

Positive Patch Test Reaction in a Patient Taking Dupilumab

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PRECÍS

Patch testing sensitivity varies by immunosuppressive agent; we report a positive patch test reaction in a patient on dupilumab.

DISCUSSION

A 63-year-old woman with a 30-year history of atopic dermatitis with worsening over the past 5 years was started on dupilumab 300 mg every other week for severe atopic dermatitis. Six months after initiation of therapy, the patient's dermatitis had improved, but she was not clear. There was concern for allergic contact dermatitis, and patch testing was recommended. Her history included 2 previous patch tests: a positive patch test for formaldehyde at an outside clinic, and an "angry back" reaction at this institution when off immunosuppressants and in the setting of severe disease.

While the patient was taking dupilumab, 129 allergens were tested, including the North American Contact Dermatitis Group screening series, the corticosteroid series, and 50 additional allergens. Allergens were obtained from Chemotechnique Diagnostics (Vellinge, Sweden) and Allergeaze (SmartPractice, Calgary, Alberta, Canada) and were applied with Finn Chambers (SmartPractice, Phoenix, AZ) on Scanpor tape (Norgesplaster Alphanorma AS, Vennesla, Norway). Readings were completed on D2 and D5 and designated in accordance with the International Contact Dermatitis Research Group criteria.¹ Patch testing was positive with a 1+ reaction to methylisothiazolinone. She also had a +/– reaction to dimethylaminopropylamine 1% aqueous. There were several irritant reactions, including formaldehyde 2% aqueous.

The case provides evidence of the ability to mount a positive patch test reaction while concurrently immunosuppressed with dupilumab. On March 2017, dupilumab became the first biologic agent to gain U.S. Food and Drug Administration approval for the treatment of moderate to severe atopic dermatitis in adults. As an interleukin 4 (IL-4) receptor antagonist, dupilumab blocks the stimulatory effects of both IL-4 and IL-13.²

It is worth noting that the patient failed to mount a response to her previously reported formaldehyde allergy. Two possibilities

exist for this finding: (1) dupilumab inhibited the patient's ability to mount a response to formaldehyde, or (2) the previous reading was misinterpreted.^{3–5} Formaldehyde is a known irritant, and irritant reactions can be misinterpreted as positive by inexperienced patch testers. Formaldehyde was interpreted as an irritant reaction during this patch test; this supports misinterpretation of results during the previous patch test.

Patch testing was previously inconclusive in this patient because of an "angry back" reaction, which was likely related to her diffuse cutaneous involvement at that time. With active severe dermatitis lowering the yield of patch testing and patients improving on dupilumab, we will continue to see patients presenting for testing while immunosuppressed on dupilumab.^{3–5}

PEARL

Patients immunosuppressed on dupilumab can mount a positive patch test reaction.

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Allergic Contact Stomatitis Associated With Sweet Vermouth

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We discuss allergic contact stomatitis (ACS) associated with sweet vermouth to increase awareness of this potential allergen.

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