Eosinophilic pustular folliculitis in a 31-year-old Filipino male treated with narrowband ultraviolet B radiation: A case report

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Introduction: Eosinophilic Pustular Folliculitis (EPF) is a chronic cutaneous manifestation of Human Immunodeficiency Virus (HIV), which manifests as folliculo-papular lesions commonly appearing on the chest, arms, head, and neck. The associated pruritus is so intense that it has been described to be akin to scabies. Various treatment options include Antiretroviral Therapy (ART), oral antihistamines, topical corticosteroids, prednisone, isoretinoin, itraconazole, metronidazole, narrowband ultraviolet B (NBUVB), and ultraviolet A with and without psoralen in order to address the pruritus.

Case Summary: We report a case of a 31-year-old HIV-positive male patient who presented with an 8-month history of pruritic, erythematous to hyperpigmented follicular papules on the upper trunk and extremities. Skin punch biopsy revealed a moderately dense perifollicular infiltrate of numerous eosinophils and lymphocytes.

Conclusion: The patient had excellent response to NBUVB after being unresponsive to a multitude of topical and systemic medications and being on the ART for five months. Thus, NBUVB is an effective treatment option for both the resolution of lesions and pruritus among patients with HIV-EPF (Human Immunodeficiency Virus-associated Eosinophilic Pustular Folliculitis) who have failed ART and other therapies.

Keywords: eosinophilic pustular folliculitis, HIV, AIDS, NBUVB

INTRODUCTION

EPF is a sterile inflammatory dermatosis, which can present in patients with HIV infection. Known as immunosuppression-associated EPF (IS-EPF), or specifically HIV-EPF, it usually occurs when there is a low CD4 count of less than 250 to 300 cells/mL. It is characterized by pruritic small pink to red, folliculocentric papules, and less commonly pustules. ART is the standard therapy. The clinical course is waxing and waning; in many, the disease may last for years. The goal of treatment is to address the underlying HIV infection and alleviate the accompanying pruritus, which can be excruciating.

We present a case of HIV-EPF wherein the lesions increased in number after treatment with ART, but resolved with ultraviolet B (UVB) radiation. The patient’s cutaneous manifestations and pruritus were successfully treated with NBUVB.

CASE REPORT

A 31-year-old Filipino male presented with multiple well-defined erythematous to hyperpigmented pruritic follicular papules on the dorsum of the right hand of eight months duration. The lesions gradually appeared on all extremities despite self-treatment of permethrin 1% lotion, precipitated sulfur + zinc oxide + resorcinol + salicylic acid (Katialis) ointment, and loratadine 10 mg/tablet. There were no other associated signs and symptoms such as fever, weight loss, loss of appetite, headache, oral thrush, cough, colds, and lymphadenopathies. The patient’s sexual history revealed multiple unprotected sexual encounters with male and female partners. Blood tests were confirmatory for HIV. CD4 cell count was markedly decreased at 125 cells/mm3.

A skin biopsy specimen from the dorsum of the right hand showed a moderately dense perifollicular infiltrate of numerous eosinophils and lymphocytes. This was consistent with HIV-EPF.

The patient received efavirenz + lamivudine + tenofovir disoproxil fumarate 600 mg/300 mg/300 mg for five months and hydroxyzine 10 mg daily. Clobetasol propionate 0.05% cream was also applied for two weeks. Intralesional steroid injection (5 mg/mL) on the prurigo-like nodules on the arms was done. The patient was also given oral prednisone (0.5 – 1 mg/kg) for a total of two months tapered through alternate-day administration.

Despite the above treatments and eventual rise in CD4 cell count to 294 cells/mm3, the lesions along with...
the pruritus persisted. Hence, NBUVB with an initial dose of 300 mJ/cm2 was administered. The treatment lasted for five months. For the first month at twice a week intervals, the dose was increased by 20% increments per treatment. The following month, the patient was only able to go when available at about once or twice a week, thus, decreasing increments of 10% or 5% were done depending on the frequency of visits. The patient started to exhibit improvement at 1000 mJ/cm2. After two months, his lesions were 90 percent clear. On the third to fifth month of treatment the frequency was decreased to once every 2 weeks. Then succeeding treatments were decreased by 20%. On the 3rd to 5th month the patient received the maintenance dose. The dose was at 400 mJ once every two weeks for 3 months. There were episodes of erythema and burning sensation during the second month of NBUVB treatment for more than 3 days, but this was described as bearable by the patient. The doses were decreased on these instances and the patient tolerated the sessions well in the next remaining months. At the end of the NBUVB treatment, the old lesions were noted to have flattened and decreased in number. No new lesions developed. Pruritus severity decreased to 1/10 from a previous score of 8/10 (Fig. 2 b).

The patient was then advised to apply topical emollients. No recurrence of lesions seen during the 6th month follow up.

**DISCUSSION**

The Philippines is facing one of the fastest-growing HIV epidemics in the Asia-Pacific region dwarfing the overall HIV prevalence rate for Asia-Pacific and Sub-Saharan Africa. It is imperative that dermatologists become vigilant when encountering high risk individuals who seek medical advise. More than 90% of HIV infected patients develop skin lesions at some time throughout the course of the disease, often revealing signs of the underlying severity of the disease.

HIV-EPF is characterized by heavily excoriated, follicular, erythematous papules and pustules, which mainly affects the face, neck, upper trunk, and extremities in patients with concurrent HIV infection. It is common in advanced HIV disease and is associated with CD4 cell count less than 250 to 300 cells/mL. The clinical course of HIV-EPF is often chronic
and persistent. The goal of the treatment is to alleviate the pruritus and treat the underlying HIV infection. ART has been shown to ameliorate EPF particularly when CD4 cell counts rise above 250/mm3. In our patient’s case, despite an increase in CD4 cell count to 252 cells/mm3 and eventually to 294 cells/mm3, there was still persistence of pruritus and presence of lesions.

HIV-EPF may also be seen as part of an immune reconstitution inflammatory syndrome (IRIS) wherein cases appear to worsen within 3 to 6 months of the initiation of ART and after immune restoration to CD4 cell counts rise above 200 cells/mL. It is also considered a paradoxical clinical deterioration wherein the reaction occurs due to an exaggerated immune response to preexisting microbial host or other antigens at a time when CD4 T cell counts are rapidly increasing. Risk factors for developing EPF in HIV patients include male gender, lower baseline CD4 cell count, shorter interval between initiating treatment of an infection and starting ART, rapid fall in HIV viral load after initiation of ART, and higher baseline viral load during ART. The patient indeed had IRIS, with the following factors present: male gender, low baseline CD4 cell count, and clinical worsening of lesions albeit an increase in the CD4 cell count after ART initiation. Management for IRIS includes continuation of antiretroviral medications, systemic steroids; severe cases may require discontinuation of ART. In our patient’s case, the ART regimen was continued, and systemic steroids were initiated.

Various treatments, including systemic antihistamines, topical steroids, permethrin cream, photochemotherapy (PUVA), and broadband UVB (BB-UVB) have been attempted, often with failure to suppress the intense itch associated with HIV-EPF. NBUVB is the gold standard treatment with a response within the first 2-3 weeks of administration. Nomura et al reported that NBUVB can be given 2-3 times a week, starting at ½ minimal erythema dose with increments of 10-50 % for approximately two months, which effectively reduced pruritus and led to resolution of the lesions. In a report by Kuwano et al, a patient with HIV-EPF was started on NBUVB at 100 ml/cm2. The treatment was given twice a week and the dose was increased by 100 ml/cm2 at each exposure. There was improvement of the pruritus at 500 ml/cm2. At 800 ml/cm2, no new lesions developed. The treatment was maintained at 900 ml/cm2 every week for one year. Throughout this period, there were times when NBUVB treatment was interrupted due to complications of skin pain and erythema during which new eruption of lesions and pruritus occurred. Our patient had NBUVB twice weekly with increments of 20% dose increase every session. Lesions resolved using this conservative approach. Moreover, maintenance treatment was given for only two months. No lesions recurred over the 6-month follow-up period.

CONCLUSION

HIV-EPF is a chronic inflammatory skin disorder associated with HIV infection, usually presenting at the advanced stages of the disease when a patient’s CD4 cell count is low. It is an important clinical marker of HIV infection, especially in patients who present with no other signs and symptoms besides the cutaneous manifestation. Diagnosis depends upon clinical suspicion, an appropriate presentation (i.e., intensely pruritic follicular lesions on the upper trunk, face, neck, and extremities), and histologic confirmation via skin biopsy of an unexcoriated lesion. Management can be challenging, especially since pruritus is intractable to treatment, and lesions can worsen while on the ART regimen. NBUVB is an effective treatment option for both the resolution of lesions and pruritus, among patients who show a poor response to most therapeutic options.

REFERENCES