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Contact Vitiligo Following Allergic Contact Dermatitis

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Introduction

A 45-year-old man, construction worker, with no personal history of psoriasis, atopic dermatitis, and vitiligo, was referred to our Contact Eczema Department with a chronic hand eczema and skin depigmentation over a period of 12 months. Skin depigmentation appeared few months later regarding the primary eczema. The patient reported the use of rubber gloves for many years. He had noticed itching and mild erythema over both hands. Currently, he wears nitrile gloves at work. Physical examination showed symmetric erythematous-squamous, hyperkeratotic and fissured plaques on both hands (Fig. 1A), and ventral aspect of wrists (Fig. 1B). Skin depigmentation areas showed irregular edges (Fig. 1C). Wood's lamp examination accentuated the depigmentation areas overlap the eczema (Fig. 2A-B), without vitiligo pattern. No other anatomical sites were involved. Blood test showed no significant alterations, including data from autoimmune thyroiditis, celiac disease, and pernicious anaemia. Patch tests were performed with the European Comprehensive Baseline Series (Chemotechnique Diagnostics, Vellinge, Sweden), rubber additives series (Chemotechnique Diagnostics), and hydroquinone monobenzylether 1% pet (Shoe series, Chemotechnique Diagnosis). The results were interpreted according to the criteria of the International Contact Dermatitis Research Group. Patch tests were read on day (D) 2 and D4. The patient showed strong positive patch test reaction to mercaptobenzothiazole (MBT). The patch test was performed with a piece of glove that the patient previously used which showed a positive reaction at D2 and D4. Orthokeratotic epidermis of slightly reduced

thickness, with a conserved ridge pattern, with hypopigmentation and a marked decrease in the number of melanocytes was observed in the histological examination (Fig.3A.). Melan-A, S100 (Fig.3B) and HMB-45 staining were absent from the depigmented lesions. At 3 and 6 months of follow-up, we observed a slight depigmentation of the area where MBT was tested. Contact vitiligo following allergic contact dermatitis caused by MBT was diagnosed. Treatment with UVB-Narrowband phototherapy was indicated. Almost complete improvement of eczema and depigmented areas was observed after 6 months of follow-up.

Comment

Contact vitiligo is the term used to describe an acquired form of skin depigmentation caused by certain chemicals, mainly phenolic/catecholic derivatives¹. Contact leukoderma (CL) or contact vitiligo (CV) are terms with different meanings that may be confused in the literature. CL is the term used to describe depigmentation that develops after contact with chemicals or allergens, which may or may not be accompanied by allergic contact dermatitis. For a diagnosis of CL, the patient needs to fulfil the following criteria: history of repeated exposure to depigmenting agent, showed numerous acquired confetti or pea-sized macules, and affected areas which corresponding to sites of chemical exposure. In the other hand, CV is an acquired leukoderma that occurs as a result of repeated topical or systemic exposure to a variety of chemicals, mainly alkyl phenols and catechols, regardless of the form of skin involvement². Ju et al³ reported a case of contact vitiligo caused by IPPD. CL is not frequent, and clinically and histologically is similar to vitiligo, sometimes confused with the latter. The first case reported was in 1939 caused by monobenzyl ether of hydroquinone in rubber gloves⁴. Phenols and catechol derivatives are the main responsible⁵, mainly due to the direct toxic effect on melanocytes. Hydroquinone (monomethyl ether or monobenzyl ether), p-toluene diamine, monobenzene, azo dyes, aldehydes, epoxy resins, metals, dental acrylics, isopropanol⁶, or rotigotine⁷, among others, have also been reported to the development of contact leukoderma. MBT is used such as accelerator, retarder, and peptizer for natural and other rubber products. This allergen can find it in gloves, shoes, clothing, condoms, medical devices, and adhesives, among others.

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Figure 1: (A) Hyperkeratotic and fissured eczema on the back of both hands, with skin depigmentation. (B) Depigmentation on the ventral side of both wrists. (C) Depigmentation of well-defined edges on the back of the hand.



Figure 2: (A-D) Wood's lamp examination. Enhancement of depigmented skin. No achromic areas, as seen in vitiligo, may be observed.

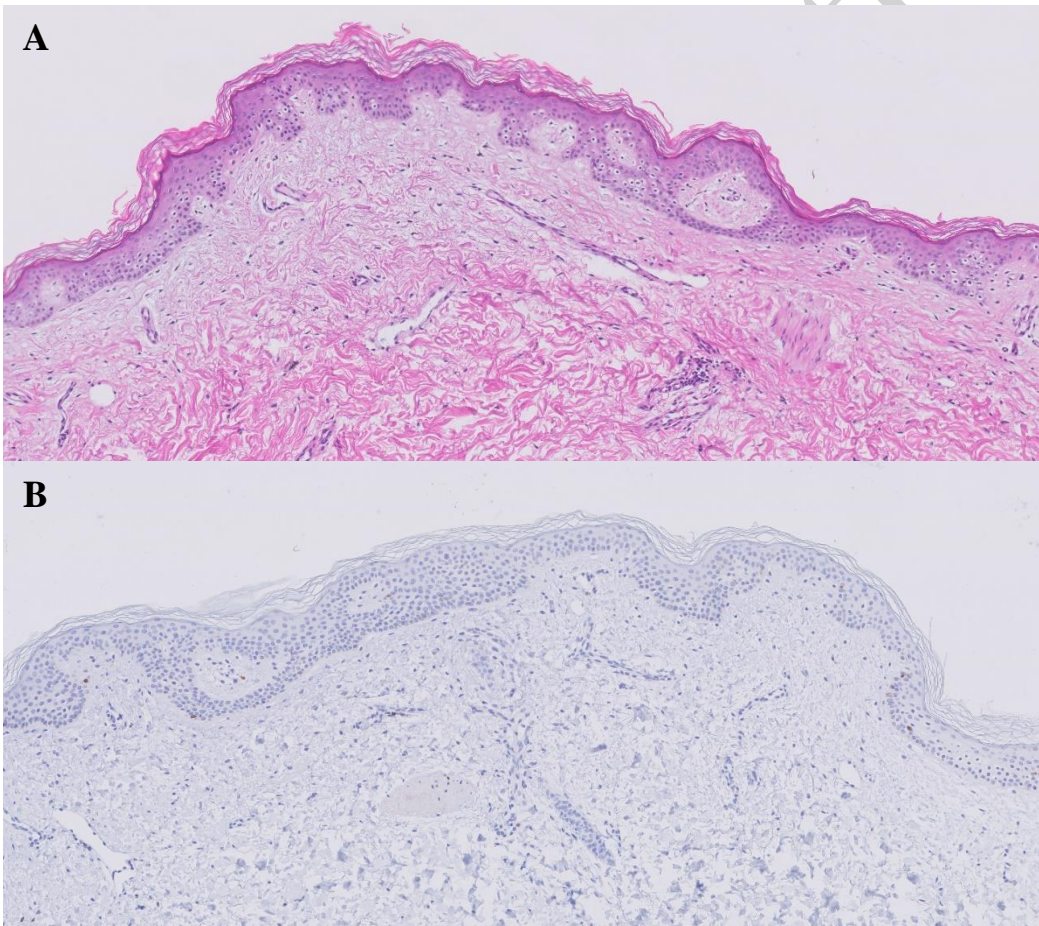


Figure 3: (A) Orthokeratotic epidermis of slightly reduced thickness, with a conserved ridge pattern, with hypopigmentation. (B) Immunostaining (S100x3): Few melanocytes can be appreciated at both edges of the lesion.