Occurrence of Cold Urticaria during Venom Desensitization

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a)-BOOSTER INJECTIONS

Desensitization is a generally safe and efficient method of providing long-lasting protection for persons hypersensitive to bee stings [1]. Rush venom immunotherapy (VIT) has been used to achieve such protection quickly [2].

A 49-year-old woman who had no previous or family history of cold urticaria or other allergic conditions was seen following a systemic reaction with generalized urticaria and angioedema caused by a wasp sting. Physical examination revealed no abnormalities. A skin test was positive to 10 ng/ml of yellow-jacket venom. Laboratory tests revealed total IgE of 130 kU/ml and a class

3 RAST for yellow-jacket venom. Rush desensitization was performed at the hospital as previously described [3]. When 60 µg of venom (cumulative dose 130 µg) was injected at 3 h 30 min into the rush session, spreading urticaria beginning at the injection site and cough were observed. Rush therapy was immediately discontinued and the symptoms disappeared without medication. During rush therapy plasma histamine was monitored using a sensitive radioimmunoassay [3]. The levels progressively increased reaching maximum 4 h after the beginning of the treatment as it is usually observed. Two days later another rush was carried out. A cumulative dose of 190 µg of venom was injected without adverse reaction.

Monthly booster injections with a dose of 100 µg of venom seemed to be well tolerated clinically. However, a great rise in plasma histamine was immediately observed after the 3-month and 1-year boosters (respectively, from 0.3 to 1.05 and from 0.3 to 0.72 ng/ml; fig. 1a). Such rises were never noted in other patients after maintenance injections. Two months after the second rush the patient began to experience very mild episodic cold urticaria triggered by exposure to cold water. These episodes gradually worsened and spread. When the patient finally reported these symptoms 1 year after desensitization, a challenge test was performed. Immersion of the forearm for 4 min in water at 4 °C led to local urticaria with pseudopods and a rapid and drastic increase in plasma histamine levels. In view of these clinical and laboratory findings, desensitization was stopped. Cold urticaria disappeared and a challenge performed 3 months later was normal (fig. 1b).

The case of this patient suggests a relationship between repeated venom injections and cold urticaria. Previously, only reactivation of a pre-existing cold urticaria by both a bee sting and desensitization has been reported [4].

Fig. 1. Plasma histamine levels before and after booster injections (a), and before and after cold water challenge (b).

References

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