

CORRESPONDENCE

Eosinophilic panniculitis in the areas of previous allergen immunotherapy: A “recall panniculitis”?

A 30 year-old-woman presented with red, itchy swellings on both her forearms, of one-year duration. The patient especially mentioned the “episodic nature” of these swellings. Dermatological examination was unremarkable except for multiple, indurated, subcutaneous nodules of 5×10 mm with overlying urticarial maculo-papular lesions on medial aspects of both forearms (*figure 1A*). She had typical symptoms of allergic rhinitis and a history of atopic dermatitis. General physical examination was normal. She stated that her complaints (itching, redness and swelling on the forearms) appeared during some daily activities such as cleaning her room and making the beds. The history revealed that the patient had been administered subcutaneous allergen immunotherapy with house dust mite (HDM) allergen extracts (Alutard SQ-ALK/Abello, Denmark) in her forearms¹ for two years, between 2005 and 2007. The patient pointed out that the lesions were strictly confined to prior injection sites and gradually developed almost two years after the allergen immunotherapy. We performed a punch biopsy with the clinical pre-diagnoses of pseudolymphoma, cutaneous lymphoma and panniculitis. The

¹ Route of application is not according to specific immunotherapy guidelines.



Figure 1. **A)** Multiple indurated, palpable subcutaneous nodules with overlying urticarial maculo-papules on the inner forearms. **B)** (HE×40), **C)** (HE×200) Diffuse eosinophil infiltration mixed with lymphocytes in the lobular and septal panniculus.

histopathological examination revealed a perivascular mild infiltrate in the upper dermis and a diffuse infiltrate in the lower dermis as well as in the subcutaneous fat tissue, rich in eosinophils. There were edema and eosinophils in the interstitial areas of the dermis (*figures 1B, C*). These findings were consistent with eosinophilic panniculitis. In order to rule out an associated systemic disease, laboratory tests including erythrocyte sedimentation rate, complete blood count, liver and kidney function tests, anti-streptolysin O, total IgE, antinuclear antibody, p-ANCA, thyroid function tests, serum iron, ferritin and chest roentgenogram were ordered. All results were normal except high total IgE level (450 IU/mL; N<100 IU/mL). To exclude aluminium contact allergy which has recently been implicated in the pathogenesis of nodular skin lesions in patients undergoing specific immunotherapy [1], we performed patch testing with an aluminium Finn chamber. No reaction was seen at the contact site 48 hours later. Positivity was detected against house dust mites and grass pollens (Stallergenes, France) in skin prick tests. We did not observe any late phase reaction thereafter. In addition, epicutaneous provocation tests done by using HDM (*Dermatophagoides pteronyssinus*) skin prick test solution (100 IR/mL, Stallergenes, France) and negative control (physiologic saline and phenol, Stallergenes, France) in a single-blind manner revealed severe itching and erythema within fifteen minutes only on the HDM solution applied forearm.

Eosinophilic panniculitis (EP), first described by Burket and Burket in 1985, is considered as a reactive histopathological pattern rather than a distinct variant [2, 3]. The etiology is diverse. It can be associated with a variety of clinical conditions, including atopic and contact dermatitis, asthma, erythema nodosum, insect bites, narcotic dependency, psychiatric diseases, thyroid diseases, sarcoidosis, streptococcal and other bacterial infections, gnathostomiasis, toxocariasis, fasciola hepatica infection, systemic vasculitis, Wells' syndrome, lupus panniculitis, deep morphea, T or B-cell lymphoma, leukemia and solid neoplasms [2, 3]. The skin lesions of EP varied from urticarial papules to purpura, pustules and ulcerative lesions; but always included a nodular subcutaneous component. Nodular lesions were the most common presenting complaint [3, 4].

Although atopic dermatitis may be considered as an etiologic factor of EP in our patient, the localization of the lesions suggests some kind of “recall phenomenon”. Eosinophilic panniculitis due to allergen-specific immunotherapy is a newly described entity reported in only one case of hymenoptera venom allergy during hyposensitization injections [5]. Our case, however, differs in several ways: first, eosinophilic panniculitis and urticarial lesions (localized to the areas previously administered allergy shots) gradually developed after cessation of allergen-specific

immunotherapy; and second, waxing and waning of lesions resulted from house dust mite exposure during daily household activities suggest a “recall urticaria (RU)-like” phenomenon.

Recall urticaria is defined as the development of localized urticarial response in the previously injected sites when antigens enter the body from another source. Although chronic accumulation of easily releasable mast cells and antigen-presenting cells was suggested to play a major role in the pathogenesis, the exact nature of RU remains unclear [6]. Episodic appearance of urticarial lesions and aggravation of subcutaneous nodules in previously injected sites of allergy vaccines (medial aspects of both forearms) suggest that intense allergen exposure via inhalation or cutaneous contact might cause not only localized urticaria, but also panniculitis, as seen in our patient. Since nasal, bronchial or intradermal provocation tests could not be performed, it is not easy to propose a new term “recall panniculitis”. However, as epicutaneous provocation tests done by using HDM prick test solution revealed a positive reaction (severe itching and erythema on the application site), and the history, (itching and swelling on forearms during daily activities), suggest the existence of a “recall phenomenon”. All these observations (patient’s history and epicutaneous provocation test results) confirm that HDM allergens could trigger inflammation via the skin. Nasal exposure and inhalation of HDM antigens may also trigger the reaction; however, since we did not perform nasal/bronchial provocation tests, this opinion remains speculative. On the

basis of the data available, we propose the term of “recall panniculitis” to describe this unusual phenomenon. ■

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