

Contact dermatitis caused by ebony wood

Christina Wlodek and Christopher R. Lovell

Royal United Hospital Bath, Combe Park, Bath, BA1 3NG, UK

doi:10.1111/cod.12299

Key words: allergic contact dermatitis; occupational; patch test.

Case Report

A 52-year-old, non-atopic, established male woodworker first developed episodic facial eczema and periorbital

oedema in October 2011 after he began using various exotic hardwoods for his intricate work (Fig. 1). At first the reaction fluctuated in intensity, but with time it became more persistent and extensive, affecting his face, neck and arms, and by early 2013 he was developing erythema and dryness on all exposed areas after entering his workshop. If he rolled his sleeves down, his arms would be spared. He also noticed a persistent runny nose. The eruption responded to topical steroids. He was patch tested with the British baseline series and with a selection

Correspondence: Christina Wlodek, Royal United Hospital Bath, Combe Park, Bath, BA1 3NG, UK. Tel: +0117 923 0000; Fax: +0117 342 2845. E-mail: christina.wlodek@gmail.com

Disclosure: None.

Funding: None.

Conflicts of interest: The authors declare no conflict of interests.



Fig. 1. A typical example of an ornamental wooden box, inlaid with ebony, that this patient was working on. The pale orange colour within the flowers was created by inlaying *Piquia amarello* wood.

of wood dusts that he had been in contact with, provided from his workplace. He was an expert dendrologist, and was able to provide binomial botanical names for all of the wood samples.

On D2 of patch testing, the patient developed a definite papular 1+ positive reaction to African ebony (*Diospyros crassiflora*) wood dust dispersed in white soft paraffin. The reaction was still papular 1+ at D4. There was a less convincing, non-palpable erythematous reaction to *Piquia amarello* (*Aspidosperma tomentosum*). Ten control individuals were tested with the same wood dusts, and none developed positive or irritant reactions.

At the second patch test reading, the patient had a slight reactivation of his previous eruption affecting the

forearms, which further supports the relevance of the positive patch test reactions.

Discussion

The allergen within ebony wood is macassar quinone. Like other naturally occurring quinones, it has high sensitizing potential. Schulz et al. showed, in guinea-pigs, that the sensitizing effect of naphthoquinones depends on the length and position of the side chain attached to the quinoid ring as well as on the substitution of the carbon atom adjacent to the side chain bearing the carbon atom. Sensitization was abolished by substituting compounds at this carbon atom position (1).

The reactivation phenomenon seen in our patient is well recognized and hypothesized to be caused by reactivation of memory T cells persisting at the previous contact site (2).

There are few reported cases of occupational contact dermatitis specifically caused by the Ebenaceae family (3, 4). Although the allergen is a potent sensitizer, fewer than expected cases may be reported, as it is mainly found deep inside mature trees, and exposure to it is therefore probably rare.

A low threshold for patch testing patients with potential exposure to exotic woods, both at work and in the recreational setting, should be employed. Ideally, samples of the woods to which patients are exposed should be used to obtain a valid result.

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