

Familial allergic seminal vulvovaginitis

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Vulvovaginal reactions to seminal fluid occurred in all four women in a family. The reactions consisted of stinging, burning, and pain in the vagina, starting during coitus or immediately after ejaculation, and persisting for 2 to 72 hours. The vagina and vulva were red and swollen, with urticaria on the labia. Although skin tests showed a positive reaction in two of three women tested, no sperm agglutination antibody was detected. Benadryl was effective in preventing the development of vulvovaginal reactions completely in one woman and partially in two others.

SEVERE FORMS of allergic reactions to semen have been reported on only two occasions. Generalized urticaria involving the skin, tongue, pharynx, and eyelids, together with asthmatic attack, occurred in a 29-year-old woman immediately following her first intercourse. The vaginal mucosa was congested. Pelvic pain was noted and uterine contractions were experienced. These reactions reached the peak within 15 to 30 minutes following ejaculation and persisted for about 24 hours.¹ A less severe form of allergy to semen was described in another woman who developed perivaginal and periorbital edema and a choking sensation in the throat several hours following coitus. These symptoms lasted for several days.² The present communication describes a still milder form of allergy to semen, occurring in all women in a family. Since these reactions are limited primarily to the perineal area, the term "familial allergic seminal vulvovaginitis" is proposed. Preventive measures are also described.

Methods

Preparation of skin test antigen. Fresh semen was collected by masturbation into a sterile container. The specimen was placed at room temperature for 30 minutes, allowing liquefaction of the seminal fluid to take place. The sperm was removed by centrifugation at 25,000 r.p.m. in a refrigerated centrifuge. Decimal dilutions of the seminal plasma were made in saline. Merthiolate 1:10,000 was added as preservative.

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Skin test. Both scratch and prick tests were performed with 10-fold dilutions of seminal plasma. Saline was used as control. Positive reaction consisted of wheal-and-flare on an erythematous base, which appeared within 3 minutes of application. Six young women were tested. All gave a negative response.

Serological tests. Mixtures of patient's serum dilutions and fresh sperm suspension were observed microscopically for motility and clumping following incubation at 37° C. for 5, 10, 20, 30, 60, 90, and 120 minutes. The serums were diluted twofold serially prior to use.

Clinical features

There were four women in the family. All had experienced discomfort from contact with seminal fluid, beginning from their first sexual intercourse. The mother, who had not been sexually active for the past several years, recalled that she could not tolerate coitus more frequently than once every third day because of local reactions following each ejaculation. She had three daughters. The oldest was married and had two children. All had a history of other allergies (hay fever, food allergies, etc.).

The first patient (age 24) was referred to the Clinics of the New England Medical Center Hospital because of recurrent genital herpes. She also gave a history of stinging, burning, and pain in the vagina during and following each coitus. The vagina and vulva were red and swollen, with urticarial lesions on the vulva. On several occasions, she noted that urticarial lesions developed on the chest or other parts of her skin when in direct contact with the semen. Immediately following ejaculation, she had to rush to the shower to wash off the ejaculate. Invariably, she noted a thin discharge from the vagina the next morning. During a period of

several months, when a condom was used, she was free from any reactions from coitus. Skin testing with seminal plasma was positive at a concentration of 10^{-3} . Her serum neither immobilized nor caused agglutination of fresh human sperm. Benadryl, 25 mg. orally, 30 minutes prior to coitus, was effective in preventing the development of these reactions. Local application of hydrocortisone reduced the severity of local reactions, but added discomfort by creating dryness of the vaginal mucosa. She had been on Benadryl prophylaxis for a period of 3 months during which she was free of discomfort following coitus except on occasions when the drug was not available. Following this, however, she stopped Benadryl entirely. To her surprise, vulvovaginal reactions to semen did not return.

The second patient (age 26) was requested to visit the New England Medical Center Hospital because of discomfort after each coitus. Stinging, burning, and pain were experienced immediately after ejaculation. She noted that her vagina and vulva were red and swollen, with urticaria on the labia. On one occasion, she suddenly felt "helpless with her body and lower extremities" during coitus, which was interrupted immediately. She lay motionless for about half an hour and had to be carried to bed by others. She felt dizzy, but never lost consciousness. Skin testing showed a positive reaction to a 10^{-3} dilution of the seminal plasma. Serological tests were negative for sperm immobilization and agglutination. Benadryl and Chlor-Trimeton prophylaxis was partially effective in relieving vulvovaginal reactions. Local application of hydrocortisone also gave some relief, but its application created additional discomfort from lack of vaginal secretion during intercourse.

Patients 3 and 4 were not seen because both lived in other states. A list of questions was sent to each individual. Table 1 summarizes all pertinent information. A skin test kit was sent to John Kent, M.D., of Buffalo, New York, for Patient 4 (age 68).

Patients 1 and 2 had been taking birth-control pills since the beginning of their sexual activity.

Comment

Allergy to human semen is a rare condition. Only two cases have been recorded in the literature.^{1, 2} However, the actual incidence is not known because most physicians and the public are not aware of its existence. Patient 1 (age 24) had repeatedly told her gynecologist in a university hospital about her symptoms which were recorded in the medical record as "deep dyspareunia," but no further investigation was attempted. Her mother had experienced difficulties

Table 1. Symptoms and signs of allergic seminal vulvovaginitis

	Age (yr.)			
	24	26	33	68
Onset of symptoms				
During intercourse	+		+	
Immediately after ejaculation		+		+
Pain in vagina	+	+	-	-
Burning and stinging in vagina	+	+	+	+
Pelvic pain	+	-	-	-
Red and swollen vagina and vulva	+	+	+	+
Urticaria on vulva	+	+	-	-
Immediate shower	+	-	+	-
Discharge in the next morning	+	-	+	-
Duration of discomfort	24°	24°	Until shower	72°
Skin test	+	+	ND	-
Sperm agglutination antibody	-*	-	ND	ND
Prevention by antihistamine	+	±*	±	ND
Prevention by condom	+	ND*	ND	ND
Other allergies	+	+	+	+

*+, Yes or positive; -, no or negative; ±, partial; and ND, not done.

related to coitus all through her life, but considered it "a normal phenomenon."

The onset of stinging, burning, or pain may begin during coitus or immediately after ejaculation. It has been found that the prostatic or seminal vesicular fluids are as potent as regular seminal fluid in eliciting skin reactivity, suggesting that the prostatic or seminal fluid is responsible for the allergic reactions.² When the symptoms began during coitus, their partners were often told to hurry up because of the discomfort. Immediately after ejaculation, they rushed to the shower to wash off the seminal deposits.

The duration of vulvovaginal reactions to seminal fluid varied from 2 to 72 hours. Within these periods, coitus was not without pain from the beginning of penile penetration. Besides local symptoms, one patient (age 26) experienced a severe systemic reaction during coitus. Unfortunately, it was not possible to determine the type of reaction. It is of interest that the same man had had repeated coitus with her before and after the episode. The only reactions noted were those limited to the genital tract.

Skin testing with seminal plasma was positive at a concentration of 10^{-3} , which is weaker than those with systemic manifestations.^{1, 2} The skin test was negative in the oldest patient, who had not had coitus for several years due to her husband's illness. It is possible that the

negative reaction could be related to the prolonged abstinence.

No sperm agglutination antibody was detected. These patients have no problems in fertility. Other reports also indicated the same.²

Response to antihistamine prophylaxis is a gratifying experience. Benadryl, 25 mg. given 30 minutes prior to coitus, was effective to prevent all the discomfort

associated with seminal deposition in one woman. It was partially effective in others. The one who gave the best response stopped the drug entirely after 3 months' trial. Vulvovaginal reactions to semen did not reappear. Whether it represents a desensitization phenomenon is unclear. Desensitization was not successful in the reported cases.^{1, 2}

REFERENCES

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