

Protein contact dermatitis caused by worms and insects used to feed exotic birds

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There may be many obstacles in diagnosing patients with contact dermatitis. The following patient presented with a non-specific history that demanded very careful consideration, as his occupational exposures were very unusual.

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Case Report

A 60-year-old zoo owner was referred to our clinic in February 2013. He had no previous skin disease, and at the time of referral he had suffered from severe and generalized dermatitis almost constantly present for the last 18 months.

The patient used to be a carpenter, before opening his own zoo park 20 years ago. The main attraction of the zoo is the large variety of over 1500 exotic birds. He has five employees, including himself, and he participates in all of the maintenance work of the park equally with the other workers. None of the other employed workers had skin manifestations. No one used protective gloves on a daily basis.

The patient's condition first developed in summer 2011, when he was trimming some of the plants. It started with a vesicular hand eczema, which then spread to his whole body, including the genitals and ear tracts. He was treated several times with systemic corticosteroids, which effectively reduced his symptoms.

Our physical examination showed severe hyperkeratotic hand eczema with erythema, scaling, and fissures, most severely on the hypothenar eminence of the hands and the pulps of all digits. Both fresh and old vesicles were observed, and the cuticles of all of the nails were damaged (Fig. 1).

Patch testing was performed with the European baseline series, an extended patch test series, and the



Fig. 1. Crickets used as feed on the patient's hand; chronic protein contact dermatitis hyperkeratosis with vesicles on the ulnar prominence of the hand can be seen.

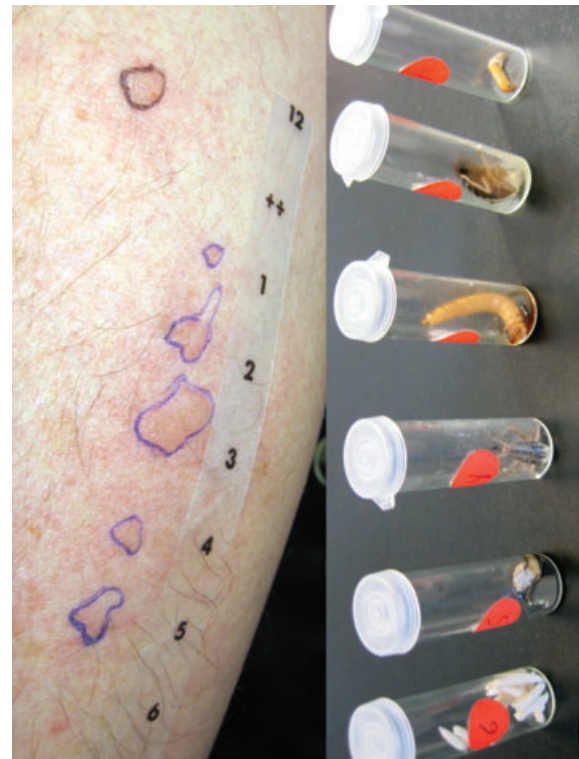


Fig. 2. Prick-to-prick test showing positive reactions to materials 2, 3, 4, and 5. The tested materials were: (1) *Tenebrio molitor* larvae; (2) cockroaches; (3) *Zophobas morio*; (4) crickets; (5) *Galleria mellonella*; and (6) maggots.

perfume series (Finn Chambers® and Scanpor® tape). The patch tests were applied to the upper back and were occluded for 48 hr. Readings were performed on D2, D3, and D7, according to the recommendations of the International Contact Dermatitis Research Group (1). No tests gave relevant positive reactions.

A prick-to-prick test was performed on the animal feed, which included *Tenebrio molitor* larvae (mealworm), *Zophobas morio* (superworm), cockroaches, crickets, *Galleria mellonella* larvae, and maggots. A positive reaction was defined as a wheal of least 3 mm in diameter after 15 min. The patient had positive reactions to *Z. morio*, cockroaches, crickets, and *G. mellonella*. Specific IgE was increased to more than twice the normal range for cockroaches; other specific IgE tests were not available (Fig. 2).

All information and latin names given by the patient regarding the plantation in the park were carefully reviewed through the database Electronic Reincarnation of Botanical Dermatology by John Mitchell and Arthur Rook (<http://www.botanical-dermatology-database.info>); it was concluded that the patient had only been exposed to toxic plants, and not allergic ones.

Discussion

Contact dermatitis caused by a variety of insects is a result of sensitivity to insect proteins. These specific allergies have been described previously among anglers and occupationally exposed workers (2–4). The clinically described manifestations of protein contact dermatitis are described as chronic eczema with episodic acute urticarial or vesiculous exacerbation occurring within minutes after contact with the allergen (5, 6).

The patient in the present case report suffered from protein contact dermatitis caused by worms and insects used as animal feed. This case serves as a reminder of how important it is to obtain information regarding occupational hazards in a patient suffering from unexplained

dermatitis. The patient did not suspect the animal feed to be the cause of the dermatitis, but thought that it was the trimming of the plants, and, as a protective measure, he had employed a gardener to avoid exposure to plants, which had no positive effect on his skin condition. The diagnosis of protein contact dermatitis was a result of the clinical picture combined with his occupational exposures and relevant allergological tests.

The patient's condition has now become a chronic persistent condition without flare-ups, but he does not feel that the benefits of work procedures involving the use of protective gloves or avoiding the allergens compensate for the loss of contact with his animals. At 3-month follow-up, his vesicular response had subsided.

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