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LETTERS TO THE EDITOR

Allergic Contact Dermatitis from a Topical Corticosteroid Mimicking Acute Generalized Exanthematous Pustulosis

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Sir,

Acute generalized exanthematous pustulosis (AGEP) designates an uncommon, cutaneous reaction characterized by an acute eruption of numerous, small, mostly non-follicular sterile pustules arising on a widespread oedematous erythema; fever above 38°C; blood neutrophil count above 7×10^9/l and spontaneous resolution of pustules within 15 days. Typical histopathological findings are subcorneal and/or intra-epidermal pustules, dermal oedema and perivascular infiltrates of neutrophils and eosinophils. Vasculitis and focal necrosis of keratinocytes may be present. AGEP is mostly a systemic drug reaction, often due to antibiotics. Other possible aetiological factors include infections and mercury (1–4). We present here a case of an AGEP-like skin eruption as a manifestation of allergic contact dermatitis to hydrocortisone-17-butyrate. To our knowledge, this has never been reported before.

CASE REPORT

A 62-year-old retired postman presented with a pruritic rash. He was previously healthy and had no history of skin disease. Two weeks before presentation he developed redness, slight swelling and itch on his right foot and was treated by his general practitioner with dicloxacillin for erysipelas. The symptoms progressed and he developed a pustular rash affecting his thighs, arms and hands accompanied by an intense, burning itch. After spreading of the cutaneous eruption dicloxacillin was substituted by erythromycin and subsequently by ofloxacin, with no effect on the rash, which progressed until referral.

At the first visit the patient did not disclose the use of topical remedies except for a moisturizer he had used for several years. There were no general symptoms of fever, malaise or arthralgia.

Physical examination showed widespread numerous symmetrically distributed non-follicular pustules on an erythematous base, primarily on his forearms and antecubital fossae (Fig. 1). In addition there was a crusted dermatitis affecting his right foot, thighs and both hands. There was no mucosal involvement.

Blood samples showed an elevated blood neutrophil count (7.7×10^9/l), but a normal total white cell count and no eosinophilia. Other blood samples were unremarkable including haemoglobin, blood platelets, ESR, C-reactive protein, alanine transaminase, alkaline phophatase, albumin, creatinine and urea. No bacteria or fungi were cultured from the pustules.

A 4-mm punch biopsy from the forearm showed multifocal subcorneal pustules or superficial intra-epidermal pustules with no follicular continuity. A few eosinophils were scattered among the neutrophils of the pustules. There was a slight spongiosis, but no remarkable spongioform pustulation. There was a moderate subepidermal oedema and a heavy diffuse mixed inflammatory cell infiltrate of neutrophils, eosinophils and lymphocytes. There was no vasculitis (Fig. 2).

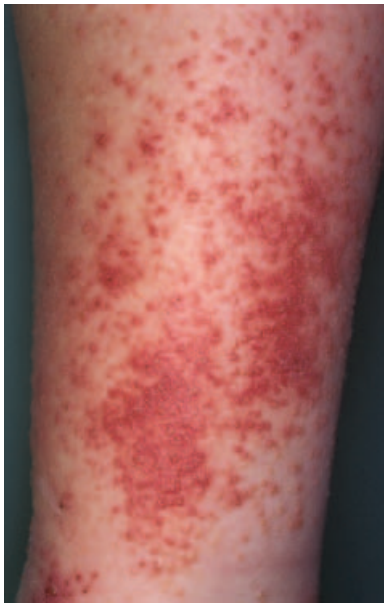

Fig. 1. Numerous small, non-follicular, sterile pustules on a widespread oedematous erythema on the forearm.

At his first visit an AGEP reaction to penicillin was suspected. Ofloxacin was discontinued. He was treated with potent topical steroid (betamethason-17-valerate), oral prednisolone 25 mg/day and potassium permanganate soaks. Four days later the skin had recovered almost completely. Four weeks later after withdrawal of systemic treatment, the patient underwent an allergological investigation including patch testing with the European standard

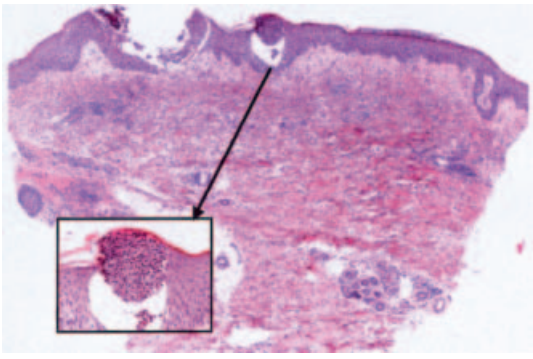

Fig. 2. A biopsy showing intracorneal pustules dominated by neutrophils with a slight adjacent spongiosis. There is oedema and a mixed inflammatory cell infiltrate in the superficial dermis.

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series (TRUE® test, panels 1 and 2), supplemented with petrolatum-based preparations, a corticosteroid series and cosmetics used (Finn chambers on Scanpor). The reactions were read at day 3 and day 7.

A positive reaction to nickel sulphate and potassium dichromate was of no current clinical relevance. In addition, a strong (++) reaction to budenoside 0.01% pet. and a + reaction to hydrocortisone-17-butyrate 0.1% pet. was seen at day 3. Pustules were not observed when reading the positive patch test to steroids, and a biopsy from the positive patch test showed changes compatible with contact dermatitis and no pustules. A closer history revealed that, in addition to the oral antibiotics, the patient had used a topical corticosteroid containing hydrocortisone-17-butyrate from the early onset of the skin symptoms. An intradermal test and oral provocation with penicillin was negative. Further, patch testing with erythromycin, ciprofloxacin and dicloxacillin was negative. It was concluded that the patient had a strong corticosteroid allergy and that his AGEP-like eruption was a manifestation of allergic contact dermatitis.

DISCUSSION

The presentation of allergic contact dermatitis mimicking AGEP is remarkable and, to the best of our knowledge, has not been reported before. The diagnosis of AGEP in this case was suspected on the basis of clinical and histopathological morphology of his cutaneous rash that was convincingly suggestive of this diagnosis. Furthermore he fulfils suggested criteria of AGEP (2, 4), except that he had no fever.

The various histological differential diagnoses of subcorneal pustulation comprise pustular psoriasis, subcorneal pustulation of Sneddon-Wilkinson, IgA pemphigus, subcorneal-type and odd types of dermatophytosis, which were all excluded clinically and histopathologically (direct IF showed no deposits of immunoglobulin, and fungi were not demonstrated).

The negative intradermal test and peroral challenge with penicillin exclude the suspected penicillin as the cause of the pustular rash. Since erythromycin and ofloxacin, which have both been reported among the inducers of AGEP (4), were administered after the dissemination of the pustular rash, it seems fair to rule out these drugs as having any pathogenic importance. Patch testing for the suspected drugs has been shown to be of good value when evaluating patients with AGEP (5, 6). A provocation of AGEP has even been reported from patch testing with the offending drug (7). In this case patch tests with the antibiotics used were negative.

A manifestation of allergic contact dermatitis resulting from the use of a topical drug containing hydrocortisone-17-butyrate must be the only plausible explanation of the eruption in our patient.

Allergic contact dermatitis to corticosteroids, first described in 1959 (8) is an uncommon side effect of dermatological therapy (9). Concomitant reactivity to budesonide and hydrocortisone-17-butyrate is the rule (10). Typically, allergy to a topical steroid should be suspected in patients with long-standing eczematous skin diseases who do not improve or deteriorate during treatment with a topical corticosteroid, but it can also result in acute eczema (11). To the best of our knowledge a pustular eruption as a result of allergy to a topical corticosteroid has not been reported before. Pustular patch test reactions are not uncommon; they may be elicited by metal salts and are usually regarded as irritant reactions (12).

In conclusion, an AGEP-like eruption as a manifestation of allergic contact dermatitis from topical corticosteroids is a rare type of allergic contact dermatitis, not hitherto reported. The varied spectrum of agents inducing AGEP may indicate that this pustular reaction pattern can be caused by different mechanisms and not just be of an allergic nature, like the reaction patterns of erythema multiforme and toxic epidermal necrolysis.

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