

# Herpetic Eye Disease in a Public Eye Hospital in Nigeria

Sebastian NN Nwosu and Akunne I Apakama

Department of Ophthalmology, Nnamdi Azikiwe University, Nnewi Campus

## SUMMARY

**Objective:** To determine the aetiology, pattern and complications of herpetic eye disease seen at the Guinness Eye Centre, Onitsha, Nigeria.

**Materials and Methods:** The case files of all patients with herpetic eye disease who presented at the centre between January 1998 and December 2003 were reviewed. Information on age, sex, aetiological diagnosis, visual acuity, ocular complications and HIV status were abstracted into a standard proforma and analysed.

**Results:** Sixty-two patients (64 eyes) – 35 male and 27 female – were seen. Age range was 14 months to 80 years. Thirty-one (50%) patients (32 eyes) had herpes simplex keratitis, 30 had cytomegalovirus retinitis. Twenty-nine patients were HIV positive.

Fifty per cent of the affected eyes had low vision. Common ocular complications were: corneal opacity (20 patients); herpetic neuralgia (9 patients); uveitis (8 patients); and superimposed bacterial infections (6 patients).

**Conclusions:** Herpetic eye disease is an important cause of ocular morbidity. Herpes zoster and cytomegalovirus infections, especially in young people, should raise the suspicion of coexisting HIV infection. Corneal scarring is the most common complication of the disease and requires keratoplasty to restore vision.

**Key words:** herpetic eye disease, Onitsha, Nigeria

## INTRODUCTION

The herpes virus family includes the herpes simplex virus, varicella zoster virus, cytomegalovirus and Epstein Barr virus.<sup>1</sup> All these viruses can infect human beings. Ocular herpes simplex is a leading cause of corneal disease and corneal blindness in developed countries.<sup>2</sup> The herpes simplex virus is responsible for 39% of corneal ulcers in children and 59% of all ocular ulcers in developing countries.<sup>3</sup> With the HIV pandemic, the incidence of clinical disease due to varicella zoster virus and cytomegalovirus appear to be on the

increase. Herpes zoster ophthalmicus has been described as a marker of HIV infections in Africa.<sup>4</sup>

Information on the magnitude of herpetic eye disease, its pattern and impact on ocular morbidity in Nigeria is scanty. In a 5-year review of corneal ulcers in Lagos, Adefule and her colleagues noted the possible contribution of viruses in the aetiology of ulcers.<sup>5</sup> They also observed that viral ulcers were scarcely investigated because of lack of facilities for viral culture and other laboratory techniques. Viral culture is the gold standard for diagnosis. However, diagnosis of most cases of ocular and adnexal herpes virus infections can be made on clinical grounds: dendritic corneal ulcers (herpes simplex); skin lesions along the dermatomal distribution of the ophthalmic division of the trigeminal nerve (ophthalmic herpes zoster) and the characteristic fundus features of cytomegalovirus retinitis. The present study is aimed at determining the pattern and sequelae of herpetic eye disease in the only publicly-owned eye hospital in Anambra State, Nigeria.

## MATERIALS AND METHODS

This is a retrospective study. Case files of all new patients with herpetic eye disease seen at the Guinness Eye Centre, Onitsha, Nigeria, between January 1998 and December 2003, were reviewed. Information on socio-demographic data, aetiological diagnosis, presenting visual acuity; HIV status and ocular complications were abstracted into a standard proforma and analysed. All the patients with herpes infections were tested for HIV. For this study, visual acuity <6/18 - 3/60 was classified as visual impairment; an acuity of <3/60 as blindness; and an acuity of <6/18 - LP as low vision.

## RESULTS

During the six-year period of the study, a total of 62 patients – 35 (56.5%) male and 27 (43.5%) female – were seen. Their ages ranged from 14 months to 80 years, with a mean of 43 years (table 1). The occupation of the patients is shown in table 2. Two patients (32%) had bilateral disease, consequently, 64 eyes were involved. Thirty patients (48.4%) presented in the last 2 years of the study.

\*Correspondence: Professor SNN Nwosu, Guinness Eye Centre, Onitsha, Nigeria. Email: sabenwosu@yahoo.com

Thirty-one patients (50%) had herpes simplex keratitis, and one of these had bilateral corneal infection; thirty patients (48.4%) had herpes zoster ophthalmicus while only one patient had bilateral cytomegalovirus retinitis. Five children, who had herpes simplex keratitis, also presented with febrile illness. Three of these children had coexistent herpes labialis. There was no indication in the records that the patients had used traditional eye medicine. Twenty-six of the patients with herpes simplex (keratitis) virus presented with dendritic keratitis; three patients had stromal oedema and two children had geographic ulceration.

**Table 1.** Age and sex distribution

Age (years)	M	F	Total	%
<1 - 9	3	-	3	4.8
10 - 19	2	5	7	11.3
20 - 29	9	8	17	27.4
30 - 39	7	3	10	16.1
40 - 49	9	3	12	19.4
50 - 59	2	3	5	8.1
60 - 69	3	2	5	8.1
> 70	-	3	3	4.8
Total	35	27	3	100

**Table 2.** Patient's occupation

Occupation	No	%
Trader	15	24.2
Farmer	14	22.6
Artisan	11	17.7
Student	10	16.2
Civil servant	9	14.5
Pre-school	3	4.8
Total	62	100

Twenty-nine patients (46.8%) were HIV positive. Out of these, twenty-seven (93.1%) had herpes zoster ophthalmicus, while one patient (3.5%) had herpes simplex keratitis and another had cytomegalovirus retinitis. The age of the HIV-positive patients ranged from 24 to 45 years, with a mean of 32.9 years.

Sixteen (25%) eyes were blind and another 16 (25%) were visually impaired (table 3). The Snellen visual acuity test could not be conducted for the three infants aged 14 months, 18 months and 2 years. Each had a uniocular paracentral dendritic ulcer which healed with a superficial scar. These children did not show preference for the unaffected eyes thus suggesting that the affected eyes had useful vision. The patient

with cytomegalovirus retinitis was bilaterally blind. The common ocular and adnexal complications were corneal opacity, herpetic neuralgia, uveitis and secondary bacterial infections (table 4). Some patients had more than one complication.

**Table 3.** Presenting visual acuity (affected eyes)

Snellen acuity	No	%
6/6	5	7.8
6/9	8	12.5
6/12	8	12.5
6/18	8	12.5
6/24	5	7.8
6/36	7	10.9
6/60	1	1.6
3 / 60	3	4.7
< 3 /60 - LP	9	14.1
NPL	7	10.9
Not recorded	3	4.7
Total	64	100

**Table 4.** Ocular and adnexal complications

Complication	No	%*
Corneal opacity	20	32.3
Herpetic neuralgia	9	14.5
Uveitis	8	12.9
Bacterial infection	6	9.7
Periorbital scar	4	6.4
Optic atrophy	2	3.2
Ptosis	2	3.2
Ruptured cornea	2	3.2
Dry eye	1	1.6
Madarosis	1	1.6

\*Based on 62 patients

## DISCUSSION

The incidence of herpetic eye disease, though low at the Guinness Eye Centre, Onitsha, showed an increase in the last two years of the study. Nearly half of the patients presented during the last two years of the study. This increase was associated with an increase in the number of HIV positive patients presenting with ocular symptoms. Herpes zoster has long been recognized as a marker of HIV infection in Africa.<sup>4</sup> In this study, 27 of the 30 patients presenting with herpes zoster ophthalmicus were HIV positive, almost 90%. In a

Ugandan study, while 35.6 / 1000 patients with herpes zoster were HIV positive, the corresponding rate for herpes zoster ophthalmicus was 4.25 %, much lower than our cohort.

Studies on herpetic eye disease in Nigeria are not common. However, with the HIV/AIDS pandemic, reports of herpes zoster ophthalmicus associated with HIV infection have been on the rise in Nigeria<sup>7</sup> and Africa.<sup>4</sup>

Up to 79% of the patients in this cohort were less than 50 years but none of the HIV-positive patients was over 50 years old. This once more points at youthful age as a risk factor for HIV infection. Except for the preschool children and perhaps students, all the patients were either employed or self-employed (table 2).

The herpes simplex virus has been reported to be a leading cause of corneal ulcers at the Guinness Eye Centre, Onitsha.<sup>8</sup> A study in France<sup>9</sup> showed that the most frequent types of herpes simplex corneal diseases were dendritic keratitis (56.3%), stromal keratitis (29.5%) and geographic keratitis (8.6%). This is unlike the experience in the present study where more than 80% of the patients with herpes simplex, presented with dendritic keratitis. Herpes virus infections usually occur in the immuno-compromised. The use of traditional eye medicine (TEM) also exacerbates quiescent herpes corneal disease and will rapidly worsen the ulceration leading to geographic ulcers. However TEM use was not specifically studied in this cohort. Most of the children affected had febrile illness and herpetic affectation of the lips. Herpes labialis and stomatitis are often found in malnourished children and those with other viral illnesses such as measles. It is therefore recommended that ophthalmologists advise parents on taking full advantage of the National Programme on Immunization to immunize their children against measles and other diseases that may predispose children to herpes corneal disease.

Most of the patients in this study were diagnosed with herpes zoster or herpes simplex eye disease. This is because of the characteristic ocular and adnexal lesions associated with these two herpetic viral diseases. It is likely that in the absence of facilities for viral culture and other viral immunologic diagnostic techniques, the other viruses within the herpes family were under-diagnosed. The difficulty in making accurate diagnosis of viral eye diseases in Nigeria in the absence of requisite diagnostic facilities has been highlighted by other workers.<sup>5</sup>

Potentially blinding complications in this cohort included corneal opacity and uveitis. While corneal opacity complicated 32.3% of the cases, uveitis occurred in 12.9% (table 4). Uveitis is a common complication of both herpes simplex and herpes zoster eye infections and may occur in association with active herpes corneal infections.<sup>10</sup> The rate of uveitis found in the present study is less than that in developed countries where anterior uveitis is reported to

occur in 43% of herpes zoster eye infections.<sup>10</sup> The finding that 50% of the affected eyes in the present study had low vision at presentation confirms the importance of herpetic eye disease as a cause of ocular morbidity affecting all age groups in the Nigerian environment. Leukoma, which complicated the disease in a third of the patients, should be noted as a cause of avoidable blindness and low vision. Corneal opacity following herpes simplex keratitis is one of the commonest indications for penetrating keratoplasty in developed countries.<sup>11</sup> Currently, there are no facilities for corneal transplant at the Guinness Eye Centre, Onitsha, in spite of the availability of trained manpower.

## CONCLUSION

The incidence of ophthalmic herpetic disease is on the increase at the Guinness Eye Centre, Onitsha, coinciding with the upsurge in the incidence of HIV/AIDS; 29 of the 62 patients in the study were HIV positive. Ocular morbidity among children, resulting from complications of viral illnesses such as measles, could be prevented through adequate immunization, while corneal graft facilities for restoring vision from corneal complications should be provided.

The fact that nearly half of these patients were HIV positive suggests the need to make all ophthalmologists and eye care health personnel aware of the ocular markers for HIV/AIDS infection.

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