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Bullous Allergic Contact Dermatitis caused by Potassium Dichromate

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Introduction

Contact dermatitis comprises eczematous and non-eczematous reactions. Certain allergens can trigger very intense reactions, which can be confused with other dermatoses.

A 66-year-old man presented with rapidly progressive pruritic erythematous-oedematous eruption with blistering on his abdomen (Fig. 1). The patient was attended in the emergency department. A diagnosis of second-degree burn was made, indicating treatment with silver sulfadiazine cream. The evolution was unfavourable, with the formation of new blisters and more intense itching. The patient returned to the emergency department. He was assessed by a dermatologist. The directed anamnesis detected contact with cement sacks 48 hours before the onset of the cutaneous blistering eruption. Bullous allergic contact dermatitis to potassium dichromate was suspected. He worked as an aeronautical engineer. Contact with multiple metals, including chromium, was confirmed. He also reported dermatitis on wrists with leather bracelets, as well as eczematous lesions on the back of the feet with leather shoes. Treatment with oral corticosteroids was prescribed for 10 days, with complete improvement of the rash. The patch test showed positivity to potassium dichromate +++ at 48 and 96 hours. Bullous allergic contact dermatitis to potassium dichromate was confirmed. Patient consent was obtained for publication purposes.

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Comment

The most frequent source of contact to potassium dichromate in men is through cement[1]. Other sources[2] are stainless steel objects, orthopaedic prostheses, dental implants, orthodontic appliances, green dyes from textiles and tattoos, matches, paints and varnishes, anti-corrosion agents, cutting oils, degreasing solvents, electrolysis baths, electric batteries, waterproof fabrics, TV manufacturing, photocopy paper, solder, floor waxes, shoe polish, paints, glues, eye shadow and eye mask pigments, detergents, analytical reagents, chrome catgut.

The application of barrier creams with glutathione and iron sulphate could inhibit the elicitation phase of patients predisposed to develop allergic contact dermatitis to hexavalent chromium[3]. Hand dermatitis is the most frequent location when the source of contact is cement. Other locations such as the feet are related to leather footwear[4]. Eczematous and blistering rash on the back of the foot is suggestive of allergic contact dermatitis caused by potassium dichromate[5]. The anamnesis is crucial to correctly approach the diagnosis of the patient. Other allergens associated with the development of bullous allergic contact dermatitis include diethylthiourea[6], and colophonium[7], among others.

Contact dermatitis can manifest itself in various clinical forms. Bullous lesions can be observed in both irritant and allergic forms. Anamnesis is crucial in order to correctly approach the diagnosis as well as the scheduling of the patch test.

Authors' Contribution

All authors contributed equally to conception and design, data collection, data analysis and interpretation, drafting and editing the manuscript. All authors approved the final version of this manuscript.

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Figure 1. Eczematous and bullous rash on the abdomen.

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