

## CASE REPORT

# Airborne contact dermatitis caused by epoxy resin: case report

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### RESUMEN

**Introducción.** La dermatitis aerotransportada es una lesión dérmica producida por sustancias de tipo irritativo o alérgico. Se clasifica en varios tipos: alérgica, fotourticaria, fototóxica, urticaria de contacto, lesión por fotosensibilidad, púrpura, parestesias, lesión acneiforme, telangiectasias, entre otros. En general, su pronóstico es bueno, ya que suelen remitir cuando se pierde el contacto con el agente causal. **Caso clínico.** Paciente masculino de 21 años con una erupción facial acneiforme recurrente de una semana de evolución. La prueba de parche mostró positivo en D4 para bisfenol A diglicidiléter (BADGE), con lo que se confirmó el diagnóstico de dermatitis aerotransportada por BADGE. **Conclusión.** Esta condición está relacionada de manera directa con la profesión, por lo cual cuando un trabajador presenta lesiones compatibles debe considerarse una dermatitis aerotransportada.

**Palabras clave.** Dermatitis por contacto. Alergia. Prueba de parche.

### ABSTRACT

**Introduction.** Airborne dermatitis is a skin lesion caused by airborne irritative or allergic substances. It can be classified in various types: allergy, photo-urticaria, phototoxicity, contact urticaria, photosensitive lesions, purple skin disease, paresthesias, acne skin lesions, telangiectasia's, among others. Overall prognosis is good as it subsides when contact with the causal agent is lost. **Case report.** 21-year-old male presented with a recurrent facial acneiform rash of one week of evolution. The patch test was positive in D4 for bisphenol A diglycidyl ether (BADGE), therefore BADGE airborne dermatitis was confirmed. **Conclusion.** This condition is directly connected with the occupation, therefore when a worker presents compatible lesions airborne contact dermatitis should be considered.

**Key words.** Contact dermatitis. Allergy. Patch test.

### INTRODUCTION

Airborne contact dermatitis (ACD) is a skin injury characterized by acute or chronic dermatoses caused by allergic or irritative substances in gaseous, liquid or solid states. When such substances are released into the air, they generate different kinds of lesions when exposed to dermal tissue. There is no reliable information in regards to an incidence of this type of dermatitis, due to an underestimated frequency.<sup>1</sup> ACD presents different types of lesions: allergies produced by different types of woods, insecticides, plants, plastics; irritant lesions by fiberglass or charcoal, ethylene oxide, mustard gas; photo-urticaria induced by chlorpromazine; phototoxicity caused by psoralens; contact urticaria provoked by latex and epoxy resins; photosensitive lesions produced by thioureas

or pesticides; purple skin disease by epoxy resins; paresthesias induced by pyrethroid; acneiform lesions caused by epoxy resins and chlorinated hydrocarbons; pustulosis subcorneal injuries provoked by trichloroethylene; erythema multiforme caused by tropical timber; lichen plaques by color developers; fixed erythema lesions by tropical wood; dyspigmentation caused by fragrances; exfoliative dermatitis by trichloroethylene; telangiectasia's produced by fluorochemical products.<sup>2-4</sup> The overall prognosis is noteworthy and the prevention at work using specific creams and protective clothing for the activity is the only etiopathogenic treatment.<sup>5</sup> In connection with symptomatic treatment, using topical steroids is recommended. Pruritus should be treated with systemic antihistamines while antibiotics should only be used in case of bacterial infection.<sup>6</sup>

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Manuscript received: November 15, 2015.

Manuscript accepted: December 03, 2015.



**Figure 1.** Inflammatory acne lesions located on the exposed parts of the patient's face.

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A 21-year-old male presented with a 1-week history of recurrent pruritic rash on his face. No medical history of interest was provided. Skin reactions appeared when he entered the clean room laboratory, of which walls are painted with a substance that contains bisphenol A epoxy resin (BADGE); despite the area being provided with a continuous airflow system. Upon physical examination, acneiform, erythematous, papular, lichenified lesions were detected on the exposed areas of the face (Figure 1). The patient presented no other general symptoms. The diagnosis was made using patch test, which was positive for BAGDE on D4 (according to International Contact Dermatitis Research Group guidelines). The patient was diagnosed with ACD caused by BADGE. The patient was then treated with oral antihistamines (levocetirizine 5 mg/24h/orally) and topical steroids (clobetasone 0.05%/day). Skin lesions cleared within 2 days after the initiation of treatment.

## DISCUSSION

The case presented shows how it is possible to identify ACD, which demonstrates a direct correlation with

an individual's occupation. ACD is produced when a sensitizing substance spreads through the air and is then deposited predominantly on the face as well as the back of hands and arms; it can also adhere to the lower extremities, particularly on females.<sup>7</sup> Clinical evolution is characterized by an itching or burning sensation, and erythematous lesions are often accompanied by signs of scratching; injuries vary depending on the etiopathogenic agent. The differential diagnosis should be established with psoriasis, seborrheic dermatitis, dermatophytosis and atopic dermatitis; therefore, different mechanisms can coexist, thus complicating proper diagnosis.<sup>8</sup> However, associating the clinical progression with a positive patch test on D4 for BADGE, could confirm the diagnosis of ACD induced by epoxy resins. Treatment for ACD depends on which etiologic agent conditions the dermatoses, that said, the use of protective creams and protective clothing at work is recommended.<sup>9</sup> Usually ACD responds appropriately with the use of oral antihistamines and topical corticosteroids, as did in our case.<sup>10</sup> We conclude there is an undeniable risk to develop such condition in different professions, especially in areas where workers are exposed to different sensitizing agents. Consequently a worker with compatible skin lesions, you should think getting tested for a possible ACD diagnosis.

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