the resulting bleb is thin-walled and cystic, which is a recognised risk factor for late bleb infection.[4,6] In our case, infection occurred only in the thin-walled cystic bleb of the right eye in which 5-FU was used, and not in the functioning bleb of the other eye.

Systemic conditions such as immunosuppression, diabetes mellitus or upper respiratory tract infections may influence the development of ocular infection.[5,6] In our case, neutropenia secondary to bone marrow toxicity following the first cycle of the MIC chemotherapy was temporally associated with the bleb infection.

Short-term prophylactic use of topical antibiotics for patients with thin-walled blebs has been recommended,[6] although it is unknown whether such a regimen does lower the incidence of late bleb-related infections. We used prophylactic topical chloramphenicol as an empirical approach during the subsequent five cycles of chemotherapy, and no further episodes of infection occurred.

Topical short-term antibiotic prophylaxis should be considered in high-risk patients. However, a randomised trial of topical antibiotic prophylaxis is needed to confirm their benefit.

References

1. Heuer DK, Parrish RK II, Gressel MG, Hodapp E, Palmberg PF, Anderson DR. 5-Fluorouracil and glaucoma filtering surgery. II. A pilot study. Ophthalmology 1984;91:384–94.
2. Ticho U, Ophir A. Late complications after glaucoma filtration surgery with adjunctive 5-fluorouracil. Am J Ophthalmol 1993;115:506–10.
3. Wolner B, Liebmann JM, Sassani JW, Ritch R, Speaker M, Marmor M. Late bleb-related endophthalmitis after trabeculectomy with adjunctive 5-fluorouracil. Ophthalmology 1991;98:1053–60.
4. Mochizuki K, Jikihara S, Ando Y, Hori N, Yamamoto T, Kitazawa Y. Incidence of delayed onset infection after trabeculectomy with adjunctive mitomycin or 5-fluorouracil treatment. Br J Ophthalmol 1997;81:877–83.
5. Leopald IH, Apt L. Postoperative intraocular infections. Am J Ophthalmol 1960;50:1225–47.
6. Ashkenazi I, Melamed S, Avni I, Bartov E, Blumenthal M. Risk factors associated with late infection of filtering blebs and endophthalmitis. Ophthalmic Surg 1991;22:570–4.
7. The Fluorouracil Filtering Study Group. Fluorouracil filtering surgery study: one-year follow-up. Am J Ophthalmol 1989;108:625–35.
8. Lanigan L, Sturmer J, Baez K, Hitchings RA, Khaw PT. Single intraoperative applications of 5-fluorouracil during filtering surgery: early results. Br J Ophthalmol 1994;78:33–7.
9. Hugkulstone CE, Vernon SA. Low-dose perioperative 5-fluorouracil in trabeculectomy. Ophthalmic Surg Lasers 1996;27:910–6.

Savitha R. Kasetti
Charles E. Hugkulstone
Department of Ophthalmology
Queen Mary's Hospital
Sidcup, UK

Mr Charles E. Hugkulstone, FRCSEd, FRCOphth ✉
Queen Mary's Hospital
Sidcup
Kent DA14 6LT, UK
Tel: +44 (0)208 3022678

Sir,

Ophthalmic findings in HIV seropositive Tanzanian patients

It is now estimated that more than 95% of those infected with HIV live in the developing world. Almost 70% of the global total live in sub-Saharan Africa.[1] At Kilimanjaro Christian Medical Centre (KCMC) in Moshi, Northern Tanzania, patients testing positive for HIV infection were examined to assess the spectrum of ophthalmic disease in an HIV-positive population in East Africa.

Clinical cases

Two cases of patients were examined: unreferred patients from the medical wards in the hospital not known to have an eye problem, and patients with an eye complaint. Forty-seven patients were examined, 24 of whom were male. The mean age was 36.9 years. There were 27 in the first group of unreferred ward patients, of whom 25 had AIDS as defined by the 1993 CDC Expanded Surveillance Case Definition for AIDS among Adolescents and Adults.[2] Nineteen had no abnormal ophthalmic findings; 7 had HIV-related retinopathy consisting of cotton wool spots, dot haemorrhages or both. One patient with an encephalitis had papilloedema and a unilateral VIth nerve palsy.

There were 20 patients in the second group of ophthalmic referrals, of whom 10 had AIDS. The most common diagnoses were herpes zoster ophthalmicus, conjunctival squamous cell carcinoma and conjunctival Kaposi's sarcoma. There were several patients with neuro-ophthalmic diagnoses: papilloedema with cortical blindness, homonymous hemianopia, bilateral optic atrophy, retrobulbar optic neuritis. Only two patients had a retinochoroiditis, both of unknown aetiology but not consistent with cytomegalovirus infection.

In the 35 patients with AIDS the most common non-ophthalmic conditions seen were oral and oesophageal candidiasis, HIV-related wasting syndrome with or without diarrhoea or fever, pulmonary tuberculosis, herpes zoster infection, and central nervous system disease from cerebral toxoplasmosis, pyogenic meningitis and HIV-related encephalopathy.

Comment

Availability of HIV testing at the hospital was poor for financial reasons. Testing was biased towards those with a known risk of HIV, particularly those with herpes zoster ophthalmicus or conjunctival squamous cell carcinoma.[3,4] However, there were also many patients throughout the year with the above two diagnoses[5] and conjunctival Kaposi's sarcoma who could not be tested, in whom a diagnosis of HIV was likely.

The spectrum of ophthalmic disease in HIV-positive patients in Africa is different from that in the developed world. Early markers are herpes zoster ophthalmicus, conjunctival squamous cell carcinoma, and lid or conjunctival Kaposi's sarcoma, which were prominent in

this study. HIV-related retinopathy is seen in up to 50% of patients with AIDS in the developed countries,[6] but in this study and others in Africa[7] it was less common. This may be because it is seen more commonly with lower CD4+ counts.[6]

Neuro-ophthalmic manifestations of cerebral disease were a common finding, reflecting the prevalence of cerebral and meningeal infection in HIV in Africa. In contrast no patients had ophthalmic findings consistent with ophthalmic mycobacterial infection, despite the high prevalence of pulmonary tuberculosis.

No cases of cytomegalovirus (CMV) retinitis were seen: it appears to be a rare manifestation of HIV in Africa despite widespread prevalence of CMV in the African population.[8] This would seem to be because many African patients with HIV are dying from diseases such as tuberculosis and bacterial sepsis before CD4+ counts fall to the low levels (< 100/μl) associated with CMV retinitis in the developed world.[9] One recent West African study found a mean CD4+ cell count of 466/μl in patients with AIDS.[10] There were not the means to measure CD4 counts at KCMC; interestingly, and in contrast, in a study from the Ivory Coast patients with HIV were profoundly immunosuppressed, 39% having CD4+ counts less than 50/μl, but ophthalmic disease was not reported.[11] This has led to speculation that early death may not completely explain the differences in CMV retinitis infection seen; however, it may be that once CD4+ counts become less than 50/μl, when the relative risk of CMV retinitis in HIV is multiplied threefold,[12] African patients with AIDS succumb very quickly to acute infections, and CMV retinitis is not seen. None of the patients seen at KCMC had access to antiretroviral treatment: availability throughout Africa is extremely limited, which together with the reduced ability to adequately diagnose and treat opportunistic infections through financial constraint, are reasons for death before severe immunosuppression.

References

1. United Nations and World Health Organization report. AIDS epidemic update. December 1999.
2. CDC. 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR 1992;41(no. RR-17):1–19.
3. Kestelyn P, Stevens AM, Bakkers E, Rouvroy D, Van de Perre P. Severe herpes zoster ophthalmicus in young African patients: a marker for HTLV-III seropositivity. Br J Ophthalmol 1987;71:806–9.
4. Kestelyn P, Stevens AM, Ndayambaje A, Hanssens M, Van de Perre P. HIV and conjunctival malignancies. Lancet 1990;336:51–2.
5. Poole TRG. Conjunctival squamous cell carcinoma in Tanzania. Br J Ophthalmol 1999;83:177–9.
6. Freeman WR, Chen A, Henderly DE, Levine AM, Luttrul JK, Urrea PT, *et al.* Prevalence and significance of acquired immunodeficiency syndrome-related retinal microvasculopathy. Am J Ophthalmol 1989;107:229–35.
7. Lewallen S, Kumwenda J, Maher D, Harries AD. Retinal findings in Malawian patients with AIDS. Br J Ophthalmol 1994;78:757–9.
8. Lewallen S, Courtright P. HIV and AIDS and the eye in developing countries. Arch Ophthalmol 1997;115:1291–5.
9. Grant AD, Djomand G, De Cock KM. Natural history and spectrum of disease in adults with HIV/AIDS in Africa. AIDS 1997;11 (Suppl B):S43–54.
10. Adu-Sarkodie Y, Sangare A, d'Almeida OA, Kanmogne GD. Distribution of CD4+ T-lymphocyte levels in patients with clinical symptoms of AIDS in three West African countries. J Clin Virol 1998;11:173–81.
11. Grant AD, Djomand G, Smets P, Kadio A, Coulibaly M, Kakou A, *et al.* Profound immunosuppression across the spectrum of opportunistic disease among hospitalised HIV-infected adults in Abidjan, Cote d'Ivoire. AIDS 1997;11:1357–64.
12. Anand R. Treatment of cytomegalovirus retinitis with the intraocular ganciclovir implant. Curr Opin Ophthalmol 1997;8:8–14.

Mr T.R.G. Poole, BSc, FRCOphth ✉
Department of Ophthalmology
Frimley Park Hospital
Frimley, Camberley
Surrey GU16 5UJ, UK

Sir,

Endogenous *Aspergillus* endophthalmitis occurring in a child with normal immune function

Endogenous *Aspergillus* endophthalmitis is a rare condition which occurs in the context of injecting drug use and various immunodeficiency states.[1] We report an unusual case of this infection, presenting in a young child who had no evidence of underlying immunosuppression.

Case report

A 5-year-old Chinese girl with beta-thalassaemia trait never requiring transfusion was referred 10 days after she developed painless redness of the left eye. Her mother also described a hypopyon level. The referring ophthalmologist had instituted treatment for left panuveitis including topical and oral corticosteroid. There was a history of upper respiratory tract infection 2 weeks prior to the onset of the ocular symptoms, but no history of trauma to the eye.

On presentation, visual acuity was counting fingers at close range in the left eye, and there was a left afferent pupillary defect. The left lids were swollen, and slit lamp examination of that eye revealed marked ciliary injection, no hypopyon, but 3+ aqueous cells with a dense flare, and a thick fibrin pupillary membrane. The left fundus could not be visualised. Right eye examination was normal. There were no signs of ocular trauma. The patient was febrile, but full physical examination was otherwise unremarkable. Ocular ultrasound and CT scan revealed a left retinal detachment, and associated dense vitreous opacity, but no mass lesion or foreign body, and orbital tissues appeared normal.

This severe acute presentation of intraocular inflammation, atypical of childhood uveitis, suggested endogenous infectious endophthalmitis. Pars plana