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The Trigeminal Herpes Zoster and the Hutchinson Sign Presentation of 5 Cases and Literature Review

Mario Valerga*, Gustavo Bruni, Marisa Picollo, Oscar Bases, Elena Maiolo, and Marcelo Corti

División B, Hospital de Enfermedades Infecciosas "Francisco J. Muñiz", Ciudad Autónoma de Buenos Aires

Abstract

Herpes zoster consists of the reactivation of the varicella zoster virus that remains latent in the ganglia of the posterior roots of the spinal cord. Ophthalmic herpes zoster is due to the fifth cranial nerve, trigeminal nerve, in its ophthalmic branch involvement and can cause severe eye damage. A series of five cases of women with trigeminal herpes and human immunodeficiency virus (HIV) infection is presented. Timely antiviral treatment, the indication of highly active antiretroviral treatment and vaccination can prevent the development of serious ophthalmic lesions.

Keywords: Herpes Zoster; Ophthalmic Zoster; HIV, AIDS, Hutchinson Sign

Correspondence to: Mario Valerga, Hospital de Enfermedades Infecciosas Francisco J. Muñiz, Ciudad Autónoma de Buenos Aires, Buenos Aires, Argentina; E-mail: mvalerga@fibertel.com.ar

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Introduction

Herpes Zoster (Hz) is an acute disease, with unilateral metameric distribution, which is characterized by the development of vesicles grouped into an inflammatory, erythematous plaque, located on the path of a nerve. It is the consequence of the endogenous reactivation of primoinfection by the varicella-zoster virus (VVZ) that remains latent in the ganglia of the posterior roots of the spinal cord. Its incidence is three cases per thousand inhabitants a year, and the chances of suffering from this complication increase with age, due to immunosenescence associated with aging. More than 66 % of patients are over 50 years old and less than 10 % are under 20 years [1]. Always, an episode of Herpes Zoster in patients under 50, forces us to rule out immunosuppression factors. The causes that favor the development of HZ are usually unknown but are associated with some systemic diseases such as Hodgkin's lymphoma transplanted patients, those with prolonged treatments with corticosteroids or infection with human immunodeficiency virus (HIV). Other related situations include exposure to ultraviolet light, menstruation, pregnancy, fever, corneal traumas and stress [2]. HZ episodes in HIV patients occur with an incidence 10 times greater compared to the general population [3]. They can compromise one or several metamers and skin lesions usually persist for more days. In this population of patients, disseminated forms with the commitment of the central nervous system (CNS) are also frequent [3]. While it can affect any nerve, the commitment of the V trigeminal cranial pair is usually one of the most serious, due to the risk that the different structures that make up the ocular globe can compromise [4]. The Hutchinson sign consists of the appearance of vesicles that involve the tip of the nose of the affected side, corresponding to the territory of the nasociliary nerve.

There is a series of five cases of trigeminal HZ in women with HIV infection, in which the Hutchinson sign was observed.

Clinical Cases

Case 1: 40 -year -old patient, HIV + with the abandonment of antiretroviral treatment and history of esophageal candidiasis. She was hospitalized for half right face pain for 3 days of evolution accompanied by blurred vision in the right eye. The physical examination proved erythema and infiltration in the half right face that respects the midline, with an eruption formed by a bouquet of vesicles in the frontal region and tip of the nose (a sign of Hutchinson), bipalpebral edema in the right eye with epiphore and red eye (Figure 1). The TCD4+ lymphocyte count was 90 Cell/UL (9%) and the viral load (CV) for 80 211 copies/ml log10 4.9.

Figure 1: Erythema with vesicles and scabs in right half face that respects the midline, bouquet of vesicles in the frontal region and nose tip (sign of Hutchinson), marked bipalpebral edema in right eye. Herpes zoster of the ophthalmic branch v par.

The ophthalmological examination with a cleft lamp showed corneal edema with queratic precipitates and erosions. The background exam was normal.

Treatment with intravenous acyclovir was indicated at the dose of 10 mg/kg every 8 hours and topical in the form of an ocular ointment, more systemic corticosteroids, with good clinical response and without ophthalmological sequelae.

Case 2: 27 -year -old patient, HIV + without abandonment of antiretroviral treatment and background of syphilis and hepatitis B. She was hospitalized for presenting pain and feeling of swelling in the left half face for a week of evolution. For 48 hours, she had fever episodes of 38ºC. The physical examination observed erythema in the left half face concerning the midline, marked bipalpebral edema of the left eye, melicic scabs in the fins of the nose (a sign of Hutchinson) in the left malar region and upper lip with edema (Figure 2). The TCD4+ lymphocyte count was 120 cell/ul (20%) and the CV for HIV was 107,000 copies/ul log10 5.9. VDRL: Do not reactive. A Cleft lamp exam showed cornea edema with corneal precipitates. The background was normal.

Figure 2: Erythema in the left half face with respect of the midline with marked bipalpebral edema of the left eye, with vesicles and melicic scabs in the wing of the nose (sign of Hutchinson) in the left malar region and upper lip edema. Herpes Zoster with the commitment of the 3 branches of the V Cranial Paris.

Treatment with intravenous acyclovir was indicated at the dose of 10 mg/kg every 8 hours and antibiotic coverage with cyprophloxacin and clindamycin at usual doses due to the competitiveness of skin lesions, with a good clinical and ophthalmological response.

Case 3: HIV + 40 -year -old patient with the abandonment of antiretroviral treatment and background of cocaine and marijuana, tuberculosis, and syphilis addiction. She is admitted to present pain in the left half face and a blurred vision of a homolateral eye of 3 days of evolution with 38ºC fever. The physical examination of the left half face erythema that respected the midline, marked bilateral bipalpebral edema, epiphore, and crusty lesions in the frontal region and the upper eyelid (Figure 3) was found. The TCD4+ lymphocyte count was 80 Cell/UL (21%) with a HIV plasma CV of 100,000 copies/ml log10 5.1. VDRL: Do not reactive. The examination with a cleft lamp: allowed us to verify the existence of corneal edema with precipitates in the left eye.

Figure 3: Erythema of the left half face that respects the midline, marked bilateral bipalpebral edema, epiphore, and vesicle-coastal lesions in the frontal region and upper eyelid. Herpes zoster of the ophthalmic branch V cranial par.

Normal right eye. The background showed no alterations of significance.

Intravenous acyclovir was indicated at the dose of 10 mg/kg every 8 hours and antibiotic coverage with ciprofloxacin and clindamycin due to the impetiginization of skin lesions, with a good clinical and ophthalmological response.

Case 4: HIV + 49 -year -old patient with the abandonment of antiretroviral treatment and background of cocaine and alcohol addiction, tuberculosis, oral candidiasis and intestinal isosporosis. She is admitted to present fever (38ºC) and deterioration of the state of consciousness.

On the exam, she was stuporous, feverish, and without neck stiffness. The presence of erythema was observed in the right half face concerning the midline with vesicular and crusty lesions that compromised nose fins (Hutchinson sign) (Figure 4). Brain tomography was performed without contrast that only showed cortical atrophy and slight ventricular dilation; The lumbar puncture allowed a clear CSF that showed no alterations. The PCR for the herpes virus in CSF was negative. The TCD4 + lymphocyte count was 10 cell/ul (3%) and the HIV CV of 300,000 copies/ml log10 5.9. Cleft lamp examination allowed for observing corneal edema with erosions and precipitates. The background was normal.

Figure 4: Erythema in right half face with respect for the midline with vesicular and crusty lesions that compromise the nose wing (Hutchinsion sign). Herpes zoster of the Superior and Upper Maxillary branches of the V Cranial Par.

Treatment with intravenous acyclovir was indicated at the dose of 10 mg/kg every 8 hours and as an ocular topic in the form of ointment and antibiotic coverage with cyprophloxacin and clinical and ophthalmological.

Case 5: 46 -year -old patient HIV + Low abandonment of antiretroviral treatment with emricitabine, Tenofovir, more raltegravir with a history of tuberculosis. She consults for presenting pain in the right half face, blurred vision and epiphore of 48 hours of evolution. The exam shows erythema with vesicles in the right half face that respects the midline, bipalpebral edema and lacrimal secretion (Figure 5). The TCD4+ lymphocyte count was 207 cell/ul (21%) and the HIV plasma CV was 653 copies/ml log10 2.18. Cleft lamp examination did not evidence corneal lesions. The background was normal.

Figure 5: Erythema with vesicles in right half face that respects the midline, bipalpebral edema and tear secretion. Herpes zoster of the ophthalmic branch V cranial par.

Acyclovir was indicated orally and in outpatient monitoring, with a good clinical response.

Discussion

Before the introduction of high-activity antiretroviral therapy (TARGA), it was estimated that the incidence of Herpes Zoster was 10 to 30 times higher in HIV-positive patients compared to the general population. Several studies reported incidence rates of 2.5 to 3.2 cases/100 people/year in different positive HIV patients [5]. After the introduction of the Targa, the incidence of Herpes Zoster was reduced, attributing this situation to the restoration of the immune response. However, the incidence remains higher in patients with retrovirus infection in the era of the targa than in the general population [6].

The Ophthalmic Herpes Zoster (OHZ), results from the reactivation of the viral genome of the VVZ located in the Gasser ganglion. OHZ represents 10 to 20 % of all cases of Herpes Zoster and ophthalmic lesions occur in 50 % of patients [7].

The OHZ presents in its clinical evolution a prodromic phase characterized by pain, paresthesia and pruritus in the affected area, an acute phase that begins 48 to 72 hours after the previous period and is characterized by presenting maculo-papulous eruption that evolves to vesicles in 12 to 24 hours and scabs in 7 to 10 days, and a chronic phase determined by the so-called postherpetic neuralgia. The most frequent ocular complications are conjunctivitis, epiescleritis, keratitis, uveitis, cataract formation and postherpetic neuralgia itself [8].

The severity of the OHZ associated with a late start of treatment is that it can lead to chronic ophthalmic lesions, postherpetic neuralgia and cutaneous healing lesions, including the development of lagoftalms.

Marsh9, describes three stages of eye commitment:

1) Acute ophthalmic lesions, which develop within the first three weeks of the eruptive stage;

2) Chronic ophthalmic lesions that can persist for more than 10 years and

3) Recurring ophthalmic lesions that can reappear up to 6 years after the acute episode.

From the clinical point of view, the OHZ can be presented with blurred vision, pain, photophobia, conjunctival secretion, and red eye. In 1865, Hutchinson described the sign that bears his name and that consists of the coexistence of vesicular lesions in the wings or at the tip of the nose with eye injuries. This sign is verified in 70% of cases, so, if not present, ophthalmic lesions are less likely [10]. In this series, we verify this sign in 3 of the 5 patients (Table 1).

Table 1: Trigeminal herpes zoster in patients with HIV/AIDS disease. LT CD4 +: T lymphocytes CD4 + - CV: Viral load - Targa: Antiretroviral treatment of great activity - HS: Hutchinson sign.

	Age	LT CD4+/uL (%)	CV (copies/mL / Log_{10})	Corneal Compromise	TARGA	HS
Case 1	40	90 (9%)	80211 - 4.9	SI	NO	SI
Case 2	27	120 (20%)	107000 - 5.9	SI	NO	SI
Case 3	40	80 (21%)	100000 - 5.1	SI	NO	NO
Case 4	49	10 (3%)	300000 - 5.9	SI	NO	SI
Case 5	46	207 (21%)	653 - 2.18	NO	SI	NO

The diagnosis is clinical and the early start of antiviral treatment with acyclovir or valacyclovir is recommended, preferably systemic when ophthalmic damage is checked.

The establishment of treatment in the first 72 h of the clinical picture decreases the duration of postherpetic neuralgia and improves therapeutic results. The standard duration of antiviral therapy is 7-10 days. However, the VVZ can persist in the cornea for up to a month, which is why in elderly patients and in immune compromised it is reasonable to prolong the duration of treatment, although there are no clinical trials that demonstrate the effectiveness of this behavior [11].

In the case of the patients described (Table 1), the presence of the Hutchinson sign was verified in three of those who had the corneal commitment and we found a correlation between low TCD4 +lymphocyte count, high levels of viral load and absence of Targa with the existence of ophthalmic commitment. The adhesion appropriate to the TARV, with the improvement of immunological parameters, would seem to protect against serious forms of the disease, although it does not prevent its presence.

These findings agree with the observations of other authors [12].

Herpes Zoster vaccines are indicated to prevent VVZ recurrence. In HIV seropositive patients, over 50 years of age and with TCD4 +> 200 cell/ul lymphocytes, the vaccine is used to live attenuated viruses in a single dose [13].

Recently, an inactivated recombinant vaccine has been incorporated with an adjuvant called Hz/its, with broad immunogenic power. Since vaccines to virus attenuated have a theoretical risk of producing serious diseases in immunosuppressed patients, Hz/would have the potential to benefit patients with HIV/AIDS disease, especially those with TCD4+ <A 200 lymphocyte counts Cell/ul [13,14].

In conclusion, the herpes zoster ophthalmic is especially important due to the risk involved for the eye in general and the possibility of ocular surface damage. The timely and effective treatment of the ophthalmic herpes Zoster is the only alternative to avoid definitive ocular damage. The indication of Targa does not prevent the development of Herpes Zoster (in fact, it can occur as a frequent manifestation of inflammatory syndrome of immune reconstitution) but makes the development of serious ways of VVZ disease less likely. Herpes Zoster vaccination is presented as the only option to avoid the recurrence of the VVZ.

Declarations

The authors declare that they have no conflicts of interest, that the work has been approved by the ethics committee responsible in the workplace, and do not declare means of financing of the work carried out.

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