

A 14-year-old with dermatitis artefacta secondary to aerosolized spray deodorant: A rare case with an important learning opportunity



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INTRODUCTION

Dermatitis artefacta (DA), or factitious dermatitis, is an underdiagnosed disorder and often a source of perplexity for the dermatologist.¹ DA is a self-induced, psychocutaneous condition in which the patient consciously produces lesions on the skin to address a psychological need or to occupy the “sick role.”² Although rarely diagnosed, DA may be more prevalent than previously thought due to lack of recognition. Diagnostic difficulty due to patients concealing the self-induced nature of the lesions may lead to the underrecognition of DA. Associated psychiatric findings and conditions include borderline personality disorder, depression, and obsessive-compulsive disorder.³ DA is a diagnosis of exclusion and should be included in a differential diagnosis, especially when dermatoses are recurrent, chronic, or complex.⁴

DA has a female predominance, frequently occurs in late adolescence, and is observed commonly in health care professionals.⁵ DA lesions are typically found in easily accessible and visible areas of the skin, including the face, limbs, and hands.² We present a case of a 14-year-old girl with a unique case of bullous DA on the upper extremities that underwent extensive workup for blistering diseases before it was discovered that the lesions were caused by aerosol deodorant-related cryothermal injury. This report aims to depict the unique features of DA, give attention to the importance of a detailed history and physical examination for diagnosis, and remind physicians of a rare, but important condition

Abbreviations used:

DA: dermatitis artefacta
DIF: direct immunofluorescence

that can only be treated with support from a multidisciplinary team.

CASE REPORT

A 14-year-old girl presented with bullae on the arms and hands starting 6 months prior to initial presentation. These painful red blisters with clear fluid started on the left arm and later extended to the hands, trunk, and lower extremities. She denied the use of any medications or over-the-counter drugs, including nonsteroidal anti-inflammatory drugs and antibiotics. She denied any recent travel history or inflammatory bowel disease, and family history was negative for autoimmune disease. Her grandmother, with whom she lives full-time, noted that the child had a history of asthma, and that her social history was significant for her biological mother’s death secondary to drug use 2 years previously.

On physical examination, the patient had multiple, well-demarcated tense bullae of similar size arranged in a linear pattern on the forearms bilaterally (Figs 1 to 3). Analysis of a biopsy from the anterior aspect of the left upper arm conducted by her pediatrician upon initial presentation 6 months previously revealed subepidermal vesicular dermatitis with neutrophils. The direct

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immunofluorescence (DIF) test was inconclusive, and the patient was referred to a dermatologist. A repeat biopsy of the right forearm prompted by the inconclusive DIF test was completed 3 months afterwards and revealed interstitial perivascular and sub-epidermal vesicular dermatitis with neutrophils and eosinophils (Fig 4). The second DIF test was negative and laboratory results including a complete blood count, comprehensive metabolic panel, erythrocyte sedimentation rate, and serum IgA were all normal. Based on the histologic and clinical findings, she was started on oral prednisone 1 mg/kg. After tapering, she began to develop new lesions. She developed a rash when starting dapsone but tolerated colchicine. Some progress was noted when she kept her arms wrapped in Kerlix (Cardinal Health) dressings, but lesions recurred when she was unable to keep arms wrapped at the beginning of the school sports season. Six months after initial presentation, the patient's grandmother discovered multiple cans of empty aerosol deodorant in the patient's room and notified the treatment team. After discussion with the patient, she admitted to using the aerosol spray on her skin after seeing someone else induce injury in this way on social media.

DISCUSSION

The differential based on subepidermal blisters on biopsy and clinical presentation included bullous pemphigoid, dermatitis herpetiformis, linear IgA bullous dermatosis, porphyria cutaneous tarda, bullous lupus erythematosus, lichen planus pemphigoid, and factitious dermatitis. Perhaps the most interesting aspect of this case was the negative DIF test, which is positive in most conditions on the differential. The negative DIF test ruled out bullous pemphigoid, dermatitis herpetiformis, linear IgA bullous dermatosis, and lichen planus pemphigoid. A normal antinuclear antibody test ruled out bullous lupus erythematosus, while the presence of neutrophils and eosinophils on histology ruled out porphyria cutaneous tarda, which is a cell-poor condition.

In a retrospective analysis of 44 pediatric patients with DA from 1976 to 2006, the most frequent clinical forms were excoriations, ulcers, and blisters, which were prominent in our case.⁶ The appearance of DA lesions vary, and superficial erosion, hyperpigmented macules, excoriation, deep necrosis, crusts, and scars make up approximately 50%, 36%, 17%, 16%, 8%, and 7% of lesions, respectively. Overall, about 72% of the patients have 1 type of lesion morphology, while 41% have 2 types and 31% have 3 types.⁷ A separate case of a young woman presenting with unilateral bullous and ulcerative



Fig 1. Prominent bullous lesion on the patient's right hand.



Fig 2. Regular-shaped, well-demarcated lesions on the left arm in a linear pattern.

oral lesions with erythematous facial lesions was initially diagnosed as pemphigus vulgaris but was eventually determined to reflect self-inflicted injuries. The patient had been consciously applying carpet dye, which, upon application, generated bullous lesions resembling the initial presentation. After multiple consults with a psychiatric specialist, the diagnosis of a factitious disorder was made, and



Fig 3. Bilateral bullous lesions on the upper extremities.

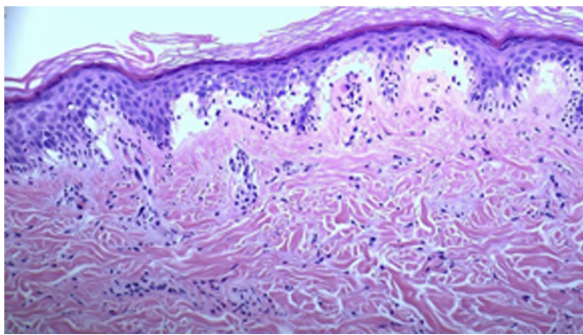


Fig 4. Interstitial and perivascular mixed inflammatory cell infiltrate with subepidermal vesiculation and orthokeratotic stratum corneum. (Hematoxylin-eosin stain; original magnification: $\times 40$.)

after 2 months, the patient's orofacial lesions had resolved.⁸ There have also been previous reports of bullous lesions induced via prolonged application of aerosol deodorant causing cryothermic injury to the skin.⁹ In this case, our patient presented with regular-shaped lesions in a linear pattern on her arms, an accessible part of the body, which resolved with occlusion of the areas and returned when occlusion was removed. These exam findings are similar to those noted in previous DA studies.¹⁰

Our case patient received colchicine, corticosteroids, and occlusive bandaging in the form of Kerlix, which follows the recommendations put

forth by Lavery et al³ in the management of DA. Management includes a combination of psychiatric therapy, such as cognitive behavioral therapy and psychotherapy, along with medical interventions, including occlusive bandaging and the use of topical antimicrobials.³

The clinical findings in DA are broad, so the dermatologist should be aware of psychosocial influences. Management of DA is challenging, and adopting a multidisciplinary approach with a detailed social history will be beneficial for allowing patients to address their psychiatric and cutaneous illness with the help of a more knowledgeable health care team.

Conflicts of interest

None disclosed.

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