

Allergic contact dermatitis caused by the Boston fern *Nephrolepis exaltata* 'Bostoniensis'

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We report a patient with occupational contact dermatitis caused by the Boston fern *Nephrolepis exaltata* 'Bostoniensis' (Fig. 1).

Case Report

A 49-year-old male nursery employee (a skilled gardener) was referred by the Department of Occupational and Environmental Medicine with a vesicular and scaling hand eczema, primarily on the two first fingers and dorsum of the right hand. The patient had worked as a greenhouse gardener for 33 years, primarily with *Euphorbia* species, without skin problems. In his trainee years, the patient worked with Boston fern, and recalled transient redness, but did not think about this at the time. Two years ago, he again started working with Boston fern and the seasonal cultures *Aster* and *Osteospermum*. After a year, dermatitis developed on the first and second fingers on the right hand, and on the dorsum of the right hand. The two fingers were used for removing dead *Euphorbia* flowers, as well as pinna ('leaves') and stipes ('stems') from the Boston ferns. The patient used gloves intermittently during the work day. Pesticides were not used in the nursery.

The patient believed that the nectar from flowering *Euphorbia millii* was the cause of the dermatitis and also the cause of rhinitis symptoms. The patient was prick tested with the European standard inhalant allergens,



Fig. 1. Boston fern *Nephrolepis exaltata* 'Bostoniensis' used for testing.

latex, and the flowers of *E. millii*, without reacting. Furthermore, he was patch tested for 48 h, according to ICDRG/ESCD guidelines, with the European baseline series, supplemented with Boston fern pinna and stipe in ethanol and water, *E. millii* flower in water and ethanol, true chamomile 2.5% pet., *Chrysanthemum* extract 3% pet., feverfew 1% pet., *Argyranthemum frutescens* 1% and 3% pet., and gloves 'as is'. *Osteospermum* was not available for testing.

The only reaction found was a persistent follicular reaction to Boston fern pinna aq. on both day (D) 3 and D7. To exclude an irritant reaction, 31 controls were patch tested with Boston fern pinna aq.; of these 30 did

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not react, and 1 developed a weak irritant response on D3 that vanished by D7.

Discussion

The Boston fern, *N. exaltata* 'Bostoniensis', a popular cultivar of the sword fern with arching fronds, is often used in hanging baskets, and is commonly grown in the Danish nursery industry. Boston fern appears to be a very rare contact allergen, as, apparently, contact dermatitis has not been reported since 1989, when Stoof and Bruynzel described a similar reaction caused by *Nephrolepis*, primarily involving the fingertips, in 3 nursery workers (1).

The unique dermatitis pattern seems to be related to the process of preparing the plants for sale, involving gripping dead fronds with the first two fingers, with the frond resting on the back of the hand above the two fingers.

To the best of our knowledge, only two other groups have reported contact dermatitis caused by ferns, in both cases in nursery workers. Hausen and Schultz described contact allergy to *Arachniodes adiantiformis*, the leatherleaf fern (2), and de Cock et al. described contact allergy to *Pteris ensiformis* 'Evergemeiensis' (3).

In conclusion, ferns appear to be very rare causes of occupational contact dermatitis.

References

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