A Distinct Clinicopathological Presentation of Cutaneous Dermatophytosis Mimicking Autoimmune Blistering Disorder

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Abstract
Infectious diseases can clinically present as vesiculobullous disorders. Direct immunofluorescence (DIF) study of skin biopsy helps distinguish true autoimmune blistering disorders from other conditions. In many situations, even DIF findings in infections disorders imitate autoimmune process. Here, we describe a case of 29-year-old female with extensive dermatophytosis having presentation mimicking bullous pemphigoid both clinically and histopathologically including DIF findings.

KEY WORDS: Bullous lesions, bullous pemphigoid, direct immunofluorescence positivity, tinea corporis

Introduction
Bullous pemphigoid (BP) has been associated with drugs, malignancy, ultraviolet therapy, and psoriasis. There are reports of scabies infestation inducing or mimicking BP.[1] Few cases of bullous tinea corporis have been described as well, but direct immunofluorescence (DIF) findings in those reports are not documented.[2-5] One case of bullous tinea pedis with DIF positivity has been reported.[6] Few other infections such as orf and herpes can also rarely present with positive DIF findings.[6] Pathophysiological mechanisms for deposition of immune reactants are not very clear in this type of infectious disorders. We describe a case of 29-year-old female who presented with initial clinical, histological, and DIF findings suggestive of BP eventually turned out to be a case of cutaneous dermatophytosis.

Case Report
A 29-year-old female patient presented to the Department of Dermatology with multiple bullous lesions and erosions left by ruptured bullae over background of erythematous plaques which were coalescing at most places involving approximately 70% of body surface area for the past 20 days [Figure 1]. There was no mucosal involvement. Most bullae were filled with clear fluid; only a few had purulent material-forming hypopyon. Few lesions also had hemorrhagic fluid in the cavity. There were few crusted lesions over eyelids and forehead and single bullous lesion with purulent fluid over the tip of the nose without any background of erythema. The patient had a history of itching for the past 3 months. There was no history of application of any topical agents. On further investigation, patient had raised total leukocyte count (11,360) and 6–8 pus cells per high-power field in urine, rest of all hematological, and biochemical tests were within normal limit. Serology for HIV, hepatitis B, and C were negative. Considering the clinical differential diagnosis of BP and linear IgA dermatosis, skin biopsy followed by DIF study was advised. Skin histopathology revealed normal orthokeratotic stratum corneum, mild acanthosis, subepidermal blister with chiefly...
eosinophilic infiltrate in blister cavity, and in superficial dermis [Figure 2]. DIF from the perilesional skin showed positivity for IgG and C3 in a linear pattern with the intensity of +3 [Figure 2].

Pending reports of histopathology and DIF keeping in consideration clinical diagnosis of BP, the patient was hospitalized and given intravenous 8 mg dexamethasone along with other supportive therapy. After starting therapy all bullous lesions and erythematous plaques cleared within 2 days. Histopathology and DIF reports received on day 3 and were in concordance with clinical diagnosis so same treatment continued for 5 days. On the 6th day of therapy, patient developed multiple tiny papular lesions over the same sites where previously large erythematous plaques were present [Figure 3]. Potassium hydroxide mount examination of skin scraping was performed which was positive for dermatophytes. Skin scraping from lesions sent for fungal culture came out to be positive for *Trichophyton mentagrophytes.* Periodic acid–Schiff stain [Figure 3] also confirmed dermatophytes in stratum corneum, but not in blister cavity.

After these reports steroid was withdrawn from patient’s prescription. Antifungal therapy with oral itraconazole 100 mg twice daily, topical luliconazole and antihistamines were initiated and continued for 1½ months. On completing therapy, patient achieved clinical and mycological cure for dermatophytosis. Repeat DIF study after completion of antifungal therapy was negative for any immune complex deposition. The patient had no recurrence of either bullous lesions or any other skin lesions suggestive of dermatophytosis during 6 months follow-up. Postinflammatory hyperpigmentation at the site of previous bullous lesions was persistent [Figure 4].

**Discussion**

Our patient had bullous lesions scattered all over plaques of tinea, and they were not limited just to the borders of the plaques which was different from previously reported cases of tinea corporis bullosum annularis.\[^2-4\]

Our patient had clinical presentation, histology and DIF findings mimicking BP which were present in the background of plaques of dermatophytosis. This phenomenon could be explained by the possible
hypothesis of antigenic mimicry. The presence of fungus in stratum corneum could have invoked intense inflammatory response due to hypersensitivity which, in turn, might have led to deposition of the immune complex at the dermoepidermal junction due to antigen mimicry. Clearance of antigenic stimulant with oral antifungal therapy could explain the absence of relapse. Indirect immunofluorescence study was not available at our center so pinpointing exact antigen was not possible. DIF is considered as a helpful diagnostic tool for autoimmune blistering disorders, but one should be cautious that infections can also give rise to similar DIF reactivity due to antigenic mimicry or some other yet unknown mechanism.

Considering increasing number of cases of dermatophytosis in tropical countries, it is helpful to keep in mind its unusual presentations which include bullous lesions with DIF reactivity mimicking autoimmune blistering disorders.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient have given her consent for her images and other clinical information to be reported in the journal. The patient understand that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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