

# Herpes Zoster Ophtalmicus in a HIV positive patient: A Case Report

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## Abstract

We present a 27-years-old female patient, who was diagnosed HIV positive in Appelsbosch Hospital, rural South Africa, and subsequently presented with a severe herpes zoster ophtalmicus.

The patient had an initial CD4 cell count of 112 cell/mm<sup>3</sup> and a Viral Load of 1300000.

The patient was initially managed in our facility and eventually referred to the ophthalmologist who diagnosed her as having a severe uveitis or chorioretinitis.

## BACKGROUND

Herpes Zoster is a common infection caused by the human herpes virus 3, the same virus that causes chickenpox. It is a member of herpes viridae, the same family as the herpes simplex virus, Epstein-Barr virus, and cytomegalovirus. Herpes zoster ophtalmicus occurs when a latent varicella zoster virus in the trigeminal ganglia involving the ophtalmic division of the nerve is reactivated. Of the three divisions of the fifth cranial nerve, the ophtalmic is involved 20 times more frequently than the other divisions. HIV positive patients have a 15–25 times greater prevalence of zoster compared to the general population.

HIV is a major health problem in South African communities and although access to antiretroviral treatment has greatly improved, patients still arrive very late to clinics and hospitals

Despite all the efforts patients still arrive late to the HIV/AIDS management services and with advanced immune deficiency. Severe forms of opportunistic infections and complications are common.

## CASE

A 27 years old female HIV positive patient presented with history of smear positive tuberculosis early in 2006 as well as chronic diarrhoea, oral sores, hepatitis B infection and prolonged fever.

The patient had an initial CD4 cell count of 112 cell/mm<sup>3</sup> and a Viral Load of 1300000. She was also found to have a

Hepatitis B surface antigen positive.

She presented to our clinic in September of the same year with very swollen eyes, conjunctivitis, severe pain and multiple sores extending from the forehead to the right orbital area and the nose. (picture1)

Considering the HIV status of the patient as well as the clinical picture, a diagnosis of Herpes Zoster ophtalmicus was made and the patient was admitted to the hospital with the following treatment: oral acyclovir, amytriptiline, panado and codeine as well as local treatment for the secondary infection of the skin.

The patient gradually improved and continued treatment as outpatient.

A month later the patient came for follow up and she was still complaining of continuous headache, painful right eye and persistent tears from the same eye.

She was referred to the Ophthalmologist who diagnosed her as having probable severe uveitis and chorioretinitis and prescribed spersadex, zovirax ophtalmic ointment and atropine drops.

In subsequent visits the patient complained of pains on the affected area what correspond with the diagnosis of post-herpetic neuralgia.

Pain and itching persisted and the patient continued to report them in subsequent visits.

The patient completed TB treatment at a later stage and preparations were made for her to commence Highly Active Antiretroviral in October 2007.

**Figure 1**

Picture 1: First presentation



**Figure 2**

Picture 2: First presentation



**Figure 3**

Picture 3: One month after the first visit to our clinic.



**Figure 4**

Picture 4: One month after the first visit to our clinic



**Figure 5**

Picture 5: One month after the first visit to our clinic



**Figure 6**

Picture 6: Four months after the first visit to our clinic



**Figure 7**

Picture 7: Four months after the first visit to our clinic



## **DISCUSSION**

Herpes Zoster is caused by the human herpes virus 3 and the main risk factors are decreasing immune competence and increasing age.

Our patient was a known HIV positive patient at the time and with evidence of other opportunistic infections prior to the presentation with Herpes Zoster.

Herpes Zoster Ophthalmicus can present with extra ocular and ocular manifestations.

Infection and inflammation secondary to zoster can affect virtually all adnexal, ocular and orbital tissues.

## **PRODROMAL STAGE**

- Flu-like illness with fatigue, malaise, and low grade fever and chills that last up to one week before the rash over the forehead appears
- Pain: usually non-painful actions, like putting on a hat and combing hair may be very painful in about 60% of patients.

## **RASH**

- Erythematous macules appear along the involved dermatome
- Over several days these progress into papules and vesicles, and later pustules, which rupture and crust, taking several weeks to heal
- HIV positive patients may have a generalized vesicular rash and become very ill one to two

weeks after the onset of the disease, resulting in very severe visual impairment.

Our client presented late and with severe extra ocular features including pustules and crusting. (Pictures # 1 and # 2).

The skin manifestations of herpes zoster ophthalmicus strictly 'observes' the midline with involvement of one or more branches of the ophthalmic division of the trigeminal nerve, namely the supraorbital, lachrymal, and nasociliary branches. Because the nasociliary branch innervates the globe, the most serious ocular involvement develops if this branch is affected. Classically, involvement of the tip of the nose (Hutchinson's sign) has been thought to be a clinical predictor of ocular involvement.<sup>2</sup>

It is important to note that patients with a positive Hutchinson's sign have twice the incidence of ocular involvement, but one third of patients without the sign develop ocular manifestations.

The patient here discussed, presented with Hutchinson's sign and as we have explained she developed ocular complications. (Picture # 1)

Eyelids are commonly involved in herpes zoster ophthalmicus. The majority of patients will have vesicular lesions on the eyelids that resolve with minimal scarring.

Patients can develop blepharitis. This can lead to secondary bacterial infection, eyelid scarring, marginal notching, and loss of eyelashes, trichiasis and cicatricial entropion. Scarring and occlusion of the lachrymal punctual or canaliculi may occur.

Ptosis, secondary to oedema and inflammation may also occur.

In our patient important inflammation of the eyelids was noticed and subsequent scarring and ptosis developed. (Pictures # 6 and 7)

Conjunctivitis is one of the most common complications of herpes zoster ophthalmicus. The conjunctiva is often injected and oedematous and secondary infection with *Staphylococcus aureus* may develop thereafter.

Once the oedema of the eye subsided and we examined the conjunctiva the signs of conjunctivitis in our patient were evident. (Picture # 3)

Corneal complications occur in approximately 65% of cases with herpes zoster ophthalmicus.<sup>3</sup> This can result in significant visual loss.

Symptoms are pain, photosensitivity and poor vision.

Anterior uveitis occurs frequently with herpes zoster ophthalmicus. The inflammation is generally mild and transient, frequently causing a mild elevation of intraocular pressure. Without timely and appropriate treatment the course of the disease may be prolonged and can lead to glaucoma and cataract.

The retinitis of herpes zoster ophthalmicus is often associated with anterior uveitis. It presents as necrotizing retinitis with haemorrhages and exudates, posterior vascular occlusions and optic neuritis. These lesions begin from the retinal periphery. The vision deteriorates rapidly as the disease progresses.

Our patient was assessed by the ophthalmologist and given possible diagnosis of severe uveitis or chorioretinitis.

The patient was subsequently followed at our clinic and persistent itching and pains as well as gradual loss of vision on the affected eye were reported.

Pain and itching, late in the disease, are both acute and more common in HZO than in any other form of zoster. PHN is described as constant boring pain, sudden transient sharp pain, or pain elicited by usually non-painful stimuli. The mechanisms of PHN and PHI are not well understood but appear to be related to loss of peripheral sensory neurons.

Some of the complications that can appear in the course of herpes zoster ophthalmicus are:

1. Corneal neovascularization and scarring resulting in poor vision.
2. Neurotrophic ulcer with perforation.
3. Secondary bacterial or fungal infection.
4. Secondary glaucoma from uveitis or steroid treatment.
5. Necrotizing interstitial keratitis.
6. Post-herpetic neuralgia.
7. Vision loss from optic neuritis or chorioretinitis.

Herpes zoster ophthalmicus can be successfully managed by simultaneously combining systemic antivirals and tricyclic antidepressants to inhibit the infectious - inflammatory component and the pain. Antiviral agents may decrease the severity and duration of symptoms, if given early in the course of the illness.

Oral acyclovir therapy for herpes zoster ophthalmicus is found to:

1. Reduce viral shedding from vesicular skin lesions
2. Decrease systemic dissemination of virus
3. Reduce the incidence and severity of the most common ocular complications such as dendritic keratitis, stromal keratitis and uveitis. 4

Antibiotics should be used if secondary bacterial infection of the vesicles has occurred. Unfortunately, oral acyclovir has little effect on the incidence, severity, or duration of post-herpetic neuralgia.

### **CONCLUSIONS**

- In our environment HIV is a serious health problem and herpes zoster could be the initial presentation of the disease.

- Complications and atypical presentations of herpes zoster are common in a population with high burden of HIV/AIDS.
- Recognition of characteristic signs of herpes zoster allows for early clinical diagnosis and intervention.
- In rural settings where access to health services is difficult, the general population should be educated regarding the importance of early presentation and careful compliance with treatment as well as the importance of regular follow-ups.

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