



## CASE REPORT OF KOEBNERIZATION OF HERPES ZOSTER LESIONS BY PSORIASIS IN A HIV POSITIVE PATIENT

<sup>1</sup>Ehiaghe L Anaba, <sup>2</sup>Adekunle O George, <sup>2</sup>Adebola O Ogunbiyi

<sup>1</sup>Department of Medicine, Lagos State University Teaching Hospital, Lagos, Nigeria.

<sup>2</sup>Department of Medicine, University College Hospital, Ibadan, Nigeria.

**Corresponding author:** Anaba L Ehiaghe; Email - ehianaba@yahoo.com

### ABSTRACT

**Background:** Koebner's phenomenon (isomorphic response or isotopic response) is defined as the occurrence of a new typical skin disease at the site of another unrelated, completely different and already healed skin disease. Skin disease have been reported in Human Immune deficiency disease (HIV). These skin disease can serve as diagnostic a clues to immunosuppression, be used in the staging of HIV disease and can be multiple.

Some reports of koebnerization of skin diseases in HIV have been documented.

**Case report:** We report the case of a 48 year old male patient, newly diagnosed with HIV disease. He also developed psoriasis and these psoriatic lesions were found on healed multi-dermatomal lesions of herpes zoster.

**Keywords:** Köebner's Phenomenon, HIV, psoriasis, Zoster, Psoriasis.

### INTRODUCTION

Skin manifestations of human immune virus (HIV) disease are well documented in literature.<sup>1-4</sup> These skin manifestations have been used to stage and indicate the presence of HIV infection.<sup>4-7</sup> Herpes zoster (HZ) and psoriasis are some of the skin manifestations of HIV infection with more frequent recurrence of HZ in the setting of HIV infection.<sup>8-11</sup> We report a case of koebnerization of herpes zoster lesion with psoriasis.

was newly diagnosed of HIV disease (retroviral infection) and not yet on antiretroviral medications. Rashes involved the trunk, upper limbs, groin, lower limbs with sparing of the face and scalp. The rashes were pruritic. Seven years prior to this, he had a vesicular rash which affected the left flank and back with a recurrence 3 months before presentation.

Examination revealed a chronically ill looking male. He had well circumscribed scaly, annular lesions on his trunk and extremities with an erythematous hue. There were no nail changes and the scalp was not involved. A clinical diagnosis of psoriasis was made. Also, a healing hyperpigmented multi-

### CASE REPORT

A 48-year old male was referred to the dermatology clinic from the HIV clinic on account of rashes of a month's duration. He



dermatomal lesion was noted on the left flank which did not cross the midline. Lesions consistent with psoriasis were noted to be superimposed on this dermatomal lesion. An assessment of Psoriasis with Koebner's phenomenon in a newly diagnosed HIV patient was made.

A skin biopsy was done and it was consistent with psoriasis. Retroviral infection was confirmed with Western blot. Viral load was 155,342, CD<sup>4</sup> count was 28cells/mm<sup>3</sup>, haemoglobin concentration was 14.1g/dl, total WBC was 3.2x10<sup>9</sup>/l, HbsAg was negative.

Following commencement of antiretrovirals, a mix of betamethasone cream and 5% sulphursalicylic acid ointment, psoriatic rashes cleared with residual multiple hyperpigmented post-inflammatory macules and patches. The different skin lesions are shown in figures 1-6.



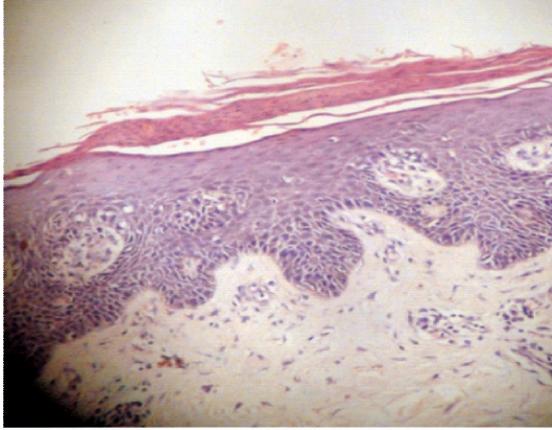
**Figure 1:** Patient with extensive lesions of Psoriasis with concentration on the left flank



**Figure 2:** Concentration of Psoriasis lesions on left flank overlying HZ scar



**Figure 3:** silvery, scaly erythematous rashes of Psoriasis



**Figure 4:** Skin biopsy histopathology; H&E x 10

Epidermal acanthosis with regular elongation of the rete ridges with thickening of their lower portions, pallor of the upper layers of the epidermis, diminished granular layer, confluent parakeratosis and presence of mild dermal infiltration by chronic inflammatory cells.

#### PSORIASIFORM DERMATITIS



**Figure 5:** Post treatment, Lesions of Psoriasis resolved with residual hyperpigmentation



**Fig. 6:** Post Psoriasis treatment; Hyperpigmented dermatomal scar of HZ on the left flank

#### DISCUSSION

The prevalence of retroviral (HIV) disease in Nigeria is low and documented to be 3.2%.<sup>1,2</sup> However, skin diseases are documented to occur commonly in Nigeria as in other countries in the setting of HIV disease<sup>3-6,13</sup> especially when viral load is high and the CD4<sup>+</sup> counts are low.<sup>3-6,8</sup> Our patient had a high viral load and a low CD4<sup>+</sup> count. When viral load is high and the CD4<sup>+</sup> count is low, individuals are unable to mount an immune response making them susceptible to infections, infestations and inflammatory diseases.<sup>5</sup>

Various studies report the occurrence of psoriasis<sup>9,11</sup> and herpes zoster infection in HIV disease<sup>5,7,14</sup> but not their co-occurrence. Retroviral disease is an independent risk factor for psoriasis, a chronic papulosquamous skin disease of unknown aetiology thought to be a T-cell-mediated autoimmune disorder of keratinocyte proliferation.<sup>9,15</sup> Psoriasis appears usually after seroconversion in patients with no past history of this disease such that the condition may be the initial presentation of HIV infection.<sup>15</sup> As the CD4 count declines,



separate lesions enlarge, fuse to form extensive flat plaques with an irregular outline as occurred in our patient.<sup>15</sup>

Psoriasis is documented to be worse and difficult to treat in individuals who have retroviral disease,<sup>1,16</sup> is more prevalent in those who have a high viral load and not yet taking antiretroviral medication.<sup>2,8</sup> Our patient had a high viral load, low CD4<sup>+</sup> count and was antiretroviral medication naïve.

Herpes zoster is a localized disease caused by reactivation of the HZ virus with vesicular eruptions within one or two adjacent dermatomes.<sup>7,14</sup> Herpes zoster is frequently seen in and can be an early marker of retroviral disease.<sup>7</sup> It is more recurrent in HIV disease than in the normal population,<sup>7,14</sup> and recurrent HZ signifies diminishing immunity as was seen in our patient.<sup>5</sup>

In advanced HIV disease, multi-dermatomal lesions are more common.<sup>5</sup> Our patient had a recurrence of HZ which was multi-dermatomal. His first lesions was 7 years before presentation, he did not have a test for HIV at that time. This may have been when he should have been diagnosed with HIV. Baseline CD4 lymphocyte count is the most significant risk factor associated with development of HZ.<sup>5,6</sup>

Koebner phenomenon (KP) is defined as, the occurrence of a typical new skin disease at the site of another unrelated, completely different and already healed skin disease.<sup>17,18</sup> This phenomenon is also termed “isotopic response” or isomorphic response.<sup>17,18</sup> Koebner's phenomenon was initially used in lesions of psoriasis

appearing on healed HZ lesions as occurred in this patient. However, KP now applies to a plethora of diseases.<sup>17</sup> In HIV disease, KP as was seen in our patient is a helpful diagnostic feature as it alerts you to the occurrence of multiple dermatoses which is indicative of immunosuppression.<sup>5,19</sup> Koebner's phenomenon with psoriasis, HZ, occurring in HIV disease patients like our patient has not been documented in literature. The rarity of the co-occurrence of HIV, HZ and psoriasis has necessitated this case report.

## CONCLUSION

Although Nigeria has a low prevalence of HIV disease, skin manifestations of HIV have been documented. We have reported this koebnerization of herpetic lesions to highlight the co-occurrence of dermatosis in a retroviral disease patient with a high viral load and a low CD4<sup>+</sup> count.

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