

# Foreign-body Granuloma After Honeybee Acupuncture

Sang Hyub Lee, M.D., Kyung Jeh Sung, M.D., and Jai Kyoung Koh, M.D.

*Department of Dermatology, Asan Medical Center, College of Medicine, University of Ulsan  
Seoul, Korea*

**Bee sting therapy is said to have been practised since the age of ancient Egypt.**

**Some people believe in the benefit of apitherapy for articular inflammation, hematoma, sciatica, hay fever, etc. However, honeybee has several venoms that may induce various clinical and histopathological findings.**

**We report a case of foreign-body granuloma after honeybee acupuncture for polyarthralgia. To our knowledge, this is the first report of foreign-body granuloma developing at an acupunctured site in English literature. (Ann Dermatol 8:(3)215~217, 1996).**

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*Key Words* : Bee sting therapy, Foreign-body granuloma

Foreign-body granuloma is produced not only by injected or accidentally implanted foreign materials including insect bites, but also by endogenous materials. Bee sting therapy (Apiotherapia) is used for articular inflammation, neuralgia, allergy, and hay fever in some geographic areas.<sup>1</sup> Bee sting therapy may cause various clinical manifestations from mild local reactions to severe anaphylactic shock and several histologic changes.<sup>2,3</sup> We describe a patient in whom foreign-body granuloma developed after honeybee acupuncture for polyarthralgia. To our knowledge, this is the first reported case of foreign-body granuloma after honeybee acupuncture therapy in English literature.

## REPORT OF A CASE

A 42-year-old Korean woman was presented with a three-day history of small dusky red subcutaneous nodules on the right ankle. She had suffered from polyarthralgia for the past 20 years. She had intermittently received honeybee acupuncture

for her polyarthralgia (ankle, knee, elbow, shoulder, waist, etc.) for the past three years with a schedule of two or three times a week and 50 to 60 stings each time. After each sting, local edema and redness developed, which then usually subsided within two days. Since last year, she has rarely received honeybee acupuncture. Three days ago she happened to notice a nontender subcutaneous nodule on the right ankle, which was a previous acupunctured site. The examination showed a small coin sized nontender movable subcutaneous nodule with overlying thickened erythematous skin (Fig. 1). Histopathological examination revealed mixed cell granuloma with fragmented or transverse, oblique sectioned and stick-like, longitudinal, yellowish foreign material suggestive of stinging apparatus and focal abscess formation in the dermis (Fig. 2). The infiltrating cells were polymorphous, that is, neutrophils, lymphohistiocytes, plasma cells, and a few eosinophils. The foreign materials suggestive of stinging apparatus are faintly refractile by polariscopy. The results of other laboratory studies including CBC, radiologic study, urinalysis, and multitest CMI were negative or within normal limits. The remnant skin lesion had almost completely subsided after the biopsy according to the patient's telephone call.

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**Reprint request to** : Sang Hyub Lee, M.D., Department of Dermatology Asan Medical Center College of Medicine, University of Ulsan 388-1 Poonapdong songpa-gu Seoul, 138-040 Korea

Phone: (02)224-3460; fax(02)486-7831



Fig. 1. Dusky-red coin sized movable subcutaneous nodule on the right ankle.



Fig. 2. Localized abscess formation, yellowish stick-like and oblique sectioned foreign material (arrow), and surrounding mixed cell granuloma in the reticular dermis (H&E,  $\times 40$ ).

## DISCUSSION

Clinically, reactions to stinging insects may show several manifestation from mild local reactions (erythema, edema, urticaria, pain, etc.) to fatal medical emergency (anaphylaxis, respiratory failure, etc.).<sup>2,3</sup> Histopathologically, the epidermis may show marked pseudoepitheliomatous hyperplasia, which can be confused with squamous cell carcinoma. The dermis may show dense and extensive periadnexal and perivascular infiltrates extending to the subcutis. Such infiltrates are predominantly lymphohistiocytes; numerous eosinophils are also characteristically present and eosinophilic cellulitis may occur. Lever demonstrated that a cutaneous reaction induced by an insect may produce three stages of reactive response: acute necrotic response, subacute inflammatory response and chronic lymphoid response. In the chronic lymphoid response (persistent arthropod stings), formation of lymphoid follicles resembling lymphoma are usually present.<sup>4,5</sup> Foreign-body granulomas or pseudolymphoma after multiple bee stings have rarely been reported in dermatologic literature. Occasionally, their striking clinical and histopathological findings may cause difficulty in diagnosis. Eosinophil and foreign-body reaction may be helpful clues to diagnosis.<sup>6</sup> In recent literature, the cases of foreign-body granuloma with remnant bee stingers have been reported.<sup>6,7</sup> Bee sting therapy (Apiotherapy) is said to have been practised since ancient Egyptian times. Adherent to apiotherapy believe in its benefit to human diseases including articular inflammation, hematoma, sciatica, allergy and hay fever. However recently, we have heard of a remarkable increase of patients damaged by such treatments in Italy. Granulomata due to retention of stinger fragments have developed in the form of dusky brown-red papulonodules, 3-10 mm in diameter, the histologic aspect being typical of foreign-body granuloma.<sup>1</sup> Surprisingly, some patients were told that stinger removal would probably prevent any beneficial effect of the apiotherapy. The honeybee has several venoms that induce previously mentioned clinical and histopathological findings. It leaves its stinging apparatus and its venom sac within the victim which may lead to and subsequently promote immune complex vasculitis, granulomatous inflam-

mation with activated macrophages, and suppurating and Ig-E pseudolymphoma.<sup>7</sup> Foreign-body granuloma has often been reported in dermatologic literature. Histopathologically, they may be divided into two groups; the one, allergic foreign-body granuloma, which include beryllium, zirconium, tattoo, silica, etc., show epithelioid cells, relatively few giant cells, with or without caseation necrosis, so similar to sarcoidosis or tuberculosis, the other, nonallergic foreign-body granuloma containing paraffin, talc, starch powder, endogenous keratin, urate which show many giant cells, macrophages, but few or no epithelioid cell. Polariscopy is also helpful for identification of foreign materials. Double refractileness has been shown by nylon, sutures, wood, talc, sea urchin spine, etc.<sup>4</sup> Our case of foreign-body granuloma we believe to have been formed by a remnant bee stinging apparatus because of the location of lesions on the sting injury site. In our case the presumed bee stinger is partial refractile on polariscopy. We report this case as an illustration of the cutaneous and histologic findings of bee sting therapy and its accompanying complications.

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