Reactions to Human Semen: An Intimate Allergy

For many, trying to conceive should be a straightforward and enjoyable experience. However, there are some individuals who dread the thoughts of this activity. These women are a relatively rare group of people who are allergic to their partner's semen.

Semen allergy is a type-1 allergic (or atopic) reaction, the same type of reaction that one gets from pollen (hay fever or allergic rhinitis) or cat dander. Typical of an atopic reaction is the speed of onset after exposure of the allergen and semen allergy is no exception. The symptoms of semen allergies can be local and/or systemic[1] and there have been some cases of anaphylaxis[2].

Local symptoms include itching, redness and swelling in the vagina and vulva area. Often women complain of severe burning and stinging pain in the urethra and vulvovaginal region. These symptoms occur almost immediately after contact with semen and can last over 24 hours, causing considerable discomfort and pain.

Systemic symptoms can manifest as widely generalised urticaria (hives), wheezing, rhinoconjunctivitis, and exacerbation of other atopic conditions such as asthma and eczema[1].

How common is it?

The true prevalence of this condition is unknown. However, with less than 100 cases published worldwide it is often reported as a rare phenomenon. We recently presented five confirmed cases of semen allergy patients in the Greater Manchester region alone (confirmed between 2008 and 2011)[3]. Therefore, it is likely that this condition is more common than previously reported. Moreover, all the cases we presented were initially misdiagnosed; a common feature during the clinical examination of these patients. It should be emphasised that all other potential causes for the local and systemic symptoms are excluded, as many conditions such as sexually transmitted infections (STIs), *Candida* infections and chronic vulvovaginitis can mimic the symptoms of semen allergies. One feature shared with all these cases was the abstinence of symptoms with condom use – an indicative, initial diagnostic tool!

Diagnosis is usually carried out through a detailed clinical history, measurements of serum semen specific - IgE levels and the allergy skin prick test[1] (Figure 1).

There are recent reports suggesting that men can suffer from semen allergies also displaying local allergic symptoms and transient flu-like illness. The condition, referred to as Postorgasmic Illness Syndrome (POIS), is believed to be caused by an immediate allergic reaction to seminal plasma proteins[4].

What causes it?

Investigators have reported that a glycoprotein (~34kD) of prostate origin may be the allergen responsible[1]. However, given the myriad of proteins and other biomolecules in semen there may be more than one allergen responsible. It has been suggested that many of the cases of semen allergies may be due to a cross-reaction to other allergens such as dog epithelial[5]. Furthermore, there has been a report of a woman with a Brazil nut allergy who developed urticaria and dyspnoea after exposure to her boyfriend's semen[6]. The transmission of some food allergens via semen is something that should be considered during clinical examinations.

Does it affect fecundity?

Semen allergies impede an individual's fecundity more by affecting the couple's sexual relationship, and by the unwillingness of the women to practice unprotected coitus for fear of the discomfort and pain she will experience after contact with semen. However, having this condition does not affect fertility directly [7] , and one of the cases confirmed in our clinic had two successful births (one through IVF and another one through spontaneous conception). What this case implies is that having semen allergies does not encumber fertilisation and embryo development through artificial reproductive technology (ART) or through natural conception. This is an important realisation, as some women with semen allergies suffer so greatly from the symptoms that they require ART in order to conceive.

How is it treated?

The best treatment of an atopic allergy is avoidance of the allergen. However, for couples trying to conceive this may not be an option with semen allergies. Therefore, a number of treatment options have shown some success. The use of prophylactic antihistamines 30-60 minutes before coitus is often recommended. Also, the use of anti-inflammatory drugs can be used in addition to antihistamines or on their own. These treatments may alleviate the acute localised symptoms. The most effective treatment approach has been immunotherapy and/or desensitisation using various serial dilutions of seminal plasma[1, 8].

Figure 1. Example of Skin Prick Test

The allergen to be tested is placed on the volar aspect of the forearm and etched with a sterile lance. A positive reaction will yield a weal the same size or larger than a positive control (histamine). (Image from www.lohguanlye.com).

Conclusion

Semen allergy is a more common condition than previously reported (5 confirmed cases in Greater Manchester alone). The exact allergen has yet to be identified. However, there is some indication that this allergen is a glycoprotein(s) excreted from the prostate gland. Identification of the allergen(s) will enable more through diagnostics and treatment options. This condition does not affect the fertility of the women affected and there have been pregnancies both via ART and natural conception in women with semen allergies.

For clinicians presented with women complaining of the symptoms of semen allergies, a careful clinical history, taking in to account the abstinence of symptoms with condom use, would help recognise this condition early thus directing these women towards diagnostic conformation and proper treatment.

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