

## LETTERS TO THE EDITOR

### Two Cases of Morphea Associated with Hashimoto's Thyroiditis

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Sir,

The cause of morphea, or localized scleroderma, is unknown, but an autoimmune mechanism is likely to be involved. Patients with morphea have an increased incidence of autoimmune disorders, such as alopecia areata, vitiligo, systemic sclerosis, lichen sclerosus et atrophicus or lichen planus, and autoantibodies of various types (1). Thyroid dysfunction is also commonly found in systemic sclerosis (2, 3), but only rarely has this been associated with morphea. We report here on two cases of morphea in patients with onset or previous Hashimoto's thyroiditis. These cases suggest that the development of morphea is associated with an autoimmune mechanism and that an evaluation of the thyroid function should be performed in morphea patients.

#### CASE REPORT

##### Case 1

A 27-year-old woman presented with a 5-year history of a slightly tender, enlarging indurated plaque on her left forearm. On examination, her forearm exhibited shiny, sclerotic and atrophic plaque with a violaceous border. The past history of the patient was non-contributory, and relatives of the patients were not known to suffer from any autoimmune disorders.

The concentration of thyroid-stimulating hormone (TSH) was elevated (7.21  $\mu$ IU/ml; normal 0.27–4.05), but the concentrations of total thyroxine (T4) and total tri-iodothyronine (T3) were within normal limits. Scintigraphy of the thyroid gland using  $^{99m}$ TcO $_4^-$  showed decreased uptake. Antithyroglobulin antibody titre was elevated (1:400; normal <1:100), and the antimicrosomal antibody titre was 1:100. Other routine laboratory examinations showed no obvious abnormalities.

##### Case 2

A 42-year-old woman with hypothyroidism presented with a 3-month history of a sclerotic plaque on the right forearm. Examination revealed indurated plaque with a smooth surface. She had been diagnosed with Hashimoto's thyroiditis 8 years previously, but her present thyroid indices including T4, T3 and TSH were normal, with the supplementation of levothyroxine at 0.1 mg/day. Laboratory investigations, including

antinuclear antibody and anti-SCL 70 antibody showed no obvious abnormalities.

Biopsy specimens of both patients showed irregularly arranged, thickened and hyalinized collagen bundles in the reticular dermis and a patchy inflammatory infiltrate, predominantly lymphocytic admixed with plasma cells, in the dermis and subcutaneous fat. Collagen proliferation and inflammatory infiltrate thickened the trabeculae of the subcutaneous fat and displaced the atrophic eccrine glands up to the mid-dermis.

Under the diagnosis of morphea and hypothyroidism, patient 1 received oral sodium levothyroxine 0.1 mg/day and intralesional injections of triamcinolone. Patient 2 received oral prednisolone and intralesional injections of triamcinolone.

#### DISCUSSION

Systemic sclerosis is frequently associated with thyroid dysfunction or anti-thyroid autoantibodies, especially in patients with familial or a personal history of thyroid disease (2, 3). However, the simultaneous occurrence of morphea and autoimmune thyroiditis has rarely been described (4, 5). Thyroid hormones act in nuclear receptors of human fibroblasts and intermediate the regulation of collagen synthesis and degradation. The coexistence in both patients of two autoimmune diseases may not have occurred by chance, but could be attributed to autoimmune reactions elicited by the recognition of common antigens.

In our patients, the clinical course of morphea showed no correlation with the degree of thyroid dysfunction, and it is suggested that the level of thyroid hormone in thyroid disorders has no correlation with the course of the morphea lesion.

The cases described here are of interest because they enlarge the spectrum of morphea subsets that could be associated with Hashimoto's thyroiditis, even if the pathologic link between the two diseases remains speculative at the moment. Interestingly, both of our patients had morphea of the plaque type. It is not certain at present whether a specific type of morphea is more frequently associated with thyroid dysfunction.

#### REFERENCES

- Harrington CI, Dunsmore IR. An investigation into the incidence of auto-immune disorders in patients with localized morphea. *Br J Dermatol* 1989; 120: 645–648.

2. Mourier-Clavreul MC, Rousset H, Claudy A. Sclerodermie et pathologie thyroïdienne. *Ann Dermatol Venerol* 1989; 116: 701–706.
3. Ghayad E, Tohme A, Haddad F, Haddad C, Choueiry R. Scleroderma with anomalies of the thyroid function. Seven cases. *Ann Med Interne (Paris)* 1997; 148: 307–310.
4. Horita M, Takahashi N, Seike M, Nasu S, Takaki R. A case of primary biliary cirrhosis associated with Hashimoto's thyroiditis, scleroderma and Sjogren's syndrome. *Intern Med* 1992; 31: 418–421.
5. Claudy AL, Segault D, Rousset H, Moulin G. Facial hemiatrophy, homolateral cervical linear scleroderma and thyroid disease. *Ann Dermatol Venerol* 1992; 119: 543–545.

## Urticaria and Anaphylaxis Due to Sting by an Ant (*Brachyponera chinensis*)

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Sir,

*Brachyponera chinensis*, a winged ant, has a wide distribution in Japan (1) and its sting is known to cause a local reaction. The systemic reaction to the sting, however, is rare. We therefore report the case of anaphylaxis caused by the sting of *B. chinensis*.

### CASE REPORT

A 20-year-old Japanese male noticed eruptions 2 h after receiving a sting on the buttock by an ant. On visiting our clinic, physical examination revealed extensive urticaria without any signs of anaphylaxis, such as dyspnea, hypotension or sweating. He had been repeatedly stung by the ant until onset of urticaria. Prednisolone (100 mg with 500 ml D.I.V. for 2 h) was administered, but shortly after this infusion he exhibited anxiety and dyspnea. His blood pressure was 78/52, indicating that his condition had progressed to anaphylaxis. He was immediately given i.v. volume expander, oxygen supply and soluble methyl-prednisolone (total 1500 mg). Fifteen minutes later his blood pressure recovered to 114/76 and he was admitted to our hospital. On the next day, his course was uneventful. Later, the patient brought some of the ants to us for examination. They had wings and were identified as *B. chinensis*. His titres of specific IgE were as follows: yellow jacket; 0.34 UA/ml, honeybee; <0.34 UA/ml, long-legged wasp (*Polistes*); 34.9 UA/ml (UA = unit allergen).

### DISCUSSION

*B. chinensis* is an ant which has wings during the reproductive period, especially from June to September in Japan. It belongs to the order Hymenoptera, family Formicidae and genus *Euponera*, and is widely distributed in Japan, China, Taiwan and New Zealand (1). These ants live in rotten wood, and in Japan they can be found in old wooden houses. It is thought that the venom of *B. chinensis* contains hyaluronidase, phospholipase A<sub>2</sub>, histamine, amines, formic acid and terpenoid

(2). The venom of the fire ant has been analysed in detail, but that of *B. chinensis* has not been fully investigated. The sting of *B. chinensis* induces local reactions such as pain, warmth and angioedema. In Japan, however, only one case of anaphylaxis caused by the sting of *B. chinensis* has been reported (3). We believe that being repeatedly stung by this kind of ant sensitized the patient to the venom, and that the final sting induced a systemic reaction such as anaphylaxis. Although we could not examine whether the patient had specific IgE to the *B. chinensis*, he showed a positive reaction to the venom of the long-legged wasp, belonging to the order Hymenoptera. It is therefore speculated that the antigens of venom of *B. chinensis* cross-react with antigen of the long-legged wasp. Further investigation is needed to analyse the venom of *B. chinensis*. There is a report from the USA that fire ants cause not only a local reaction but also anaphylaxis (4). The sting of *B. chinensis* is one of the causes of anaphylaxis in Japan, Taiwan, China and New Zealand.

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### REFERENCES

1. Teranishi C. Japanese ants, their behaviour and distribution II (in Japanese). *Zool Mag Tokyo* 1929; 41: 312–332.
2. Ohtaki N, Oka K, Shinonaga S, Kano R. Two cases of sting by *Brachyponera chinensis* (in Japanese). *Rinsho Derma* 1988; 30: 1141–1143.
3. Wada Y, Matsumoto K, Ikeda M, Hidano S, Ando C. A case of anaphylactic shock, probably induced by *Brachyponera chinensis* (in Japanese). *J Med Entomol Zool* 1987; 38: 140.
4. Prahlow JA, Barnard JJ. Fatal anaphylaxis due to fire ant stings. *Am J Forensic Med Pathol* 1998; 19: 137–142.