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Epidermolysis Bullosa Acquisita: A Case Report

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Conflict of interest: None declared

Patient: Male, 79-year-old
Final Diagnosis: Epidermal bullosa acquisita (differential: anti-epiligrin variants of pemphigoid)
Symptoms: Multiple blisters on hands and feet
Medication: Dapsone
Clinical Procedure: Direct immunofluorescence (DIF) • hematoxylin and eosin (H&E) punch biopsies
Specialty: Dermatology

Objective: Rare disease

Background: Epidermolysis bullosa acquisita is a rare, subepithelial bullous disorder, which is distinguished from other autoimmune blistering diseases by the production of antibodies against type VII collagen.

Case Report: Here, we describe the case of a 79-year-old male resident of the Northern Mariana Islands who presented to the clinic with multiple blistering skin lesions.

Conclusions: The primary focus of treatment is to prevent disease progression and serious complications of scarring (including blindness and respiratory obstruction) by avoiding physical trauma and suppressing the immune systems with agents, including corticosteroids, colchicine, dapsone, methotrexate, and cyclophosphamide. Successful treatment of the condition should involve a multidisciplinary team of medical professionals with regular monthly follow-ups during periods of active disease.

MeSH Keywords: Collagen Type VII • Epidermolysis Bullosa Acquisita • Micronesia

Abbreviations: **DEJ** – dermal-epidermal junction; **DIF** – direct immunofluorescence; **EBA** – epidermolysis bullosa acquisita; **IEM** – immunoelectron microscopy

Full-text PDF: https://www.amjcaserep.com/abstract/index/idArt/919432

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Background

Epidermolysis bullosa acquisita (EBA) is a rare, subepithelial bullous disorder, typically developing in adulthood [1,2]. Clinically similar to other autoimmune blistering diseases, the condition is distinguished by the production of antibodies against type VII collagen [2]. A major anchoring fibril at the dermal-epithelial junction, disruption of type VII collagen results in recurrent skin and mucosal blistering, carrying with it significant long-term morbidity including potential blindness, esophageal stricture, and joint contracture [3]. Here, we describe the case of a resident of the Northern Mariana Islands who presented to the clinic with multiple blistering skin lesions.

Case Report

A 79-year-old man presented to the clinic with bullae and skin erosions of the bilateral hands and feet, as well as erosions and scaling of the lip and upper extremities. Within 24 h, the patient developed worsening blister formation over the palms, wrists, and lower lip. He was admitted to an outside hospital and treated with prednisone 40 mg IV q12hours for 5 days. Follow-up as an outpatient demonstrated healing of the upper-extremity lesions, but the patient had developed blisters on his bilateral hands (Figure 1). His past medical conditions included hypertension, hyperlipidemia, stage 3 chronic kidney disease, moderate aortic insufficiency, and atrial flutter. There was no personal or family history of autoimmune conditions or skin cancer.

Physical examination revealed multiple tense, heterogeneous bullae on the dorsal bilateral hands; hemorrhagic crusting at the right upper arm; denuded skin with prominent bullae formation of the right foot; and healing ulceration of the left oral commissure. Perilesional direct immunofluorescence (DIF) and lesional H&E punch biopsies of the left 3rd and 4th web space were obtained. An ophthalmological examination demonstrated no evidence of ocular involvement. Tissue analysis demonstrated epidermal-dermal separation with findings typical of a wide variety of mucocutaneous blistering disorders, including a thin layer of hyperkeratosis/parakeratosis with diminished granular cell layer, moderate spongiosis, bullous fluid containing neutrophils and eosinophils, and minimal superficial perivascular mixed inflammation. Direct immunofluorescence staining revealed moderate-to-thick linear IgA, IgG, and C3 deposition along the dermal-epidermal junction (DEJ), a staining pattern favoring EBA, although differential included anti-epiligrin variants of pemphigoid.

The patient was continued on daily oral prednisone 40 mg. Follow-up evaluations demonstrated clinically improving blistering skin lesions and erosions, but the patient's course was complicated by the development of MRSA abscesses of the left knee and thigh, likely due to chronic immunosuppression. The cutaneous abscesses were drained in the clinic and successfully treated with a course of doxycycline and daily wound packing. The patient subsequently trialed colchicine, but due to adverse effect of medication was transitioned to dapsone after G6PD status was confirmed, leading to effective control during flares of the condition.

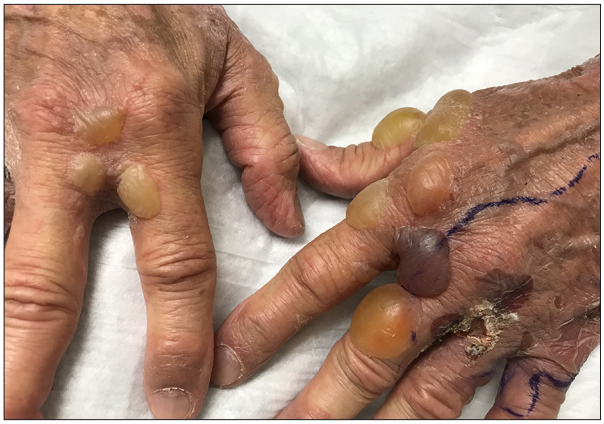

Figure 1. Multiple tense, heterogeneous bullae on the dorsal bilateral hands.

Discussion

EBA is a rare autoimmune mucocutaneous blistering disorder, typically developing in adulthood, that involves the production of antibodies against type VII collagen, which is the principle structural protein in the DEJ. Deposition of type VII collagen antibodies in basement membrane destabilizes anchoring fibril integrity, resulting in separation of the epidermis from the underlying dermis.

Classically, EBA has been characterized by skin fragility and the development of multifocal, noninflammatory, tense subepithelial blisters overlying sites of repeated minor trauma – specifically, the hands, feet, and extensor surfaces – resulting in subsequent skin erosions and scarring (1). However, type VII collagen antibodies have also been implicated in inflammatory subtypes of EBA, mimicking the clinical features typically associated with other autoimmune vesiculobullous skin conditions, such as bullous pemphigoid and linear IgA bullous dermatosis [1,4]. Inflammatory EBA presents with tense vesicles and bullae associated with circumferential erythema and urticaria, often involving the trunk and extremities, without the skin fragility or scarring seen in noninflammatory EBA [1]. Additionally, EBA has been associated with various autoimmune conditions, most commonly inflammatory bowel disease [5].

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The clinical differential diagnosis in this case included pemphigus vulgaris, bullous pemphigoid, and paraneoplastic pemphigus. The diagnosis of EBA is established by clinical findings in concert with a perilesional direct immunofluorescence skin biopsy. Linear deposition of IgA, IgG, and C3 at the base of the blister differentiates EBA and anti-epiligrin pemphigoid from other bullous pemphigoid disorders where such deposition is typically visualized at the roof [6,7]. In this case, the clinical diagnosis of noninflammatory EBA was established by the preponderance of blistering lesions at the hands and feet with associated secondary skin erosions and scarring (in contrast to pemphigoid disorders, which feature more widespread blistering with involvement of the flexural surfaces of the limbs and abdomen) [7]. Traditionally, visualization of antibody deposition at the site of anchoring fibrils within the basement membrane via immunoelectron microscopy (IEM) has been the criterion standard for confirming the diagnosis; however, this capability is available at only a small number of laboratories [2].

The primary focus of treatment is to prevent disease progression and serious complications of scarring (including blindness and respiratory obstruction) by avoiding physical trauma and suppressing the immune systems with agents, including corticosteroids, colchicine, dapsone, methotrexate, and cyclophosphamide [8]. Alternative agents include antibiotics, nicotinamide, and immunoglobulins. Mycophenolate mofetil, a selective inhibitor of DNA synthesis, has demonstrated viability as a potential therapeutic agent for EBA and autoimmune bullous disease [9].

Conclusions

Despite therapy, the clinical course of EBA is highly variable, with some patients developing progressively worsening disease despite administration of immunosuppressants [10]. Patients should be counseled on potential adverse effects associated with chronic immunosuppression. Successful treatment of the condition should involve a multidisciplinary team of medical professionals with regular monthly follow-ups during periods of active disease.

Conflict of interest

None.

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