Our Dermatology Online

Case Report

Wells' syndrome mimicking bullous infectious cellulitis in a 3-year-old child

Soukaina Lazouzi, Fatima-Zahra El Fatoiki, Fouzia Hali, Soumia Chiheb

Dermatology Department, Ibn Rochd Hospital Center, University Hassan II, Casablanca, Morocco

Corresponding author: Soukaina Lazouzi, MD, E-mail: souki08@hotmail.com

ABSTRACT

Wells' syndrome, or eosinophilic cellulitis, is a rare inflammatory dermatosis frequently associated with recurrence. Acute in onset and often presenting as an inflammatory or urticarial patch, it often leads to confusion with infectious cellulitis and, thus, treatment with antibiotics without resolution of symptoms. Histology is suggestive, showing an eosinophilic infiltrate with flame-like formations, and treatment relies primarily on topical or oral steroids. We, herein, report the case of a three-year-old girl who presented with an erysipelas-like eruption, which turned out to be Wells' cellulitis.

Key words: Wells' syndrome, Eosinophilic cellulitis, Cellulitis, Bullous cellulitis with eosinophilia, Case report

INTRODUCTION

Wells' syndrome, also named "eosinophilic cellulitis," is a rare self-limiting but often recurring inflammatory dermatosis [1]. It is uncommon amongst children and is clinically variable but most often manifests as pruritic urticarial plaques [2]. Herein, we report the case of a three-year-old child who presented with the bullous eosinophilic cellulitis variant mimicking infectious cellulitis.

CASE REPORT

A three-year-old girl, with no pathological history, presented with a tender plaque of the left lower limb that had been evolving for four days, with a history of an insect bite prior to symptom onset. Examination found a febrile child at 38.9°C, edema of the left leg extending beyond the knee, with erythema, bullae, and crusty lesions in places (Fig. 1a), and a similar plaque on the anterolateral side of the right thigh (Fig. 1b). There were no lymphadenopathies or other signs reported or found. A complete blood count and CRP revealed an elevated white blood cell count of 12,890/mm^3 (range = 4000–10,000) with an elevated eosinophil count of 3003/mm^3 (range = 100–500), a normal neutrophil count of 4924/mm^3, and a CRP of 10.98 mg/L (range < 6). The patient was initially initiated on oral antibiotics, as erysipelas was suspected; however, due to symptom persistence, treatment was switched to topical corticosteroids and oral antihistamines, leading to a favorable outcome. Histological analysis was not performed due to the rapid clinical improvement observed following treatment initiation, which made invasive diagnostic procedures unnecessary.

DISCUSSION

Wells' syndrome, also named Wells' cellulitis or eosinophilic cellulitis, is a rare and frequently recurring inflammatory dermatosis of unknown etiology, but potential etiological factors such as infections (e.g., varicella, and parvovirus), insect bites, medications (e.g., penicillin or infliximab), hematologic disorders and malignancies, radiotherapy, immunomodulators, vaccines, and contact dermatitis have been reported [1–3].

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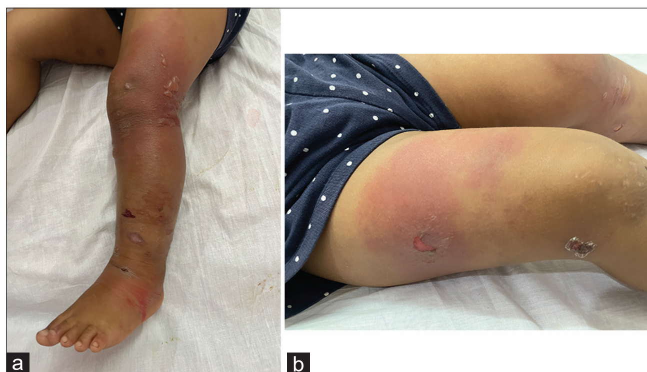

Figure 1: (a) Edema with erythema, bullae, and crusty lesions on the left leg of the 3-year-old child. (b) Erythematous plaque with bullae and post-bullous erosions on the right thigh of the 3-year-old child.

Authors describe a wide range of clinical presentations, including urticarial, vesiculobullous, nodular, papulonodular, and annular forms, preceded by itching or tenderness, often leading to confusion with other etiologies [3,4]. The main differential diagnosis, thus, remains infectious cellulitis, further supported by the acute onset and frequent association with fever, as was the case in our patient, in whom erysipelas was the initial diagnosis [5].

Paraclinical elements can help in the diagnosis and usually note hyperleukocytosis with peripheral hypereosinophilia and elevated CRP levels, although cases with normal CRP levels have been described, and our observation fits into this category [3].

The histopathological changes progress through three stages: an early phase with dermal edema and eosinophilic infiltration, a subacute phase marked by histiocyte infiltrates and flame figures, and a late phase with fewer eosinophils, histiocytes, and residual flame figures [6].

Although the disease usually resolves spontaneously within weeks, its recurring nature often calls for treatment, but no standard guidelines are available. Many patients are initially misdiagnosed and mistakenly treated with antibiotics, leading to no resolution of symptoms, further complicating the diagnostic process. Based on case reports and small series, treatment relies on local and oral steroids, with dapsone or cyclosporine for resistant cases, and in some instances, TNF-α inhibitors, omalizumab (anti-IgE), mepolizumab (interleukin-5 inhibitor) and benralizumab (interleukin-5 receptor inhibitor) have been proven to be successful [4].

CONCLUSION

Wells' syndrome remains a rare and frequently misdiagnosed condition, particularly in pediatric patients. This case highlights the importance of increasing awareness among clinicians to facilitate accurate diagnosis and effective management. Given its favorable prognosis and usually spontaneous resolution, systemic treatment should be reserved for cases unresponsive to local therapy or with extensive lesions.

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Consent

The examination of the patient was conducted according to the principles of the Declaration of Helsinki.

The authors certify that they have obtained all appropriate patient consent forms, in which the patients gave their consent for images and other clinical information to be included in the journal. The patients understand that their names and initials will not be published and due effort will be made to conceal their identity, but that anonymity cannot be guaranteed.

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