

Delayed patch test reaction to budesonide in an 8-year-old

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Abstract

Topical corticosteroids are an emerging cause of allergic contact dermatitis in children that may often be missed. It is important to consider patch testing with corticosteroids to detect allergic contact dermatitis in patients with persistent or worsening of dermatitis despite topical corticosteroid treatment. However, delayed reactions (>7 days) to topical corticosteroids may occur, leading to false-negative reactions and misdiagnosis. Herein, we report a case of an 8-year-old girl who developed a positive reaction to budesonide on day 12 of patch testing.

KEYWORDS

allergic contact dermatitis, corticosteroids, delayed patch testing reaction, late patch test reading

1 | INTRODUCTION

Topical corticosteroids (TCS) are an emerging cause of allergic contact dermatitis (ACD) in children that may often be missed.¹ In adults and children over 13 years, the standard protocol for patch testing is for patches to be removed on day 2 followed by reading on day 5. In younger children, some centers have proposed for shorter patch test occlusion time of 1 day followed by reading on day 2 and day 3.^{2,3} One study has emphasized the importance of late reading (day 7-9) to detect ACD in children.⁴ Herein, we report a rare case of an 8-year-old girl who developed a positive patch test reaction to budesonide on day 12 of patch testing.

2 | CASE REPORT

An 8-year-old girl with no personal or family history of atopic dermatitis presented with facial dermatitis for nine months. She had previously been treated with topical triamcinolone and fluocinonide with recurrent flares on discontinuation. She was subsequently referred for patch testing for suspected ACD. Patient was patch tested to the North American 80 Comprehensive Series (Dormer Laboratories Inc). Patches were applied on her back with IQ chambers (Dormer Laboratories Inc) affixed with Scanpor™ tape. Initial readings at 48 and 96 hours revealed 1 + reactions to hydroperoxides of linalool

and limonene, and benzoyl peroxides and was advised to avoid detected allergens. On day 12, patient developed a 1 + reaction to budesonide 0.1% petrolatum. Subsequent avoidance of all allergens and switching to acemetasone and hydrocortisone TCS led to complete resolution of dermatitis.

3 | DISCUSSION

Corticosteroids are one of the top 10 contact allergens in children, with a prevalence rate of 1.7% across five studies.¹ Corticosteroids are divided into five structural classes A, B, C, D₁, and D₂.⁵ Budesonide is a marker for class B corticosteroids, which include triamcinolone and fluocinonide. Our patient was using class B corticosteroids for her recurrent facial dermatitis, presumably becoming sensitized through prolonged exposure. Cross-reactivity between class B and class D₂ has also been reported due to similarity in structures.⁵ She was subsequently switched to acemetasone (class D₁) and hydrocortisone (class A) TCS. In addition to avoidance of fragrances (eg, hydroperoxides of linalool and limonene) in personal care products, this led to resolution of her dermatitis.

Notably, our patient had a negative reaction to budesonide on day 5 reading but developed a 1+ reaction to budesonide on day 12. The possibility of active was considered due to patch testing was considered, but this is exceedingly rare⁶ and our patient was using

the culprit allergen at the time of patch testing, with subsequent improvement on discontinuation. Late reading of patch test reactions to corticosteroids has been widely reported in adults. Van Amerongen et al examined the added value of day 7 patch test reading in 3,292 patients and found that 28.4% of corticosteroid allergies would have been missed without day 7 readings.⁷ Due to the antiinflammatory effect of corticosteroids, delayed patch test reading is recommended to avoid false-negative reactions, especially when tested at higher concentrations.⁷

The importance of delayed patch test reactions for topical antibiotics, epoxy resins, and formaldehyde-releasers have been reported in children.⁴ We present a rare case of ACD to budesonide found on delayed reading, a phenomenon infrequently reported in children. This case emphasizes the importance of considering possible ACD to TCS in patients with persistent dermatitis⁸ and, most importantly, considering delayed (>7 day) readings on patch testing in children to avoid false-negative reactions and misdiagnosis.

CONFLICT OF INTEREST

The authors consent for publication. There are no conflicts of interest to declare.

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