

Atopic Dermatitis and Ichthyosis Vulgaris Caused by Irritants in a Professional Windsurfer

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Précis

Patients with *filaggrin* mutations can present with a clinical picture of atopic dermatitis and ichthyosis vulgaris on exposure to irritants.

Discussion

Chemical contactants in sports equipment and clothing (such as rubber derivates in swimwear and shoes, and glues in adhesive athletic tape) and physical exposures (eg, water and friction) are known to cause either allergic or irritant contact dermatitis in athletes.¹

Filaggrin mutations are associated with allergic contact dermatitis (ACD)² and irritant contact dermatitis (ICD)³ but most importantly with atopic dermatitis (AD)⁴ and ichthyosis vulgaris (IV).⁴ We here present the case of a homozygote for *filaggrin* mutation 2282del4 who presented with classic AD and IV lesions after irritant exposure.

A 23-year-old man presented with AD on the arms, chest, and back and with IV on the areas of the back and chest that were not affected by AD. The patient was a professional windsurfer and wore a neoprene wet suit almost every day. In early childhood, he suffered from AD, rhinitis, asthma, and type I sensitizations to aeroallergens. He was tested for the two most frequent *filaggrin* mutations in the Caucasian population (R501X and 2282del4), patch-tested with diethyl thiourea (a known allergen in neoprene material), and prick-tested with latex (a known allergen in rubber wear). The patient was homozygous for 2282del4 and negative for both diethyl thiourea and latex.

Null mutations in the *filaggrin* gene result in a reduced level or lack of the protein filaggrin in the uppermost part

PEARLS provide insight into understanding disease pathogenesis or improving treatment. ZEBRAS inform about previously unrecognized conditions or atypical variants of known disorders.

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of the epidermis.⁴ Lack of filaggrin correlates with a paracellular barrier abnormality with reduced inflammatory thresholds for irritants and allergens.⁵ The patient had been exposed to both chemical contactants and physical irritants. He was homozygous for one frequent *filaggrin* mutation; he therefore lacked filaggrin in the skin. Instead of developing ACD from allergens in the wet suit, the patient developed AD and IV. The outbreak of AD and IV was interpreted as having been provoked by the frequent wearing of the wet suit, friction from the wet suit, and chronic exposure to water in this patient who was genetically predisposed to a more sensitive skin. Medical doctors need to be aware of patients with *filaggrin* mutations who may show a clinical picture of AD and IV from known irritants and perhaps also from allergens.

Zebra

This case provides insight into an atypical presentation of ICD that dermatologists need to be aware of to correctly identify the triggering cause and thereby help the patient.

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