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Bullous impetigo on a young man's abdomen

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Abstract

Bullous impetigo is a variant of epidermal infection by *Staphylococcus aureus*, representing 30% of impetigo cases. Its clinical appearance may mimic certain autoimmune blistering dermatoses and other cutaneous infections, sometimes necessitating careful evaluation. Herein we present a patient with bullous impetigo in a striking and characteristic appearance and briefly overview the approach to diagnosis, treatment, and prevention.

Keywords: atopic dermatitis, blistering dermatoses, bullous impetigo, Staphylococcus aureus

Case Synopsis

An otherwise healthy 19-year-old man with a history of eczema presented to the dermatology clinic with a 2-week history of painful blisters on his abdomen. He denied any systemic symptoms, new medications, and known exposures. Physical examination showed numerous flaccid vesicobullae in an annular pattern with central erosions and amber-colored crusting, confined to the abdomen (**Figure 1**). The patient was afebrile, with no lymphadenopathy or lesions of the mucosal surfaces.

The differential diagnosis included bullous impetigo (BI), pemphigus foliaceus (PF), and linear IgA bullous dermatosis (LABD). Biopsy results of a lesion showed spongiotic dermatitis with neutrophils and a subcorneal blister, split at the granular layer of the epidermis, with Gram positive cocci in the superficial epidermis (**Figure 2**). Direct immunofluorescence (DIF) was negative for immune complex deposition. A diagnosis of BI was made and the patient was successfully treated with 7 days of oral cefalexin 500mg three times daily.

Case Discussion

Impetigo is caused by epidermal infection with *Staphylococcus aureus* and usually presents on perioral skin, but the bullous variant, which represents 30% of cases, affects the trunk more frequently [1]. *S. aureus* produces exfoliatoxins which cleave the extracellular domain of a desmosomal subunit critical for keratinocyte adhesion in the

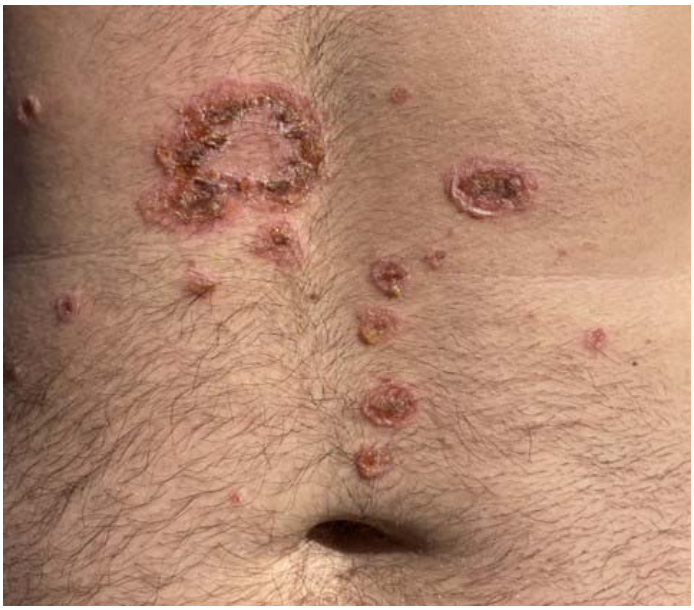

Figure 1. *Numerous flaccid vesicobullae in an annular pattern on the abdomen, with central erosions and amber crusting.*

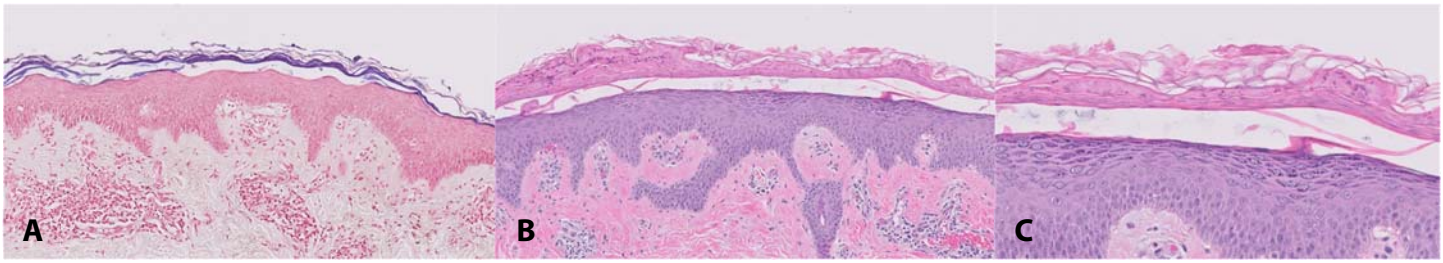

Figure 2. *H&E histopathology.* ***A)*** *Histology sections showed spongiotic dermatitis and a subcorneal bulla at the granular layer, 20×. Staphylococcal colonies are visible in the stratum corneum* ***B)*** *40×,* ***C)*** *100×.*

upper epidermis—desmoglein (Dsg) 1 [2,3]. This precipitates separation of the stratum corneum from its underlying granular layer, creating superficial vesicles that progresses to fragile bullae. When these rupture, infection spreads to adjacent skin, resulting in BI's characteristic peripheral, annularly arranged blisters [4].

Diagnosis may be confirmed by swab culture or biopsy. Histologically, BI shows neutrophilic infiltrate in the superficial dermis and cleavage of the epidermis, typically in the stratum granulosum, with sparse inflammatory cells and Gram-positive cocci in blister cavities [2].

Destruction of Dsg1 also occurs in PF, thus clinically it may appear similar to BI [2,3]. This patient's lesions also resemble the "crown of jewels" pattern classically seen in LABD. Direct immunofluorescence differentiates these diseases, revealing immunoglobulin deposition throughout the epidermis (particularly its superficial layers) in PF [4] or a linear pattern of IgA deposition along the dermoepidermal junction in LABD [5]. Typically, LABD presents with some intact bullae due to its subepidermal split, so superficial-appearing blisters as seen in our patient would be unusual.

Few studies have compared the relative efficacy of different therapies for extensive impetigo and it is unclear if systemic antibiotics are superior to topicals for BI [1]. Mupirocin, fusidic acid, and cephalexin have generally demonstrated consistent efficacy for impetigo. Eczema portends susceptibility to impetigo [1], and atopic dermatitis patients can decrease future occurrences with skin care practices that emphasize barrier repair (i.e., frequent emollient application) and hygiene (i.e., bathing regularly, which removes pathogenic bacteria), [6]. Although it has traditionally been taught that bathing in dilute bleach water helps reduce cutaneous bacteria in eczema patients, a recent meta-analysis showed plain bath water to be equally effective [6]. Patients should also be counseled on preventive methods such as cleaning minor injuries with soap and water, regular hand washing, and avoiding contact with infected individuals.

Potential conflicts of interest

The authors declare no conflicts of interest.

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