

Contact urticaria and asthma from *Sarcophaga carnaria*

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We describe a case of immediate skin (urticaria and angioedema) and mucosal reactions (nasal itching, sneezing, rhinorrhoea and dyspnoea) by exposure to maggots of the flesh fly (*Sarcophaga carnaria*) used by an amateur fisherman. It is known that larvae used as fishing bait are potential contact sensitizers among fishermen (1–5).

A 47-year-old, non-atopic angler presented with hand and eyelid oedema, itching, urticaria localized to his upper limbs and trunk, and nasal symptoms associated with dyspnoea. The patient reported three similar episodes whenever he went fishing in a fresh-water lake in Northern Italy. At presentation, the patient suspected that the cause of his symptoms were larvae of flesh fly used as bait.

His symptoms appeared about 1–2 hours after he began fishing, and during the last episode an asthmatic attack developed after 3 hours, when he was back at home. After the first

episode, the patient was treated with cyproheptadine because it was considered that he may have had a cold water reaction. However, an ice-cube test (applied to the forearm for 4 minutes) and tests to rule out possible causes of cold urticaria were negative.

Three weeks after complete resolution of his symptoms, the patient was prick-tested with a standard panel of pollen, mite, mould extracts and foods with no positive reactions. The absence of specific immunoglobulin E (IgE) by radioallergosorbent test (RAST) confirmed the negative prick tests results.

Patch testing with the SIDAPA (Italian Society Allergological, Occupational and Environmental Dermatology) baseline series was negative. An open test with coelomic fluid from the maggots (obtained by cutting them up) was negative; prick testing with the same material gave a wheal reaction after 15–20 minutes (Fig. 1). The histamine positive control reaction was the same size as the coelomic fluid reaction, whereas the saline solution was negative. Ten control subjects (five patients with atopic dermatitis and five with chronic urticaria) were prick tested with the coelomic fluid; all were negative.

Non-specific bronchial provocation test was evaluated to exclude a hyper-reactivity using a breath-activated dosimeter; double cumulative doses of methacholine were administered, beginning with a dose of 25 ng (25, 50, 100, 200, 400, 800, 1600 and 3200 ng). We considered as the baseline FEV1 (forced expiratory volume in 1 second) that recorded after phosphate buffer (control reagent) inhalation. FEV1 was recorded 1 minute later and was followed by the next dose, respectively. The challenge sequence



Fig. 1. Immediate reaction to prick test with flesh fly maggot.

terminated when FEV1 had decreased by $\geq 20\%$, or when the maximum cumulative dose (3200 ng) had been given. A normal bronchial responsiveness was observed.

After avoiding exposure to maggots of the flesh fly, the patient improved, and some months later he began fishing again and tried using common earthworms (*Lumbricus terrestris*) as a bait. The patient did not wear gloves and came into direct contact with earthworms and he did not experience any cutaneous or mucosal reaction.

Discussion

In our patient, the probable offending allergen is derived from the maggot of *Sarcophaga carnaria* belonging to the family Sarcophagidae, genus *Sarcophaga*, order Diptera; it normally lives in animal matter. From the clinical point of view, the most frequent clinical presentation of fishing bait allergy is protein contact dermatitis, less frequently asthma and/or rhinoconjunctivitis (6–8).

The clinical history, together with the results of skin tests in the patient and in the control group, indicates contact urticaria. Moreover, the presence of urticaria and angioedema

in areas other than the direct contact site, and the presence of mucosal symptoms, suggest an immunological contact urticaria. We have not evaluated specific IgE antibodies in serum by RAST to confirm the skin tests result. After complete resolution of symptoms, our patient began fishing again and used *Lumbricus terrestris* as bait without any reaction. This suggests an absence of cross-reactivity between live fishing baits belonging to Annelida and Diptera.

Asthma-like reactions to live fishing baits may be early, late or dual (6), and cases of IgE-mediated late-asthmatic attacks due to larvae have been reported (2, 8). In our patient, the asthmatic attack developed 3 hours after he began fishing, so it could be considered a late reaction.

References

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