

CASE REPORT

Erythema multiforme-like lesions revealing allergic contact dermatitis to exotic woods

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Abstract

We report a 45-year old man who developed maculopapular exanthema on the inferior cervical folder, axillae and umbilicus, as well as erythema multiforme-like lesions on the wrists after the introduction in his work of pao ferro (*Machaerium scleroxylon*). Patch tests were positive to *pao ferro* and ebony. This case highlights the importance of patch tests for the confirmation of the culprit agent in occupational dermatoses and also to identify other occupational allergens that the patient should avoid. Tropical woods contain quinones that could explain the possible cross-reactions between woods belonging to different families.

Keywords: Allergic contact dermatitis, erythema multiforme, exotic, tropical, woods

Introduction

Machaerium scleroxylon is a tropical hardwood used in the manufacture of furniture, musical instruments and other utensils (1,2). This wood is an irritant to the oral mucosa and upper respiratory system but also a strong irritant and/or sensitizer to the skin (1,3,4).

Case report

A 45-year old woodworker was observed at our Emergency Department due to an exuberant maculopapular exanthema of the inferior cervical folder, axillae and umbilicus, as well as erythema multiforme-like lesions on the wrists, evolving for 7 days (Figure 1). The patient also complained of intense pruritus. History of atopy and ocular or respiratory symptoms were denied. This eruption started few days after the manipulation of *pao ferro* (*M. scleroxylon*), a material recently introduced in his daily work. Skin biopsy of the cervical lesions revealed irregular acanthotic, parakeratotic and spongiotic epidermis and the presence of a focal infiltrate with formation of small granulomas in the superficial and mid dermis (Figure 2). Differently the wrist lesion showed acanthosis with small foci of necrosis, marked papillary

edema and a predominantly perivascular lymphocytic infiltrate (Figure 3). The patient was initially treated with medium-potency topical corticosteroid and oral antihistamines. However a switch to systemic corticosteroid was needed due to further crops of new lesions. Patch testing with Portuguese Contact Dermatitis Group standard series, plant series and wood extracts in petrolatum was performed (Figure 4). Positive reactions to *M. scleroxylon* (5, 10 and 20%:+++) and ebony (5%:++ and 20%:+++) were detected on day 2 and 4. The others allergens tested were all negative, including other exotic woods, such as wengè, afzelia and kambala.

Discussion

Wood dusts from tropical hardwoods can cause various skin, mucosal and respiratory distress. In skin both irritant and allergic dermatitis can occur. Allergic reactions include mainly allergic contact dermatitis (type IV reaction), as our patient, and less frequently contact urticaria (type I reaction (3)).

M. scleroxylon is a tropical hardwood, more commonly known as *pao ferro*, which is used in the manufacture of furniture, musical instruments and other objects because

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Figure 1. Maculopapular lesions on (a) the neck, (b) axillae and (c) umbilicus; (c) erythema multiforme-like lesions on the wrists.

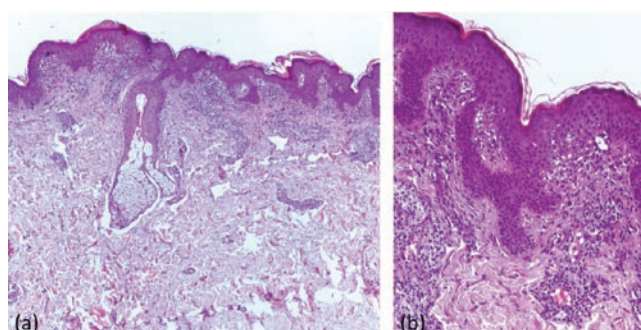


Figure 2. H&E-cervical lesion.

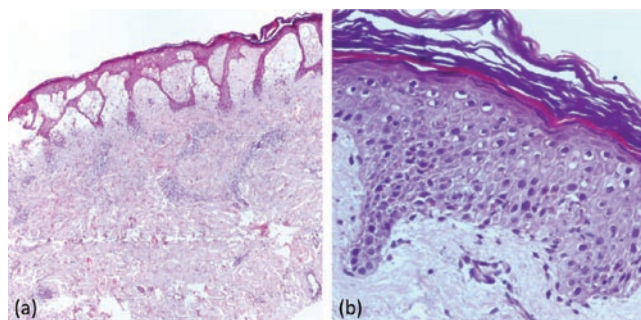


Figure 3. H&E-wrist lesion.

it is less expensive and has similar appearance and strength when compared to other exotic woods. However exposure to this wood can cause occupational and non-occupational contact dermatitis and contact urticaria in rare instances. Usually it affects woodworkers through airborne exposure, and less frequently end-users of finished wood products, namely musicians (1,3,5,6). Our patient illustrates a peculiar presentation of occupational allergic contact dermatitis with erythema multiforme-like lesions. In fact, this type of reaction with target lesions has been reported in association

to tropical and subtropical woods, namely *M. scleroxylon*, *Dalbergia nigra* and *Eucalyptus saligna* (7–9).

Exotic hardwoods contain many contact allergens, in particular quinones, with (R)-3,4-dimethoxydalbergione being the main sensitizer in the case of *M. scleroxylon*. Although this quinone is exclusive of *Machaerium* species, it can in fact cross-react with other quinones present in different tree families (1). This is a plausible explanation for the positivity observed to both pao ferro and ebony in our patient.

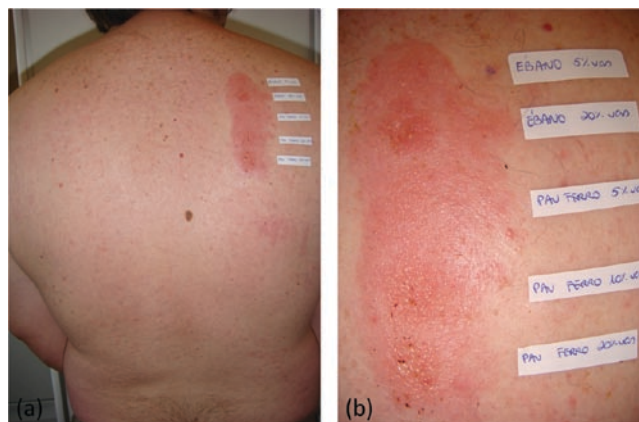


Figure 4 .(a) Patch testing with standard, plant series and wood extracts in petrolatum; (b) Positive reactions to ebony (5%:++ and 20%:+++), and *M. scleroxylon* (5, 10 and 20%:+++).

In conclusion, this case illustrates a peculiar presentation of occupational allergic contact dermatitis with erythema multiforme-like lesions. Moreover, highlights the importance of patch tests for the confirmation of the culprit agent in occupational dermatoses and also to identify other occupational allergens that the patient should avoid. Tropical woods contain several contact allergens, in particular quinones and their presence is possibly responsible for cross-reactions observed between woods of different tree families. Identification of the wood species involved is of paramount importance for establishing the correct diagnosis and for providing appropriate advice to sensitized professionals.

Declaration of interest

The authors declare no conflicts of interest.

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