

Short Communications

Grass allergy among national servicemen in Singapore

A preliminary report

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In Singapore, males above the age of 18 years have to undergo military training as part of national service. As the training involves field exercises, we have been referred patients with skin eruptions after contact with grasses.

Patients and Methods

23 patients were referred for investigation of "grass allergy" from 1989 to 1990. In Singapore, there are 17 different species of grasses (1) and we chose *Axonopus compressus* (known locally as cow grass) because this is a common grass found in the fields (1). All patients were patch tested to the European standard series and *Axonopus compressus* as a whole plant (leaves, flowers, and stem), which was gently crushed and applied as is. Patch testing was carried out and scored in the standard manner (2). All patients were also prick tested with the crushed grass (as is), a positive (histamine) control and a negative (saline) control, reactions being recorded at 20 min. Additional patch and prick tests were performed if the patients brought along other suspected grasses. 20 controls were prick and patch tested to the grass.

Results

23 Chinese male national servicemen were studied between 1989 to 1990 (mean age 21.7 years, range 18 to 36). Duration of the complaint was vague in 6 patients, while 4 reported symptoms present since childhood; 13 patients gave a history of from 2 weeks to 19 years (mean 7.6 years). 8 patients (35%) gave a personal history of atopy (atopic dermatitis, asthma or allergic rhinitis) and an additional 3 patients (13%) had a family history of atopy. 83% of the patients (19/23) did not have any skin disease at presentation. 2 patients had atopic eczema and another 2 had endogenous eczema (unclassified). 1 patient exhibited dermatographism.

Prick tests were positive to the grass in 2 patients (2/23 or 9%). 1 such patient was a 19-year-old with a personal history of asthma and allergic rhinitis. He had had the problem of an itchy rash after contact with grass

since childhood: it appeared 5 to 6 h after contact and lasted 4 to 5 days. The 2nd patient was also 19 years old and had had grass intolerance for 7 to 8 years. He was rather vague about symptoms but noted that the rashes lasted a few days after contact with grasses. He had no history of atopy. Neither patient presented with a skin eruption.

Patch tests were positive to the grass in 3 patients (3/23 or 13%). None of the 3 patients had any clinical signs of skin disease at presentation and the patch test reactions were + (2 patients) and ++ (1 patient) at 2 and 4 days. 2 out of the 3 patients had either a personal or a family history of atopy.

20 controls had negative reactions to prick and patch tests with the crushed grass.

Discussion

Grasses, grains (maize, oats, rice, etc.), sugar cane and bamboo all belong to the Gramineae or grass family. Many species, mainly grains, are said to cause contact dermatitis by mechanical irritation (3). No mention of grass dermatitis appears in standard dermatology textbooks (4, 5) except in (6). Even in a specialized text such as (7), there is only a brief mention that *Cynodon dactylon* (Bermuda grass) and *Digitaria sanguinalis* (large crab grass) can cause contact dermatitis.

When first confronted with the question of "grass allergy" in our national servicemen, we faced 2 problems. The 1st was medico-legal, in that we were required to certify as to whether a young soldier was fit to continue field training. The 2nd was whether the complaint was truly allergic, irritant in an atopic, or merely an excuse to avoid field training.

Our first impression was that most such reactions to grass were due to irritation and that atopic individuals were more susceptible. Our study, however, showed that more than 1/2 (52%) of our patients had no personal or family history of atopy. 22% (5/23) had a positive reaction, either delayed or immediate, to grass. Nor was a history of atopy an important factor in the 5 patients who had positive reactions to the grass (3/11 versus

2/12). The majority (83%) had no signs of skin disease at presentation. It did not appear possible to predict which patient would give a positive reaction to patch or prick tests based on history and examination. Nor did a positive history of atopy help.

Although the population studied was small, we felt that, from this study, it was worthwhile to test someone complaining of intolerance to grass. Our test substance, *Axonopus compressus*, may not be the only agent and perhaps a "grass mix" would be more appropriate. Contact dermatitis from grass is not commonly reported and we feel that this is probably because individuals who are intolerant to grass avoid coming into contact with it. We are seeing this problem because of a special situation in which individuals have to come into contact with grass during training. Work is in progress to test patients to a wider variety of grasses. We will also be conducting prick and patch tests with grass extracts to ascertain the allergen in grass.

In conclusion, we think that, in the majority of patients, this is an irritant contact dermatitis but that it is no more common in atopic individuals. There are some

susceptible individuals who are truly hypersensitive to the grass (*Axonopus compressus*) that we tested.

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Absence of photosensitivity in *Parthenium* dermatitis clinically resembling chronic actinic dermatitis

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Key words: *Parthenium hysterophorus*; wild feverfew; absence of photosensitivity; allergic contact dermatitis; plants; Compositae; airborne contact dermatitis. © Munksgaard, 1994.

Case Report

A 50-year-old farmer had had itchy vesiculation over the dorsa of the hands for 6 years, following contact with weeds, and 2 years later lesions had become generalized. There was winter exacerbation, summer remission and a history of relief of itching after sun exposure. He was not an atopic and denied ingestion of known photosensitizers.

Hyperpigmentation and lichenification were present over exposed areas of the face, neck, trunk and limbs. The upper eyelids, periorbital areas, nose, nasolabial folds and submental areas were spared. There was minimal involvement of the retroauricular areas. Lichenification was maximal over the forehead, producing furrowing, and over the dorsa of the hands, feet and forearms.

Patch testing with *Parthenium* produced a vesicular reaction. Minimal erythema dose (MED) determination for UVA from 2-16 J/cm² and UVB from 30-100 mJ/cm² was negative.

Discussion

Parthenium hysterophorus (wild feverfew) has been reported as causing both allergic and photocontact derma-

titis (1). Airborne contact dermatitis from Compositae can simulate photodermatitis (2). In our case, there was maximal involvement of sun-exposed areas, simulating chronic actinic dermatitis. However photosensitivity was absent, with summer remission. This was consistent with our inability to demonstrate an MED to UVA and UVB.

In 4 of our earlier cases of *Parthenium* dermatitis with photosensitivity, there was significant lowering of the MED to UVB, ranging from 8-40 mJ/cm². An MED to UVA was seen in 1 patient of 8 J/cm² (unpublished observation).

Although the possibility of hardening following prolonged exposure to sunlight cannot be ruled out, this report highlights the absence of photosensitivity in *Parthenium* dermatitis clinically resembling chronic actinic dermatitis.

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