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Urticaria and Anaphylaxis Due to Sting by an Ant (*Brachyponera chinensis*)

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Sir,

Brachyponera chinensis, a winged ant, has a wide distribution in Japan (1) and its sting is known to cause a local reaction. The systemic reaction to the sting, however, is rare. We therefore report the case of anaphylaxis caused by the sting of *B. chinensis*.

CASE REPORT

A 20-year-old Japanese male noticed eruptions 2 h after receiving a sting on the buttock by an ant. On visiting our clinic, physical examination revealed extensive urticaria without any signs of anaphylaxis, such as dyspnea, hypotension or sweating. He had been repeatedly stung by the ant until onset of urticaria. Prednisolone (100 mg with 500 ml D.I.V. for 2 h) was administered, but shortly after this infusion he exhibited anxiety and dyspnea. His blood pressure was 78/52, indicating that his condition had progressed to anaphylaxis. He was immediately given i.v. volume expander, oxygen supply and soluble methyl-prednisolone (total 1500 mg). Fifteen minutes later his blood pressure recovered to 114/76 and he was admitted to our hospital. On the next day, his course was uneventful. Later, the patient brought some of the ants to us for examination. They had wings and were identified as *B. chinensis*. His titres of specific IgE were as follows: yellow jacket; 0.34 UA/ml, honeybee; <0.34 UA/ml, long-legged wasp (*Polistes*); 34.9 UA/ml (UA = unit allergen).

DISCUSSION

B. chinensis is an ant which has wings during the reproductive period, especially from June to September in Japan. It belongs to the order Hymenoptera, family Formicidae and genus *Euponera*, and is widely distributed in Japan, China, Taiwan and New Zealand (1). These ants live in rotten wood, and in Japan they can be found in old wooden houses. It is thought that the venom of *B. chinensis* contains hyaluronidase, phospholipase A2, histamine, amines, formic acid and terpenoid

(2). The venom of the fire ant has been analysed in detail, but that of *B. chinensis* has not been fully investigated. The sting of *B. chinensis* induces local reactions such as pain, warmth and angioedema. In Japan, however, only one case of anaphylaxis caused by the sting of *B. chinensis* has been reported (3). We believe that being repeatedly stung by this kind of ant sensitized the patient to the venom, and that the final sting induced a systemic reaction such as anaphylaxis. Although we could not examine whether the patient had specific IgE to the *B. chinensis*, he showed a positive reaction to the venom of the long-legged wasp, belonging to the order Hymenoptera. It is therefore speculated that the antigens of venom of *B. chinensis* cross-react with antigen of the long-legged wasp. Further investigation is needed to analyse the venom of *B. chinensis*. There is a report from the USA that fire ants cause not only a local reaction but also anaphylaxis (4). The sting of *B. chinensis* is one of the causes of anaphylaxis in Japan, Taiwan, China and New Zealand.

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