

seems very important to examine carefully and regularly nevocytic nevi in women with histiocytofibromas. They bear a statistically high risk of developing a malignant melanoma. In all our patients, the histiocytofibromas appeared before the melanomas. To our knowledge, this frequent association has never been reported. However, further studies are needed in order to confirm our results. The pathogenesis of this association is unclear (immunological disturbance?) and it remains to be explained why the association may be fortuitous in males, but surely more than coincidental in females.

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Allergy to Human Seminal Plasma: A Presentation of Six Cases

Susanne Kroon

*Department of Dermatology, Gentofte Hospital,
Hellerup, Denmark*

Received February 29, 1980

Abstract. Six women had symptoms of immediate type allergic reactions such as localized oedema, urticaria and pruritus elicited at, or soon after intercourse. All had positive skin prick tests with dilutions of human seminal plasma. The symptoms failed to appear when the women's partners used a condom at intercourse. None of the women had IgE antibodies in serum against human seminal plasma when tested with the radioallergosorbent test. This type of allergic reaction is easily overlooked.

Key words: Human seminal plasma; Urticaria; Prurigo

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A description of an allergic reaction to human seminal plasma (HSP) was first published in 1967 (4), and subsequent reports have added 12 further cases (2, 3, 5, 6, 7, 8, 9, 10, 11). All patients had a wide range of symptoms typical of an immediate type of allergic reaction. Severe cases had anaphylaxis with loss of consciousness within minutes after intercourse. Others had localized oedema, generalized urticaria and/or itching following intercourse. Three cases within one family developed local symptoms only, such as vaginal itching and swelling (2). Most patients had an atopic family history. Because of the severity of the symptoms the association of symptoms with intercourse has been obvious.

I want here to report on 6 patients with less dramatic symptoms, in whom the diagnosis was missed prior to admission.

CASE REPORTS

Case 1

A 24-year-old unmarried woman, without children. No atopic family history.

Her problem was: "something with men". When she lived with a man she experienced universal pruritus and intermittent periorbital oedema. During the last month she had had vaginal itching and burning. Because of the itching she had lived with 5 different men for the last 15 months. Some were rejected because of the itching, some left her because her intense scratching made them itch. On close questioning it appeared that symptoms would only appear after intercourse and persisted for a couple of days.

For contraceptive purposes she used birth control pills and later on an intra-uterine device but, without alleviation of the symptoms. After use of a condom, however, no symptoms had occurred for 6 months. She then started to use contraceptive pills again, after which she experienced only mild pruritus following intercourse. At the latest control she was free from symptoms after intercourse.

Case 2

A 32-year-old married woman with 2 children. No atopic family history.

From her 12th to her 20th year she had minor attacks of urticaria. Then symptomless until January 1978. Then again urticaria with daily attacks localized on the legs and arms. There had been swelling of the lips and periorbital oedema. Symptoms started only during intercourse and in the bathroom soon thereafter. For contraceptive purposes a condom was used but not until shortly before ejaculation. After consistent use of a condom at intercourse, no symptoms reported for 5 months. After use of condom was abandoned, one severe attack with periorbital oedema, and several minor attacks.

Seen latest time 7 months later, now without symptoms following intercourse.

Table 1. Women with allergy to human seminal plasma

	Cases					
	1	2	3	4	5	6
Age	24	32	57	34	22	32
Number of children	0	2	2	0	0	0
Personal or family history of atopy	-	+	-	-	+	+
Duration of symptoms before admission (months)	16	8	18	8	6	18
Lag between intercourse and symptoms (hours)	2-3	1/4	1/2	1/2	1/4	1-2
Symptoms with different males (numbers)	5	1	1	1	1	4
Symptom-free after use of condom	Yes	Yes	Yes	Yes	Yes	Yes
Prick test with human seminal plasma	Pos.	Pos.	Pos.	Pos.	Pos.	Pos.

Case 3

A 57-year-old married woman with 2 children. No personal or family history of atopy.

Until her menopause about 2 years before she was seen, her husband used a condom during intercourse. For 18 months, attacks of urticaria on legs and arms. She had been symptom-free only during a 3-week spell of illness when the couple abstained from intercourse. At renewed intercourse, with use of a condom, the patient had no symptoms of allergy, when last seen 4 months later.

METHODS

1. Skin tests

Prick tests were performed on the volar aspect of the forearms. In the first experiments reactions to fresh, whole semen from the respective partner were compared with centrifuged ejaculates, where seminal plasma was separated from spermatozoa. The semen samples were tested on the right arm, the seminal plasmas on the left. The fresh whole semen samples and the seminal plasmas were diluted 1:1, 1:10, 1:100 and 1:200 with sterile phosphate-buffered saline (PBS) (pH 7.4). As a control, PBS (pH 7.4) was used. The reactions in the prick

tests were compared with a histamine prick reaction, using a histamine solution (1 mg/ml) as reference. Twenty consecutive men and women admitted for some allergic disorder served as controls.

In the later experiments pooled semen from 7 healthy donors was centrifuged at 3 000 rpm for 30 min at 4°C, and the supernatant (HSP) was used in the same dilutions as in the first experiments. The serum and semen from the donors were AuAg negative.

2. Specific IgE determinations

RAST (14) was performed according to Ceska et al. (1). HSP was coupled undiluted as well as in the concentrations 10^{-1} , 10^{-2} and 10^{-3} to the activated paper discs. Fifty microliters of each patient-serum were added to the allergent sorbent. A mixture of sera from 1 000 normal individuals was used as a control. Serum from a highly timothy-allergic patient (H. D.) diluted 1+15 (v/v) with incubation buffer was used as a 100-sorbent unit reference (13). Serum samples were taken from 4 of 6 tested patients both at first admission and at second admission one year later.

Table 11. Follow-up (3-14 months later) of women with allergy to human seminal plasma

	Cases				
	1	2	3	4	5
Used condom for (months)	7	6	3	12	12
Stopped use of condom	Yes	Yes	No	Yes	No
Symptoms 2-6 months later	No	No	-	No	-
Prick test with human seminal plasma	Neg.	Neg.	Pos.	Neg.	Neg.

RESULTS

The reactions to whole semen and HSP in the same dilutions were identical.

At first admission all 6 patients had a positive prick test reaction after 10 min with the diluted 1:10 and undiluted whole semen and human seminal plasma. There was an equal or greater reaction with the undiluted whole semen and undiluted HSP, as compared with the 1:10 dilutions. Only 1 (case 4) had a positive reaction to the 1:100 dilution. All patients had negative reactions to the 1:200 dilutions. None of the patients had a positive reaction to PBS alone. The size of the reaction to whole semen and HSP was equal to or three-fourths of the reaction to histamine.

At the follow-up, 4 patients (1, 2, 4, 5) had negative prick tests to HSP (Table II). All had become symptom-free during the period of observation. One (case 3) had an unchanged prick test 3 months after first admission and patient 6 had been tested once only.

The control group gave negative results when tested with whole semen and HSP in 1:10 dilutions.

Specific IgE determination

No specific binding of IgE was found under the experimental conditions applied. All the patients were in RAST-class zero.

DISCUSSION

The original observation by Halpern et al. (4) established the existence of an immediate-type allergy to human seminal plasma. This has been confirmed by other reports (2, 3, 5, 6, 7, 8, 9, 10, 11).

The patients reported here differ from those seen elsewhere by having less severe symptoms. Consequently, the relation to intercourse was suspected by only 1 of 6 patients. Three of 6 had an atopic history. The onset of urticaria and itching was insidious and the symptoms could last up to 1 week. This cause of prurigo and urticaria may not be rare, as we collected the 6 cases within 1 year. The diagnosis is not too difficult if the cause is suspected and later supported by a positive prick test reaction to HSP and/or disappearance of symptoms after use of a condom.

All women had had gynecological operations or **intra-uterine devices fitted**. Two patients had

symptoms after intercourse with different males, which proves the reactions to be independent of the individual. The method of contraception seemed immaterial. Whether an allergy like the one observed here could cause sterility is a matter of speculation. Two of the women had children before the onset of symptoms.

Four of the patients were re-examined after 6 to 12 months' use of a condom. Avoidance of exposure to the allergen stopped all symptoms, but eventual re-exposure was either tolerated or caused minimal symptoms.

The exact nature of the seminal plasma allergen is not known. The allergen responsible for the reaction is common to all men. It is not present on spermatozoa or in serum (4, 5, 8, 9, 10). Seminal plasma from vasectomized men has the same antigenic potency as seminal plasma from non-vasectomized men (5). Extracts from prostatic tissue have, in one report, reproduced the skin reaction (6). Fractionation of pooled seminal plasma on Sephadex G-200 has shown the allergen to have a molecular weight of between 14 000 and 30 000 daltons (4, 5, 7, 9, 11). It is protein in nature, with an isoelectric point between 8.4 and 8.6 (11).

In the present series RAST tests with HSP were negative throughout, but others have presented indirect evidence of an IgE-mediated reaction, such as a positive Prausnitz-Küstner test (4, 10, 11, 12). Mikkelsen et al. (7) found a negative RAST test for their own and Halpern's patient as well.

The negative RAST test could be a result of a low concentration of antibodies in serum, or the reaction may be mediated via IgG subgroups (e.g. IgG₄).

Efforts to isolate and identify the responsible antigen(s) are under progress.

ACKNOWLEDGEMENT

The author wishes to thank Henning Löwenstein, The Protein Laboratory, University of Copenhagen, for his assistance with the RAST test.

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Tinea Versicolor and Body Lotions

Jytte Roed-Petersen

Department of Dermatology, Gentofte Hospital,
DK-2900 Hellerup, Denmark

Received March 10, 1980

Abstract. A woman complained she had caught her 'white spots' from an American sun lotion. The daughter also had them. The mother's spots showed malassezia furfur. The daughter, by a curious coincidence, had developed vitiligo at the same time. As a comfort it was agreed that the sun lotion should be examined for fungal contamination.

Scrapings from lesions of patients with tinea versicolor show a typical appearance of malassezia furfur. Roberts (9) cultured specimens from 27 patients and isolated *Pitysporum orbiculare* in 25.

Pitysporum orbiculare is a yeast-like organism requiring lipids for growth. Morphologically it is distinct from *Pitysporum ovale* (2, 7). They are both found as members of the normal skin flora, *Pitysporum ovale* especially on the scalp, *Pitysporum orbiculare* especially on the trunk (8).

Malassezia furfur and *Pitysporum orbiculare* are considered to be identical organisms. The hyphal elements of malassezia furfur are the result of a yeast—mycelial transformation. *Pitysporum orbiculare* thus becomes pathogenic when it changes from a yeast to a filamentous habitat (1, 3, 6).

Tinea versicolor is extremely common in many tropical and subtropical areas (5, 9) and has been reported in over 40% among adults and adolescents in Western Samoa (4). Marples (5) suggests that the habit of greasing the skin with coconut oil might be responsible for this very high prevalence.

Roberts (9) discusses the factors influencing the transition of *Pitysporum orbiculare* from yeast to filamentous form. Host susceptibility is considered important, but possibly some strains of *Pitysporum orbiculare* tend to form filaments in vivo, thus becoming capable of causing tinea versicolor.

The story told by our patient raised the question of whether tinea versicolor is promoted by body lotions and creams used as sun screens or emollients.

MATERIALS AND METHODS

All cultures were made from scrapings from patients with clinical and microscopically verified tinea versicolor. Cultures were performed on Sabouraud agar (Difco) with an added layer of the sun lotion as such and with each of the ingredients of the lotion provided by the manufacturer.

RESULTS

Cultures from the sun lotion revealed no growth of fungi. All other results are given in Table I.

COMMENTS

In spite of the paraben added for preservation (0.3%) the sun lotion helped the growth of *Pitysporum orbiculare*. This finding together with Marples' observations from Western Samoa supported the patient's assumption that a sun lotion could cause tinea versicolor. Information gained by questioning of further patients with curious features of tinea versicolor seems to support the conjecture. A