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• PURPOSE: To compare the characteristics of cytomegalovirus (CMV)-positive and negative eyes with presumed Posner-Schlossman syndrome (PSS) and Fuchs heterochromic iridocyclitis (FHI).
• DESIGN: Retrospective interventional case series.
• METHODS: One hundred and three eyes of 102 patients with presumed PSS or FHI, seen at the Singapore National Eye Centre, underwent aqueous analysis for CMV by polymerase chain reaction (PCR). Their records were reviewed for clinical features and human immunodeficiency virus (HIV) status of the CMV-positive patients. The main outcome measures were age, gender, maximum intraocular pressure, endothelial cell count, endothelial changes, PCR results, and presence of uveitic cataract and/or glaucoma.
• RESULTS: Sixty-seven eyes with presumed PSS were tapped, of which 35 (52.2%) were CMV-positive. There were 36 eyes of 35 patients with presumed FHI, of which 15 (41.7%) were CMV-positive. All the CMV-positive patients were HIV negative. Nodular endothelial lesions were seen in 18 eyes (36.0%) with CMV infection, and reticulate deposits were seen in all the presumed FHI eyes. CMV-positive and CMV-negative PSS eyes were clinically similar. Older age at diagnosis, male gender, and nodular endothelial lesions were significantly associated with CMV infection in presumed FHI eyes (age: odds ratio [OR], 1.1; 95% confidence interval [CI], 1.0 to 1.2; $P = .01$; male gender: OR, 9.4; 95% CI, 1.0 to 88.6; $P = .049$; nodular endothelial lesions: OR, 13.9; 95% CI, 1.5 to 132.7; $P = .02$).
• CONCLUSIONS: There are no clinically detectable differences between CMV-positive and negative presumed PSS eyes. CMV-positive presumed FHI patients are more likely to be male, older at diagnosis or have nodular endothelial lesions. (Am J Ophthalmol 2008;146:883–889. © 2008 by Elsevier Inc. All rights reserved.)

Accepted for publication Sep 2, 2008.

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CYTOMEGALOVIRUS (CMV) ANTERIOR UVEITIS IN immunocompetent eyes has a wide spectrum of clinical presentation. It may present as a chronic anterior uveitis or as recurrent episodic iritis with raised intraocular pressure (IOP) resembling Posner-Schlossman syndrome (PSS).[1–4] Other clinical features that have been observed in these eyes included sectoral iris atrophy[5] and endotheliitis.[6,7]

In a previous study conducted in our center, we found that 22.8% (24 eyes) of our patients with anterior uveitis associated with elevated IOP (hypertensive anterior uveitis) were positive for CMV deoxyribonucleic acid (DNA) on polymerase chain reaction (PCR) analysis of their aqueous. Eighteen eyes (75.0%) had presented as a presumed PSS, five eyes (20.8%) as Fuchs heterochromic iridocyclitis (FHI), and one presented as a presumed herpetic anterior uveitis.[8] This in turn constituted about one-third of the eyes with presumed PSS and FHI that were tapped (37.5% and 31.3%, respectively). It is important to distinguish an anterior uveitis attributable to a viral infection from a nonviral cause as treatment with steroids alone without appropriate antiviral therapy could potentially worsen the infection, thereby increasing the risk of corneal endotheliitis.[7]

However, until now, in order to make the diagnosis of CMV anterior uveitis, PCR analysis or intraocular antibody assay is required. These tests are costly and may not be available to all patients. In this article, we compared the clinical features of CMV-positive eyes and negative eyes in patients with presumed PSS and FHI to determine if there were any signs that could enable the clinician to distinguish between them without having to resort to aqueous sampling.

METHODS

THIS WAS A RETROSPECTIVE REVIEW OF ALL CONSECUTIVE patients with presumed PSS or FHI who were seen at the uveitis clinic of the Singapore National Eye Centre (SNEC) from January 1, 2004 to December 31, 2006, who had their aqueous analyzed for viral DNA following informed consent. All eyes with hypertensive anterior uveitis that were seen in the uveitis clinic were managed

0002-9394/08/$34.00
doi:10.1016/j.ajo.2008.09.001

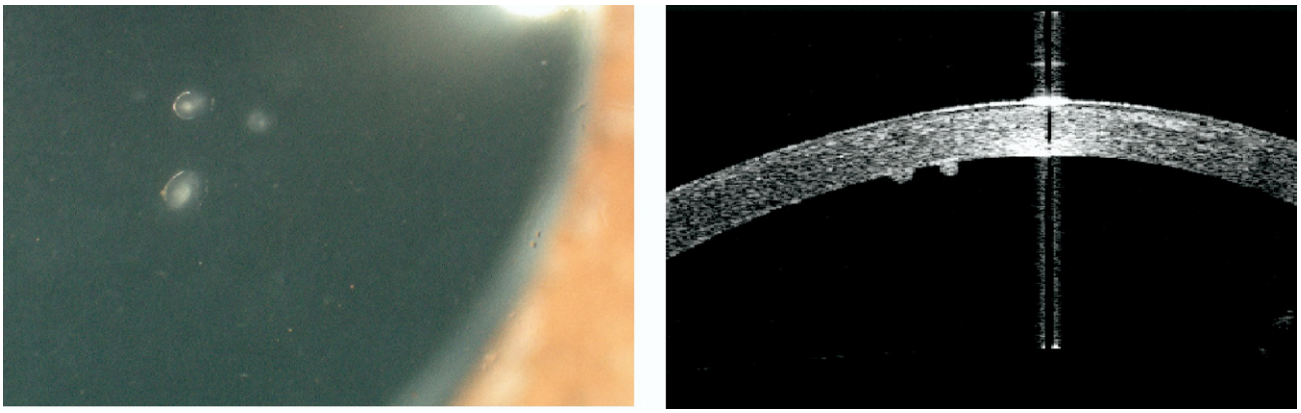

FIGURE 1. Patient with cytomegalovirus (CMV)-positive presumed Posner-Schlossman syndrome. (Left) Slit-lamp photograph showing nodular endothelial lesions. Note the halo around each lesion. (Right) Optical coherence tomography of the same eye confirming the nodular appearance of the endothelial lesions.

according to a standard protocol where all new cases, eyes with presumed PSS presenting during an attack, and all eyes with presumed FHI were offered aqueous analysis as part of their uveitis examination. The presumed PSS eyes were tapped when they presented with a new episode of hypertensive uveitis, prior to starting topical steroids or antiviral medications.

Where indicated, they also had their full blood count, erythrocyte sedimentation rate, chest x-ray, Mantoux test, human immunodeficiency virus (HIV) status, syphilis and human leukocyte antigen (HLA)-B27 serology, aqueous analysis for other infective organisms, and urine microscopy performed to rule out other causes of anterior uveitis. They were also referred to the internal medicine physicians for further evaluation when needed.

One uveitis specialist (S.-P.C.) assessed all the eyes prior to the tap. The anterior chamber (AC) taps were performed under aseptic conditions at the slit-lamp and the aqueous samples were analyzed for herpes simplex virus (HSV), varicella zoster virus (VZV), CMV, and *Toxoplasma gondii* (*T. gondii*) DNA by nested multiplex PCR,[9] real-time PCR (RT PCR) modified from Boeckh,[10] and/or NucliSens (bioMérieux bv, Boxtel, The Netherlands) CMV (pp67) mRNA assay.[11]

Twelve normal eyes undergoing routine cataract surgery during this period also had their aqueous analyzed by the nested multiplex PCR, which formed the normal control group. The uveitis control group consisted of 27 eyes with uveitic glaucoma of unknown cause.

The patient records were reviewed for demographic data including age at diagnosis, maximum recorded IOP, central cornea endothelial cell counts, clinical appearance of the iris, pattern of distribution and appearance of any endothelial lesions, presence of uveitic cataract and/or glaucoma, and the presence or absence of CMV DNA in aqueous by PCR. Patients whose aqueous was positive for CMV DNA were tested for serum CMV antigen (pp65) and antibodies (IgG and IgM) as well as HIV antibodies.

The central cornea endothelial cell count was measured using a Konan Noncon RoBo, CA (Konan Medical Inc, Hyogo, Japan) specular microscope within three months of the AC tap. The relative endothelial cell loss was defined as the difference in endothelial cell count between the nonattack eye and the attack eye. Cataracts were attributed to the uveitis if they were of the posterior subcapsular type. The diagnosis of glaucoma was made based on a combination of optic disc and visual field changes.[12–16] Statistical analysis was performed using SPSS 13.0 (SPSS Inc, Chicago, Illinois, USA).

TABLE 1. Comparison of Clinical Features of Cytomegalovirus-Positive and Negative Eyes

	CMV-Positive (50 eyes)	CMV-Negative (53 eyes)	*P* value
Mean age at diagnosis (yrs)	45.3	44.5	.78[a]
SD	17.1	13.3	
Male gender, no. (%)	69.4	49.1	.045[c]
Mean of highest IOP (mm Hg)	45.9	41.2	.09[a]
SD	13.7	14.1	
Mean of relative endothelial cell loss (cells/mm^2)[b]	673.4	528.9	.07[a]
SD	595.7	569.5	
Eyes with nodular endothelial lesions, no. (%)	18 (36.0)	9 (17.0)	.04[c]

CMV = cytomegalovirus; IOP = intraocular pressure; SD = standard deviation; yrs = years.

[a] *t* test.

[b] Difference in endothelial cell count between the nonattack eye and the attack eye.

[c] χ^2 test.

TABLE 2. Comparison of Clinical Features of Eyes With Presumed Posner-Schlossman Syndrome and Fuchs Heterochromic Iridocyclitis

	PSS (67 eyes)	FHI (36 eyes)	*P* value	Uveitic Controls
Mean age at diagnosis (yrs)	39.2	55.2		47.7
SD	12.3	14.5	<.001[a]	11.9
Male gender, no. (%)	40 (59.1)	21 (58.3)	1[b]	21 (77.7)
Mean of highest IOP	49.2	32.4		39.8
SD	10.8	13.0	<.001[a]	9.6
Eyes with iris atrophy, no. (%)	26 (38.8)	24 (66.7)	.008[b]	7 (25.9)
Eyes with cataract, no. (%)	10 (14.9)	24 (75.0)	<.001[b]	11 (40.7)
Eyes with nodular endothelial lesions, no. (%)	16 (23.9)	11 (30.6)	.49[b]	0 (0.0)
CMV-positive eyes, no. (%)	35 (52.2)	15 (41.7)	.41[b]	0 (0.0)

CMV = cytomegalovirus; FHI = Fuchs heterochromic iridocyclitis; IOP = intraocular pressure; PSS = Posner-Schlossman syndrome; SD = standard deviation; yrs = years.
[a] *t* test.
[b] χ^2 test.

• **DIAGNOSIS OF POSNER-SCHLOSSMAN SYNDROME AND FUCHS HETEROCHROMIC IRIDOCYCLITIS:** There are no specific laboratory tests for these two entities and a presumptive diagnosis was made based on clinical findings. A presumptive diagnosis of PSS was made based on the following findings: recurrent episodes of mild iritis, associated with elevated IOPs and diffuse epithelial edema of the cornea and a few fine keratic precipitates (KPs). The IOP is normal in between attacks and the angles are open.

Fuchs heterochromic iridocyclitis was diagnosed if there was chronic, asymptomatic mild inflammation with diffuse characteristic stellate KPs and no posterior synechiae. There may also be diffuse iris atrophy and vitreous cells.

RESULTS

DURING THIS PERIOD, 103 EYES OF 102 PATIENTS WERE eligible for inclusion in the study and all consented to aqueous sampling for CMV DNA. Sixty-seven eyes had features consistent with PSS (presumed PSS) and 36 had features consistent with FHI (presumed FHI). There were another seven eyes with presumed PSS seen at this time who were quiescent and hence were not included in the study. All the presumed FHI eyes were recruited. Hence, all the eyes with presumed FHI and 90.5% of those with presumed PSS were tapped. Of the eyes that were tapped, 35 eyes (52.2%) with presumed PSS and 15 eyes (41.7%) with presumed FHI were CMV-positive on PCR. All these patients' sera were negative for CMV antigen, CMV immunoglobulin M (IgM), and HIV antibody but were positive for CMV immunoglobulin G (IgG) antibody.

We noted the presence of white, medium-sized, nodular deposits on the endothelium of some eyes, which we termed nodular endothelial lesions. These nodular endothelial lesions have a surrounding translucent halo and are occasionally accompanied by a spot of brown pigment. They are usually found in the center of the cornea. Anterior segment optical coherence tomography (Visante; Model 1000, Dublin, California, USA) confirmed the nodular appearance of these lesions (Figure 1).

TABLE 3. Comparison of Clinical Features of Cytomegalovirus-Positive and Negative Presumed Posner-Schlossman Syndrome Eyes

	CMV-Positive (35 eyes)	CMV-Negative (32 eyes)	*P* value
Mean age at diagnosis (yrs)	37.0	41.5	.13[a]
SD	12.7	11.5	
Male gender, no. (%)	22 (64.7)	17 (53.1)	.47[b]
Chinese race, no. (%)	30 (85.7)	28 (87.5)	.57[b]
Mean of highest IOP (mm Hg)	50.2	48.1	.42[a]
SD	11.1	10.5	
Mean of relative endothelial cell loss (cells/mm^2)[c]	630.5	581.8	.17[a]
SD	532.7	578.7	
Eyes with iris atrophy, no. (%)	15 (42.9)	11 (34.4)	.62[b]
Eyes with glaucoma, no. (%)	8 (22.9)	8 (25.0)	1[b]
Eyes with cataract, no. (%)	8 (22.9)	2 (6.3)	.09[b]
Eyes with nodular endothelial lesions, no. (%)	9 (25.7)	7 (21.9)	.78[b]

CMV = cytomegalovirus; IOP = intraocular pressure; SD = standard deviation; yrs = years.
[a] *t* test.
[b] χ^2 test.
[c] Difference in endothelial cell count between the nonattack eye and the attack eye.

Comparing CMV-positive vs negative cases in both groups of uveitic eyes, male gender and nodular endothelial lesions were significant on univariate analysis (P = .045 and P = .04, respectively) (Table 1). On logistic

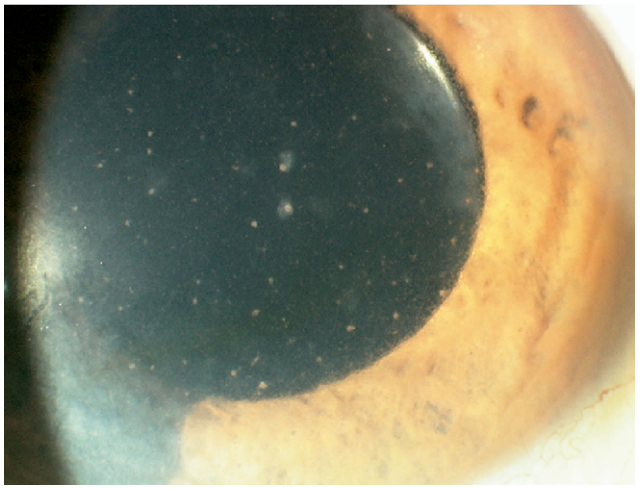

FIGURE 2. Patient with CMV-positive presumed Fuchs heterochromic iridocyclitis (FHI). Slit-lamp photograph showing nodular endothelial lesions accompanied by brown pigmentation. Note the presence of reticulate endothelial deposits, pigmented small endothelial deposits, and mild diffuse iris atrophy.

regression, only nodular endothelial lesions remained significant (odds ratio [OR], 2.6; 95% confidence interval [CI], 1.0 to 6.7; $P = .046$).

Comparison of the presumed PSS and FHI cases showed that the PSS patients were younger, their eyes had higher IOPs, and they were less likely to have iris atrophy or cataracts ($P < .001$, $P < .001$, $P < .008$, and $P < .001$, respectively) on univariate analysis (Table 2). Logistic regression showed that presumed PSS and FHI eyes were statistically different in terms of highest IOP, with FHI eyes having a lower likelihood to have high IOPs (OR, 0.9; 95% CI, 0.8 to 0.98; $P = .001$) and greater probability of developing a cataract (OR, 47.0; 95% CI, 6.4 to 346.3; $P < .001$).

• **PRESUMED POSNER-SCHLOSSMAN SYNDROME EYES:** Five eyes were positive only at second tap and one at third tap (8.9% positive only on repeat tap). None of the presumed PSS eyes had reticulate corneal deposits, but 16 eyes had a few nodular endothelial lesions in addition to the precipitates typically seen in PSS, as shown in Figure 1 (Left). Mild diffuse iris atrophy was seen in 26 eyes (38.8%).

There was no significant difference in any of the clinical features between CMV-positive and negative eyes (Table 3). Five of the CMV-positive eyes and four of the CMV-negative eyes had had previous intraocular surgery and when they were excluded from analysis, there was also no difference in the relative endothelial cell loss.

• **PRESUMED FUCHS HETEROCHROMIC IRIDOCYCLITIS EYES:** One eye was positive only at a repeat tap. All the eyes had the typical stellate corneal deposits associated with FHI. In addition, 11 eyes also had nodular endothelial lesions (Figure 2). Diffuse iris atrophy was seen in 24 eyes (66.7%).

TABLE 4. Comparison of Clinical Features of Cytomegalovirus-Positive and Negative Presumed Fuchs Heterochromic Iridocyclitis Eyes[c]

	CMV-Positive (15 eyes)	CMV-Negative (21 eyes)	*P* value
Median age at diagnosis (yrs)	65.3	49.3	.001[a]
Range	49 to 83	25 to 79	
Male gender, no. (%)	12 (80.0)	9 (42.9)	.04[b]
Chinese race, no. (%)	13 (86.6)	18 (85.7)	1[b]
Median of highest IOP (mm Hg)	39	30.0	.34[a]
Range	18 to 64	14 to 64	
Median of relative endothelial cell loss (cells/mm^2)[c]	600	282	.21[a]
Range	−100 to 2160	−574 to 1590	
Eyes with iris atrophy, no. (%)	9 (60.0)	15 (71.4)	.5[b]
Eyes with glaucoma, no. (%)	5 (35.7)	5 (25.0)	.7[b]
Eyes with cataract, no. (%)	9 (75.0)	15 (75.0)	.0[b]
Eyes with nodular endothelial lesions, no. (%)	9 (60.0)	2 (9.5)	.002[b]

CMV = cytomegalovirus; IOP = intraocular pressure; yrs = years.

[a]Mann–Whitney *U* test.

[b]χ^2 test.

[c]Difference in endothelial cell count between the nonattack eye and the attack eye.

On univariate analysis, age at diagnosis, gender, and nodular endothelial lesions were found to be significantly different between the CMV-positive and negative eyes ($P = .001$, $P = .04$, and $P = .002$, respectively) (Table 4). Only three of the CMV-positive and seven of the CMV-negative eyes had not had previous intraocular surgery and there was no difference in the relative endothelial cell loss of these few eyes. On logistic regression, all three were found to be still significant: age at diagnosis (OR, 1.1; 95% CI, 1.0 to 1.2; $P = .01$), male gender (OR, 9.4; 95% CI, 1.0 to 88.6; $P = .049$), and nodular endothelial lesions (OR, 13.9; 95% CI, 1.5 to 132.7; $P = .02$).

The area under the receiver operating characteristic (ROC) curve for age was 0.83 (95% CI, 0.7 to 0.97) (Figure 3). With a cut-off age of 57, a sensitivity of 80% (specificity 81%) was obtained (OR, 16.2; 95% CI, 2.8 to 94.9).

• **CONTROLS:** None of the normal or uveitis control eyes had any positive PCR results. The mean age of the

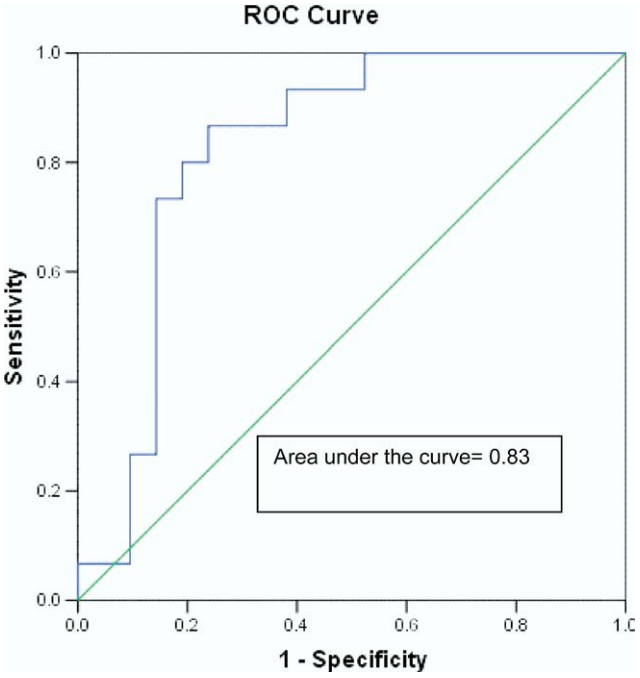

FIGURE 3. Receiver operating characteristic curve for age in FHI eyes. The area under the curve was 0.83 (95% confidence interval, 0.7 to 0.97).

uveitis controls was 47.7 years (standard deviation [SD], 11.9), with a male preponderance (21 males, 77.7%). The mean of their highest IOP was 39.8 mm Hg (SD, 9.6). Iris atrophy was seen in seven eyes (25.9%) and cataract in 11 eyes (40.7%) (Table 2). Some of the other features seen in these eyes included mutton fat KPs (three eyes), posterior synechiae (four eyes), peripheral anterior synechiae (two eyes), and fibrin in the AC (one eye). Six eyes from this uveitis control group were subsequently diagnosed with other pathologies including tuberculosis (two eyes), syphilis (one eye), HLA-B27—associated anterior uveitis (one eye), post–cataract surgery *Propionebacterium acnes* endophthalmitis (one eye), and Crohn disease (one eye). These eyes had a clinical presentation that was atypical of their eventual diagnosis. Hence, aqueous analysis was performed as part of their uveitis examination.

• **REAL-TIME POLYMERASE CHAIN REACTION:** RT PCR was performed in 12 of the presumed FHI eyes and 26 of the presumed PSS eyes. There was no difference in the positive rate between the presumed FHI eyes (eight eyes, 66.7%) and the presumed PSS eyes (15 eyes, 57.7%; $P = 0.7$, χ^2 test). There was also no difference in the concentration of viral DNA between these two groups of eyes (median = 18,335; range, 1180 to 2,000,000 and median = 1400; range, 150 to 67,900 copies of viral DNA/ml of aqueous respectively, $P = .1$, Mann–Whitney U test).

DISCUSSION

IN THIS STUDY, WE FOUND THAT 35 (52.2%) OF PRESUMED PSS eyes were CMV-positive. However, there were no clinical features that enabled the clinician to differentiate between the CMV-positive and the CMV-negative eyes. This could possibly be because presumed PSS is in fact a CMV uveitis, and our positive rate may in fact be an underestimation of the true ocular CMV infection rate. Six (8.9%) of the PSS eyes were positive only on repeat taps. The initial negative results could have been attributable to the small volume of aqueous submitted for testing. The rapid rise in IOP and self-limiting tendency of the ocular inflammation suggest that the suppression of intraocular infection and elimination of viral DNA is also fairly rapid, again leading to a false-negative tap depending on timing of the tap. Because of the retrospective nature of our data, we could not determine if the interval between the onset of the symptoms and the tap was a possible confounding factor. Although we did not assay the aqueous for CMV antibody production, it has not been found to be a much more sensitive test for CMV in eyes with anterior uveitis than PCR.[3,4]

In eyes with presumed FHI, 41.7% of the 36 eyes were CMV-positive. Age at diagnosis, male gender, and nodular endothelial lesions were found to be significantly different between CMV-positive and CMV-negative eyes on both univariate analysis and logistic regression.

Further analysis showed that presumed FHI patients who were age 57 years and older were 16 times more likely to be CMV-positive, whereas the median age at diagnosis of our CMV-negative FHI eyes is 49 years, which is comparable to Birnbaum's data.[17] Hence, an older patient with presumed FHI should be suspected to have a CMV infection.

Reticulate cornea deposits were found to have a very high positive predictive value as a sign of CMV retinitis in HIV patients.[18] These deposits are very similar to those typically seen in FHI eyes. They are described as being fine, stellate, filiform, or reticulate in appearance, and nonpigmented, diffusely dispersed over the entire endothelial surface.[19–21] These reticulate deposits were seen in all the presumed FHI eyes but not in the presumed PSS eyes. On the other hand, we observed the presence of abnormal endothelial lesions in some of our eyes, which were nodular, larger than the usual stellate precipitates, and initially translucent. Some developed a spot of brown pigment following ganciclovir therapy, but they did not decrease in size or disappear even when the inflammation had resolved.

Histopathology of CMV retinitis eyes[20] and confocal microscopy[22] of eyes with CMV endotheliitis have demonstrated the presence of CMV inclusion bodies and macrophages in the cornea. Hence, the nodular endothelial lesions seen in our CMV-positive eyes probably represent CMV-infected endothelial cells. However, they were not useful as a screening tool as they were observed in only

36.0% of the CMV-positive eyes (18 eyes) and also in 17.0% of the CMV-negative eyes (nine eyes). Other corneal features of CMV infection that have been described include linear KPs and coin-shaped lesions.[6,7,22]

Ocular CMV infection can manifest in a number of ways, ranging in severity from an episodic anterior uveitis resembling PSS, to sector iris atrophy with iritis, to a chronic anterior uveitis similar to FHI, to corneal endotheliitis, and ultimately to retinitis. We hypothesize that these manifestations are dependent on the ocular immune response and/or the viral load, with the anterior segment entities being the main mode of expression of infection in a relatively competent immune system and retinitis occurring in immunocompromised eyes.[23] A similar situation is seen with herpetic retinitis, which can manifest as acute retinal necrosis and or multifocal posterior necrotizing retinitis in immunocompetent patients, and as progressive outer retinal necrosis in HIV patients.[24]

The signs seen in eyes with presumed PSS are probably the result of an inflammatory response to the CMV infection as they respond to topical steroids alone and may even be self-limiting. On the other hand, the eyes that present with features of FHI may have a larger viral load and/or poorer immune response than the PSS eyes. Firstly, these eyes respond poorly to steroids. Secondly, reticulate corneal deposits are seen in both HIV patients with CMV retinitis[18] and FHI eyes, and nodular endothelial lesions were more commonly observed in CMV-positive FHI eyes (nine eyes; 60%) than CMV-positive PSS eyes (nine eyes; 25.7%). Lastly, our CMV-positive FHI patients were older than the PSS and CMV-negative FHI patients. There was no statistically significant difference, however, in the viral DNA concentration on RT PCR between the FHI and PSS eyes. This is possibly because of the small sample size and the wide variation in the values. In eyes with corneal endotheliitis, the appearance of the corneal deposits are again different and in our series[7] most of the cases occurred following systemic immunosuppression, further supporting our hypothesis of a differential immune response.

Sixty percent of the presumed FHI cases were CMV negative. Rubella has been found in eyes with FHI.[25,26] Unfortunately, we are not able to determine if rubella is the causative agent in these eyes, as PCR for rubella is currently not available in our laboratory. Thus, different viruses may produce a similar clinical syndrome. The predominant causative virus is likely to be determined by its seroprevalence in the population concerned. In Singapore, the seroprevalence of CMV in the general population is high;[27] hence, it is not unexpected that the prevalence of CMV uveitis is also relatively high here.

We are unable to account for the male preponderance in CMV-positive eyes, especially in our presumed FHI eyes. Interestingly, this trend was also seen in other case series.[3,4]

We also looked at the central cornea endothelial cell counts as a potential diagnostic factor for CMV infection, as we had previously found significantly reduced cell density in eyes with CMV endotheliitis.[7] However, there was a very wide variation in the endothelial cell counts and therefore no significant difference was seen in the relative cell loss of the CMV-positive eyes even when eyes with previous intraocular surgery were excluded. This could possibly be a false-negative arising from the variability in duration of disease at the time of tap.

In conclusion, there is a high prevalence of CMV infection in eyes presenting with PSS or FHI in our population, which may warrant a more judicious use of steroids until a viral etiology can be excluded. However, we did not find any clinical features that could differentiate between CMV-infected and noninfected presumed PSS eyes. In eyes consistent with FHI, though, the presence of nodular endothelial lesions, especially in men over 57 years, may be helpful in identifying CMV-infected eyes.

These results have a potentially significant impact on the management of these eyes. Until now, eyes with presumed PSS have been treated with only steroids and glaucoma medications. However, this repeated use of steroids may be permissive to viral replication, leading to increasingly frequent attacks and attendant glaucomatous damage.[28] Thus, topical nonsteroidal anti-inflammatory drugs theoretically may be a safer option when PCR analysis of the aqueous is not possible. However, the role of anti-CMV therapy in eyes with CMV anterior uveitis remains unresolved. It may be indicated in eyes with recalcitrant uveitis and glaucoma. On the other hand, the potential toxicity and cost of antiviral therapy often may outweigh the benefits, as there is a high relapse rate despite prolonged therapy.[3,29]

THIS STUDY WAS SUPPORTED BY SINGAPORE NATIONAL EYE CENTRE, SINGAPORE. THE AUTHORS INDICATE NO FINANCIAL conflict of interest. Involved in design of study (A.J., S.-P.C.); conduct of study (S.-P.C.); collection of data (A.J., S.-P.C.); management (S.-P.C.); analysis and interpretation of data (A.J., S.-P.C.); preparation of manuscript (A.J., S.-P.C.); and review or approval of the manuscript (S.-P.C.). The study was approved by the Institutional Review Board (IRB) of the Singapore Eye Research Institute and conducted in compliance to its requirements.

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Biosketch

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