Factitious Dermatitis Due to Thermal Burn With Histologic Features Simulating Fixed Drug Eruption

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Abstract: Factitious dermatitis (FD) (dermatitis artefacta) is rare and often difficult to diagnose because of conflicting history and nonspecific clinical and histologic findings. It can present with varied clinical features including geometric ulcers, erosions, and less commonly bullae secondary to external trauma from chemicals, electric burns, heat, and suction. Herein, we describe a case of bullous FD due to thermal burn with histologic features demonstrating overlap with fixed drug eruption. Histopathology demonstrated a subepidermal blister with epidermal necrosis along with pigment incontinence and dermal eosinophils and neutrophils. Although these features, and the clinician's impression, were suggestive of fixed drug eruption, several morphologic findings allowed accurate diagnosis of FD: sharp demarcation of necrotic keratinocytes from adjacent uninvolved epidermis, elongated keratinocytes reminiscent of thermal or electrical artifact, and multinucleated keratinocytes. Although FD is often considered a diagnosis of exclusion, these clues may help dermatopathologists distinguish this entity from inflammatory dermatoses.

Key Words: factitious dermatitis, dermatitis artefacta, fixed drug eruption, bullous

(*Am J Dermatopathol* 2017;39:622–624)

INTRODUCTION

Factitious dermatitis (FD), also known as dermatitis artefacta, is a rare condition that may be difficult to conclusively diagnose. It commonly affects young or adult females with underlying psychiatric disorders and can present as ulcers, excoriations, or rarely bullae. The mechanism of trauma is often obscure as patients typically deny self-inflicting the lesions. In addition, in many references, the histologic features are described as nonspecific, pauci-inflammatory erosions, ulcers, or excoriations.[1] However, several histologic clues may help aid in the diagnosis of FD and even help to identify the inciting trauma. We report a case of bullous FD with clinical and histologic findings simulating fixed drug eruption (FDE), but for which unique morphologic features permitted accurate diagnosis.

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The authors declare no conflicts of interest.

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CASE REPORT

A 12-year-old girl presented with recurrent bullae over the course of 2 months on the upper extremities that resolved with hyperpigmentation, hypopigmentation, and scarring (Figs. 1A, B). The patient initially denied self-inflicting trauma, including contact with chemicals, heat, or electricity. Medication history was significant for intermittent use of ibuprofen. The clinical differential diagnosis included FDE and FD.

A punch biopsy was performed. A subepidermal blister with epidermal necrosis and a superficial to middermal perivascular inflammatory infiltrate were noted (Fig. 2A). In addition, there was sharp demarcation between necrotic epidermis and adjacent normal keratinocytes (Fig. 2B). On closer inspection, dermal eosinophils, neutrophils, and pigment incontinence were identified, features suggestive of FDE (Fig. 2C). However, the presence of elongated, distorted, and multinucleated keratinocytes in conjunction with epidermal necrosis without lichenoid inflammation pointed to the correct diagnosis of FD (Fig. 2D). At follow-up, the patient's mother provided confirmation of self-inflicted thermal injury through contact with a curling iron.

DISCUSSION

Bullous FD is a rarely reported entity that can be caused by various traumas including electrical current, chemicals, aerosolized spray (cryothermic dermatitis), heat, or suction.[1,2] Skin lesions are often multiple and more common in young and adult females. Clinical features supporting this diagnosis include geometric shapes, distributions that are incongruous with known inflammatory dermatoses, and conflicting history.[3] Historically, the histologic findings for bullous dermatitis artefacta have been relatively nonspecific. With thermally induced lesions, intraepidermal and subepidermal bullae with neutrophils but without acantholysis have been reported.[4] Other documented patterns include epidermal necrosis with minimal dermal inflammation, erosions, and foreign body reactions. Recently, more specific and helpful features such as the presence of multinucleated giant cells, abrupt and confluent epidermal necrosis with sharp lateral demarcation, and vertical elongation of keratinocyte nuclei (seen in electrical injury) have been described (Table 1).[5–7] Previously, it has been reported that dermal inflammation should be sparse and in particular, lacking in eosinophils, to discriminate FD from inflammatory dermatoses including immunobullous conditions.[5] However, the case reported herein demonstrates that significant dermal inflammation including eosinophils may be seen in FD (Table 1). Of note, the biopsy specimen described was obtained from a lesion present for 1 week; the presence or absence of a dermal inflammatory infiltrate in FD may be related to the chronicity of the lesion sampled.