

## Human Seminal Plasma Hypersensitivity and Successful Conception

### To the Editor:

A 26-year-old heterosexual woman was referred after developing a burning sensation within the vagina and on the vulva within a few minutes of her partner ejaculating on intercourse. The acute soreness lasted for an hour and made micturition uncomfortable. Her symptoms would gradually ease overnight, although the vagina remained uncomfortable the next morning. She denied any vaginal discharge, urticaria on the external skin, or any systemic symptoms. She also denied any symptoms in the absence of unprotected intercourse. She reported the same symptoms with 2 different partners, a few years apart. Antihistamines were unhelpful, but use of a condom during intercourse prevented the symptoms, raising the possibility of semen allergy. There was no personal history of atopy. Skin prick testing was performed using a drop of fresh, whole seminal fluid obtained from the patient's sexual partner and compared with a positive control (histamine 10 mg/mL) and a negative control (saline solution). A small prick was made to the skin of the volar forearm through each drop of fluid using separate sterile shouldered lancets (Diagenics Ltd, United Kingdom). Reactions were read at 15 minutes. The skin under the drop of semen became red and itchy with a raised wheal measuring 4 mm in diameter. A palpable 6-mm wheal was seen with the positive histamine control, and a nonpalpable erythematous flare 1.5 mm in diameter was observed with the negative control. A diagnosis of semen allergy was therefore made.

The couple was advised to use condoms during intercourse. A year later, the woman became pregnant after a second attempt using in vitro fertilization and subsequently gave birth to a healthy baby boy.

Human seminal plasma hypersensitivity is a rare but probably underestimated phenomenon.<sup>1</sup> The major antigen is believed to be a prostate-specific antigen that triggers IgE-

mediated hypersensitivity reaction (type 1). Its presentation varies from local vulvovaginitis to systemic symptoms such as dyspnea, rhinoconjunctival symptoms, angioedema, generalized urticaria, exacerbation of atopic eczema, or anaphylactic shock. Patients are often young (20–30 years old) with a background of atopy.<sup>2</sup> Human seminal plasma hypersensitivity usually occurs with more than 1 sexual partner, although cases with specific partner have been described.<sup>3</sup> Sterility is not associated with human seminal plasma hypersensitivity. It can be difficult to differentiate between hypersensitivity to seminal plasma and other allergies (allergy to latex, lubricants, and spermicides). However, the ultimate criterion to establish the definitive diagnosis is the complete prevention of symptoms with the use of a condom. Treatment options include contact avoidance with the use of condoms, but this is unsuitable for couples who wish to conceive. Antihistamines have been variably successful. Subcutaneous desensitization, which requires fractionation of whole seminal plasma to remove large molecular weight known to interfere with successful desensitization, can be used, but the treatment is very time consuming, costly, and not widely available.<sup>4</sup> Although intravaginal desensitization may be of benefit, the process is not always successful, and serious anaphylactic reactions have been reported with intrauterine insemination.<sup>4,5</sup> Assisted conception such as in vitro intracytoplasmic sperm injection fertilization can be used to obtain pregnancy without any contact with the sperm of their partners.

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