

Anaphylactic shock caused by ticks (*Ixodes ricinus*)

To the Editor:

Ticks are arachnids that are likely to transmit various infections such as Lyme disease (*Borrelia burgdorferi*), Q fever (*Coxiella burnetti*), Mediterranean fever (*Rickettsia Conorii*), Tularemia (*Francisella tularensis*), Arbovirus encephalitis (*Arbovirus*) and babesiosis (*Babesia divergens*).¹ Allergic reactions to Australian ticks (*Ixodes ricinus*) have been described, but they are very rare and only represent 0.7% of allergic reactions to insect bites in Australia.²⁻⁴ Radioimmunoassay has demonstrated that the reaction is IgE-mediated. The antigens are 28 to 55 kd salivary gland proteins.

On July 5, 1994, on his return from work, a 33-year-old forest worker had pruritis of the palms and soles with a hot-flush sensation, Quincke's edema of the face, abdominal pains with diarrhea, and heavy sweating. On his arrival at the hospital, his blood pressure was 90 mm Hg and two ticks were found on his skin. This man had no previous atopic history but indicated that he had frequently been bitten by wood-ticks. Test results were negative for the usual aeroallergens (i.e., house dust mites; *Alternaria* spp.; *Penicillium* spp.; *Aspergillus* spp.; cat and dog epithelia; cockroaches; and grass, mugwort, birch, and ash pollens). Skin prick test responses were negative to mosquito, horsefly, ant, wasp, and bee extracts. Results of serologic tests with *Borrelia burgdorferi* were negative. Food or drug allergy was formally excluded. In May 1995, this man collected ticks and sent them to us. A whole-body extract was obtained by stirring ticks for 12 hours in a coca solution prepared in a ratio of 1:15 (wt/vol) at 4° C. This extract was purified by centrifugation, and the supernatant was immediately bound onto cellulose disks activated with cyanogen bromide (Allerbio, Varennes en Argonne, France). The radioimmunoassay was performed by using the method described by Grassi et al,⁵ with the tick extract bound onto a solid support. The anti-IgE marked with iodine 125 (Immunotech, Marseille, France) was used for detection. The patient's total IgE level was high (860 UI/ml). The radioimmunoassay results with tick extract were positive (16 UI/ml [class 3]).

Therefore the anaphylactic reaction was most likely the result of a previous sensitization to the tick, *Ixodes ricinus*. *Ixodes ricinus* is the most common tick in Europe and can usually be found in broad-leaved trees (deciduous trees). Specific IgE of *Ixodes ricinus* does not seem to have been demonstrated up to now. This new cause of anaphylactic shock is worth recognition and should be searched for in cases of idiopathic anaphylaxis occurring after time spent in the forest.

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[TOP](#)

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