

REFERENCES

1. Brownstein MH. Fixed drug eruptions due to ephedrine isomer. *Arch Dermatol* 1968;97:115-19.
2. Shelley WB, Shelley ED. Nonpigmenting fixed drug eruption as a distinctive reaction pattern: examples caused by sensitivity to pseudoephedrine hydrochloride and tetrahydrozoline. *J Am Acad Dermatol* 1987;17:403-7.
3. Krivda SJ, Benson PM. Nonpigmenting fixed drug eruption. *J Am Acad Dermatol* 1994;31:291-2.
4. Taylor BJ, Duffill MB. Recurrent pseudo-scarlatina and allergy to pseudoephedrine hydrochloride. *Br J Dermatol* 1988;118:827-9.
5. Villas Martínez F, Joral A, Garmendia JF, Aguirre I. Generalized dermatitis due to oral ephedrine. *Contact Dermatitis* 1993;29:215-16.

Anaphylaxis due to a red harvest ant bite

HYMENOPTERA sting anaphylaxis, a common disorder, is mainly caused in Europe by honeybees (*Apis mellifera*) and wasps (*Vespa* and *Polistes*). In South America and increasingly also in the USA, stings and bites of the fire ant (*Solenopsis invicta*) are becoming an endemic problem (1, 2). These insects attack by biting to attach themselves and then inserting their sting, which contains the venom. Allergic reactions to other stinging ants have also been described. Thus, systemic reactions to stings of the Samsun ant (3) in Saudi Arabia and the jumper and bulldog ants (4) in Australia have been reported. Single cases of anaphylaxis to other ants such as the Ponerinae subfamily (5) have been noted.

We report here an unusual case of severe anaphylactic reaction to a bite of the red harvest ant (RHA) (*Formica rufa*), a widespread species in central Europe.

A 12-year-old boy with known hay fever suffered an ant bite during a forest walk in September.

An unusual case of severe reaction to the bite of an ant common in Europe.

Minutes after the bite, facial flushing, urticarial exanthema, wheezing, and severe dyspnea occurred, requiring treatment with bronchodilators and corticosteroids in an emergency unit.

The boy's mother killed and kept the biting ant, which was identified later as an RHA by a university entomologist. Previously, the boy had tolerated stings of other Hymenoptera such as bees and wasps without allergic reaction.

An allergologic investigation was performed 6 months later. Skin prick tests with a sterile whole-body extract of RHA produced a large wheal and flare reaction in the patient, but were negative in 10 healthy volunteers. For measurement of specific

IgE against RHA, an extract (1/10 w/v) of this ant was coupled to activated disks (5 µl/disk) and incubated with the patient's serum. The patient's serum was clearly positive (1.8 U/ml), while controls with normal and also with high IgE serum gave a negative result. However, a serum positive for the imported fire ant also gave a positive result (1.7 U/ml) with the RHA disks. An immunoblot with the patient's serum and a positive control to imported fire ant (RAST value 2.5 kU/l) detected some common allergens, but mostly there was a clear difference between the two ants. Furthermore, significant amounts of specific IgE against fire ant, honeybee, and wasp were detected in the patient. These findings suggest possible cross-reactivity between the whole-body extract of the European RHA and the venom of this stinging species of Hymenoptera.

The clinical history, the positive specific skin prick test, and the presence of IgE antibodies left no doubt of an anaphylactic reaction to an RHA bite. This evidence also excluded a purely toxic reaction induced by formic acid, the main component of RHA venom.

As far as we know, this is the first reported case in the literature of a well-documented anaphylactic reaction to an RHA bite. RHA venom has not been clearly identified until now. The most important components besides formic acid are protein alkaloids such as dialkylpiperidin, but also enzymes such as hyaluronidase have been found. As the child described here also showed specific IgE to honeybee and wasp, a cross-reaction with some of the common components in these venoms cannot be excluded. Furthermore, the RHA whole-body extract used could contain other cross-reacting proteins. The pre-existing hay fever may have aggravated the anaphylactic reaction in our patient. One study of asthmatic children has found prevalences of specific IgE to common outdoor insects (such as moth, cricket, grasshopper, housefly, and ant) (6). For lack of other sera, further *in vitro* studies of cross-reactivity to define the possible cross-reactivity of the RHA whole-body extract with the venom of fire ant, honeybee, wasp, and phospholipase A could not be performed.

Although RHA bites happen quite often, especially to children, anaphylactic reactions are extremely rare and possibly of clinical importance only in predisposed children. Nevertheless, the case presented here suggests that such a severe, anaphylactic reaction could occur also to common ant bites. Other, similar cases should be investigated to determine the possible cross-reactivity with other Hymenoptera species, because this could have important consequences for patients allergic to the stings of common insects.

Key words: allergy; ant; insect bite.

P. SCHMID-GRENDELMEIER, M. LUNDBERG, B. WÜTHRICH*

*Allergy Unit
Department of Dermatology
University Hospital
Gloriastrasse 31
CH-8091
Zürich
Switzerland
Tel. +41 1 255 30 79
Fax: +41 1 255 44 31
E-mail: wuthrich@der.usz.ch

Accepted for publication 2 November 1996

Copyright © Munksgaard 1997

ALLERGY 1997;52:230-231

REFERENCES

- Hoffman DR. Fire ant venom allergy. *Allergy* 1995;50:535-44.
- de Shazo RD, Butcher BT, Banks WA. Reactions to the stings of the imported fire ant. *N Engl J Med* 1990;323(7):462-6.
- Dib G, Guerin B, Banks WA, Leynadier F. Systemic reactions to the Samsun ant: an IgE-mediated hypersensitivity. *J Allergy Clin Immunol* 1995;96(4):465-72.
- Street MD, Donovan GR, Baldo BA, Sutherland S. Immediate allergic reactions to Myrmecia ant stings: immunochemical analysis of Myrmecia venoms. *Clin Exp Allergy* 1994;24(6):590-7.
- Kim SC, Hong CS. A case of anaphylaxis by ant (*Ectomomyrmex* spp.) venom and measurements of specific IgE and IgG subclasses. *Yonsei Med J* 1992;33(3):281-7.
- Lire MB, Riordan MM, Fischer TJ. Prevalence of insect allergen-specific IgE in allergic asthmatic children in Cincinnati, Ohio. *Ann Allergy* 1994;72(1):45-50.

Occupational asthma caused by black henna

WE REPORT the case of a 35-year-old woman who complained of rhinorrhea, sneezing, nasal obstruction and itching, hyposmia, dysphonia, conjunctivitis, and dry cough at work for 1 year. She had worked in an herbal shop for the past 5 years. The above symptoms began 1 year before and became more intense with time. The patient subsequently complained of frequent episodes of wheezing, cough, and dyspnea at the workplace; the dyspnea also awakened the patient frequently at night. The patient reported that the symptoms lessened when she stayed away from work and that they worsened at work when she inhaled the powder of black henna (*Indigofera argentea*), a species of henna that is botanically distinct from the more common red henna (*Lawsonia inermis*) frequently used as a hair dye and known to cause occupational sensitization in hairdressers (1, 2). Initially, the patient had sold red and black henna in vacuum-sealed packages. Two years before symptoms appeared, the patient had begun selling loose powdered henna (red and black).

She had been treated with inhaled salbutamol

and beclomethasone dipropionate with only minor improvement of her dyspnea.

History was negative for atopy. Skin prick tests (SPT) with the more common aeroallergens yielded negative results except for a 2.5-mm mean wheal diameter for grass pollen; 1% histamine and glycerin solutions were used as positive and negative controls, respectively (histamine mean wheal diameter, 10 mm). SPT performed with a 1/10 dilution of the black henna powder produced a wheal that was half the diameter of the histamine wheal (SPT was first performed with 1/1000, 1/100 dilutions); SPT with red henna was negative at the above dilutions. Total IgE antibodies were elevated: 950 IU/ml. Specific IgE were positive for grass pollen (class 3) and negative for other common aeroallergens; specific IgE for henna were also ascertained by RAST: red henna was negative; black henna was positive (class 3).

Spirometry revealed the presence of moderate bronchial obstruction that was reversible after the inhalation of a β_2 -agonist. Bronchial challenge with methacholine showed a high degree of bronchial hyperactivity; $PD_{20}FEV_1 = 115 \mu g$. A significant broncho-obstructive response was also obtained after inhalation of ultrasonic fog.

For evaluation of the objective relationship between symptoms and work, the patient was instructed to measure peak expiratory flow (PEF) for 15 days at work and 15 days away from work (3). At the end of the above period, during which PEF was monitored, the patient reported having been free of symptoms when away from work, and that dyspnea reappeared during the day and at night during the 15 days at work in the herbal shop. The variation in mean PEF and diurnal variability agreed with the above pattern of symptoms: during the work period, intraday variability was significant (>20%), and the mean PEF value was below the theoretical value for height and age.

On the basis of the clinical history, specific SPT and RAST positivity, and the positive pattern of PEF measurements, the diagnosis of occupational asthma to *I. argentea* was made (4). The patient was advised to return to work after elimination of the containers of *I. argentea*. She was prescribed treatment with budesonide 400 mg b.i.d., salmeterol 50 μg b.i.d., and salbutamol 200 μg p.r.n.

At a control visit 2 months later, the patient reported an improvement of her respiratory symptoms, although dry cough persisted during the night; she had not used salbutamol p.r.n. She no longer

*The first report of
allergic asthma in a
woman working in an
herbal shop.*

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.