Bee-Sting Granulomas in the Skin

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Key Words

Bee sting
Foreign body
Granuloma

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The live bee-sting injection, which is one of the folk remedies for severe arthralgia/myalgia and for some chronic eczema, is occasionally being performed in the southern regions of Korea. A 43-year-old woman had multiple nodular lesions on the dorsa of her hands (fig. 1) for a period of 18 months. These mild erythematous nodules or plaque-like lesions of varying sizes were relatively fixed with some tenderness. Foci of milia-like superficial suppurations were also noted. The patient first noted the development of inflammatory swellings at the sites of 'bee-sting therapy' (from live honeybees), a treatment for preexisting skin lesions of chronic eczema-like dermatosis on the hands. The acute reactions from bee-sting-induced inflammation lasted for 10 days. Following the acute reaction, gradual worsening of the inflammation persisted resulting in nodular lesions at the site of each multiple sting injection. The change in the preexisting eczematous skin lesions was not significant. In the following months before her visit, the patient did not receive any treatment for the nodular complications due to folk therapy. There was not much discomfort on her hands and she had no systemic effects relevant to the bee-sting injuries. The physical examination revealed no other positive findings, and her past medical history and family history were noncontributory. Biopsy specimens were taken from two different sites of the firm nodular lesions and each was bisected for cultures and histologic examination. Infection with mycobacteria or fungi was excluded by smears and cultures. Histopathology showed multiple foci of foreign

Fig. 1. Multiple nodular lesions on the dorsum of the hand (white arrowheads).
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Fig. 2. A Foreign body granuloma containing yellow refractile materials (arrows). HE. $\times 100$. B Deposited sting particle with surrounding granulomatous reactions. HE. $\times 200$.
body granulomas containing yellow refractile hair-like materials (probably from the bee, 60-80 μm in diameter) in the necrotic centers surrounded by histiocytes and foreign body giant cells in the deep der-mis and subcutaneous tissue (fig. 2). A perivascular infiltration of

lymphohistiocytes was also seen in the dermis. In a CD68-staining (antibody, DAKO/Denmark) assay, the presence of a large number of histiocytes in each granuloma was confirmed. The perivascular lymphoid cells in the dermis and subcutis were composed predominantly of UCHL-1 (DAKO/Denmark) and MT1 (Biogenex/CA) positive T lymphocytes; a few L-26 (DAKO/Denmark) and MB2 (Biogenex/CA) positive B lymphocytes were admixed as well. Laboratory data including a complete blood count, erythrocyte sedimentation rate, urinalysis, and tests for liver/kidney functions, fasting glucose level, and cryoglobulin quantitation were within the normal ranges or negative.

The granulomatous skin lesions in this patient were treated with intralesional injections of triamcinolone acetonide and oral anti-inflammatory agents without significant improvement. Subsequently, partial excisions of the nodular masses were performed serially as a trial to remove remnants of the insect parts. Clinical improvements were recognized without much change of the nodular pattern in the remaining lesions.

Most insects including the honeybee (*Apis mellifica* in this case) [1] cause erythema and edema at the site of a sting in nonallergic individuals [2]. This reaction usually resolves within several days; however, in certain cases, the persistence of inciting materials (stinger and venomous components, since the honeybee leaves its stinger at the site and eviscerates itself) in cutaneous tissue may promote a local inflammatory foreign body reaction [3, 4]. The localized nodular lesions of foreign body granulomas seen in this patient are considered to be a rarely encountered complication induced by retained sting materials. Foreign substances, when injected or implanted accidentally into the skin, may cause a focal nonallergic foreign body reaction [5, 6], although a histologic decision as to whether the granulomatous reaction is of a foreign body type or an allergic type is not always clear-cut. Clinicians should be aware of the possibility that foreign body granulomas evolve from bee stingers deposited in the skin.

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