

Case Report

Cytomegalovirus Retinitis Presenting With Blindness in an HIV Infected Nigerian Child

Oyedeji Olusola¹, Isawumi Michaeline², Kolawole Olubayo³, Olagunju Funso⁴

¹Consultant Paediatrician, ⁴Senior Registrar,
Department of Paediatrics and Child Health, Ladoko Akintola University of Technology Teaching Hospital,
Osogbo, Osun State, Nigeria

²Consultant Ophthalmologist, Department of Surgery, College of Health Sciences, Osun
State University, Nigeria

³Graduate Student, Department of Experimental Medicine, University of British Columbia.

Corresponding Author: Oyedeji Olusola

ABSTRACT

Retinitis from CMV is the leading cause of blindness in HIV infected individuals in the developing countries. However, reports on CMV retinitis presenting with blindness in HIV infected children are rare. We report a case of blindness associated with CMV retinitis in a 9 year old HIV infected Nigerian girl. The challenges encountered and the lessons learnt from managing the case are discussed in this report.

Keywords: Visual loss, HIV, childhood, CMV, retinitis

INTRODUCTION

Reports on opportunistic ocular infections in HIV infected African children are scarce. Similarly, information on blindness complicating ocular infections such as CMV retinitis, in the paediatric age group is scanty. ^[1,2] Cytomegalovirus retinitis is more common in HIV infected adults also; studies suggest that CMV is an uncommon opportunistic infection of children with advanced HIV disease. ^[3,4] Under reporting or inability to diagnose CMV retinitis may explain the perception that childhood CMV retinitis is uncommon.

Poorly treated or untreated eye infections or diseases may result in blindness. Thus, prompt detection and management of CMV retinitis is very important to prevent complications. ^[1] Prevention is however better than cure.

Blindness is probably the most feared and severe complication of any eye

disease, probably because vision impacts significantly on the quality of life of any individual. Thus everything and anything needs to be done to safeguard good vision and prevent blindness. There is a need for more coordinated effort at global regional and country level in order to improve access to eye care and prevent blindness. ^[5]

The need to report this case was based on the identification of certain aspects of management of the child that depicted good practice and other aspects of care that were adjudged below standards or good care. It is very likely, that if the issues identified as poor practice were addressed or prevented, this child might not have developed CMV retinitis and consecutive blindness. It is hoped that the information shared in this report will assist other physicians managing similar children in other settings, institute prompt and appropriate care that will not only prevent

the development of CMV retinitis, but further prevent development of blindness in patients presenting with CMV retinitis.

CASE REPORT

We report the case of a 9 year old HIV infected patient, who presented at the Paediatric anti-retroviral clinic with progressive loss of vision of 2/52 duration. There was associated redness of eye and pussy discharge for two days noted from the inception of loss of vision. Prior to this there was history of contact with a class mate with redness of eye. A diagnosis of epidemic viral conjunctivitis was made and the child was treated. In addition, the mother of the child resulted to home management of the child by applying topical antibiotics purchased from a local pharmacy. The partial loss of vision deteriorated to inability to see as at the time of presentation to the clinic. There was no history of trauma to the eye or fever or weight loss.

The child had been diagnosed to be HIV infected 4 years prior to this consultation and had initiated HAART shortly after diagnosis of HIV, however her adherence to HAART and attendance of follow up clinic was poor. The father of this patient is 40years of age and is unemployed; furthermore, his HIV status is undetermined. The father has not been supportive to clinic attendance of the child and other aspects of the care of the mother and child. Mother, is a 35 year old seamstress. She is HIV infected and on HAART. Mum is supportive to the care of child, however her meager salary was estimated at 7,500/ month(\$20) and not enough to meet the needs of the family.

Examination revealed a conscious, well hydrated, wasted child with generalized lymph node enlargement and weight of 12kg which was 50% of expected for age. Temperature was 37°C and capillary refill time less than 2 seconds. There was no palor, cyanosis or finger clubbing.

Systemic examination revealed no abnormality. However examination of the

eyes revealed visual acuities of 'no light perception' a normal anterior segment, with the exception of the presence of relative afferent pupillary light reflexes. Examination of both eyes with a hand held ophthalmoscope revealed bilateral non-pharmacologic dilatation of the pupils and yellowish reflex, which is suggestive of a reflection from the massive atrophy of the retina. Figure 1. Fundoscopy revealed intra-retinal haemorrhages with exudates and whitening of the retina, a, pizza pie retinopathy, which is typical of CMV retinitis. Figure 2. Intraocular pressure was normal, measuring 13mmHg in either eye with the use of a hand held Perkins tonometer.

An assessment of CMV retinitis in a child with HIV/ AIDs was subsequently made. Investigations carried out included a Full blood count which was reported with a packed cell volume of 30% and total white cell count of 2500mm³. Differential neutrophil count was 72% and lymphocyte 28%. Blood culture yielded no growth. The viral load and CD4 counts were 164,456 copies/ml and 11cells/mm³ respectively. Cytomegalovirus viral antigen and immunoglobulin assays or culture were not done because of financial constraints also bearing in mind that yield is very low in end organ disease. Patient was subsequently started on intravenous ganciclovir 5mg/kg for 2 /52. However she had the drug for only 5 days, because of financial constraints. Anti-retrovirals were changed from the first line Zidovudine, Lamivudine and Efavirenz to second line drugs Abacavir, Lamivudine and lopinavir/ritonavir. Weekly fundoscopy for up to six weeks showed no significant changes from the fundoscopic findings at admission. At discharge after 6 weeks of admission and 2 weeks of treatment on second line HAART, patient was still unable to see but was medically fit for discharge.

The patient has had two out-patient consultation post discharge. However 3 months after switching the anti-retrovirals, to the second line drugs, the patient is still

unable to see, with the fundoscopic findings similar to the pattern seen at admission. Viral load and CD4 counts, 2 months after imitating second line therapy was reported as $16\text{cells}/\text{mm}^3$ and $373,238\text{copies}/\text{ml}$ respectively. The patient continues to attend the anti-retroviral clinic regularly and adheres to the HAART medication regulation, following, several episodes of counselling by the adherence counsellors.



Figure 1: Fixed non-pharmacologic dilated pupils

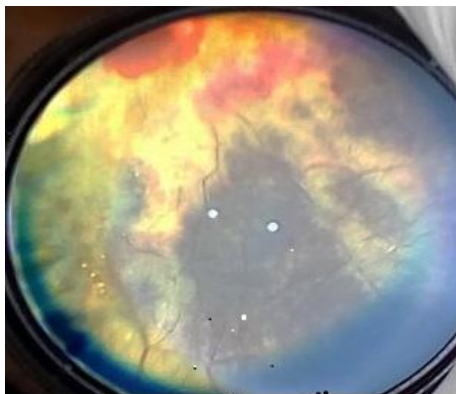


Figure 2: Pizza pie retinopathy fundoscopy findings of the right eye

DISCUSSION

Fundoscopy findings in CMV retinitis can be diagnostic and prognostic. [6-8] The initial tentative diagnosis of CMV retinitis was based on the features of retinitis. Making this diagnosis promptly in a resource restricted setting is one of the good aspects of this case management. Retinitis by CMV in an HIV infected individual indicates advanced disease. Furthermore with the florid and extensive retinal picture, it was not surprising that there was no response to administration of ganciclovir and switch to second line HAART, in terms of restoration of sight. The extent of retinopathy at admission further gives reason to suspect that the retinitis might have been on-going for longer than two weeks stated by the care giver.

Cytomegalovirus retinitis is a cause of blindness if left untreated or poorly treated as was the situation in the present case report. [7-9] Ignorance of the severity of the eye disease, coupled with mismanagement with home medications,

advanced disease in the patient poor social support and poor adherence to HAART were the major factors adduced to be responsible for the progression of retinitis to blindness. Previous studies show that blindness complicating CMV retinitis is a rare condition in children most probably because of prompt diagnosis and treatment of infected individuals. [2,10]

Possible predisposing factors to CMV retinitis in this patient were the poor immunologic status, which was reflected by the CD4 count, viral load and clinical staging. Previous studies have established that poor immune status, immune recovery and aids are risk factors for acquisition of CMV retinitis. These factors can also lead to the severity and or poor outcome. [11,12]

Another question on the management of this patient worth highlighting is why were the anti-retrovirals of this child not switched earlier? The simple answer to this question was that the poor adherence and poor social support would probably have led to failure of the second line anti-retrovirals if initiated. A

lesson to take home from this case, however is the need to promptly and aggressively manage HIV infected children in order to prevent them from developing advanced disease or immunosuppression. Adherence needs to be established as soon as possible and the anti-retrovirals switched where there is treatment failure.

In order to prevent future occurrences in children with similar condition, the content of primary eye care information provided at the paediatric ARV clinics to parents and caregivers, needs to be expanded to include information on what needs to be done when an HIV infected child has eye discharge or redness. Caregivers or patients with eye disease need to seek proper care for any complaints concerning the eye, rather than trivialize eye disease or resort to home treatment. The adherence counsellors need to address every social and medical issue that may affect optimal adherence to HAART. Managing physicians need to counsel patients and ensure that they adhere to healthy life styles that will prevent eye infection or disease. HAART and appropriate antibiotics should be made available for treatment for opportunistic infection and human immunodeficiency retrovirus in a timely manner.

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Conflict of interest

The authors declare that there are no conflicts of interest regarding this publication of this paper

Consent

Written informed consent was obtained from the parents of this patient

Ethical approval was obtained for this study from the Ladoke Akintola University of Technology Teaching Hospital, Osogbo, Osun State, Nigeria. The protocol number assigned to this study is LTH/EC/2018/10/410

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