SEXUAL MEDICINE CASE REPORT

Intralymphatic Immunotherapy With Autologous Semen in a Korean Man With Post-Orgasmic Illness Syndrome

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ABSTRACT

Post-orgasmic illness syndrome (POIS) is a very rare disease characterized by local allergic symptoms and transient flu-like illness that nearly always occur after masturbation, coitus, or spontaneous ejaculation and last for 2 to 7 days. In a previous case report, 2 patients with POIS received hyposensitization therapy composed of multiple subcutaneous injections of autologous semen that resulted in a gradual decrease of symptoms. However, this procedure requires patients to endure pain and discomfort during frequent subcutaneous injections and preceding masturbations to obtain the autologous semen used for therapy. Recent studies have suggested that intralymphatic immunotherapy is a promising new method of allergen-specific immunotherapy against allergic diseases, showing a faster onset and longer duration of therapeutic effects after only several intralymphatic injections. We report on a case of a Korean man with POIS who received intralymphatic immunotherapy that alleviated POIS-related symptoms and in whom the existence of semen-specific immunoglobulin E was confirmed using immunoglobulin E immunoblotting and enzyme-linked immunosorbent assay. **Kim TB, Shim YS, Lee, SM, et al. Intralymphatic Immunotherapy With Autologous Semen in a Korean Man With Post-Orgasmic Illness Syndrome. Sex Med 2018;X:XX–XX.**

Key Words: Post-Orgasmic illness; Injection; Intralymphatic; Desensitization; Immunologic; Semen

INTRODUCTION

Post-orgasmic illness syndrome (POIS) is a very rare disease characterized by local allergic symptoms and a transient flu-like illness that nearly always occur after ejaculation and last for 2 to 7 days.[1,2]

Waldinger and Schweitzer[1] 1st reported on 2 cases of POIS in 2002; that study summarized the characteristics of 45 POIS cases and subcutaneous immunotherapy (SCIT) with autologous semen was performed for 2 patients. This treatment led to a gradual decrease of complaints, resulting in 90% and 60% amelioration of POIS complaints at 15 and 31 months, respectively.[2,3] However, this procedure requires patients to endure pain and discomfort during frequent subcutaneous injections and preceding masturbations to obtain the autologous semen used for therapy.

Recently, intralymphatic immunotherapy (ILIT), a new method of allergen-specific immunotherapy (AIT) that requires only 3 to 6 injections into the inguinal lymph nodes at 4-week intervals, yielded symptom relief that occurred more rapidly than that associated with SCIT and lasted up to 3 years in patients with allergic rhinitis.[4–7]

We report on a case of a Korean man with POIS who received ILIT that alleviated his POIS-related symptoms and in whom the existence of semen-specific immunoglobulin (Ig) E was confirmed using IgE immunoblotting and enzyme-linked immunosorbent assay (ELISA).

CASE REPORT

A 30-year-old Korean man visited the university hospital complaining of flu-like symptoms that occurred after masturbation. He 1st masturbated 9 years previously and had various symptoms, including a sore throat, sputum, malaise, myalgia, arthralgia, rhinorrhea, sneezing, weakness, fatigue, fever, feverishness, chill, anorexia, residual urine sensation, voiding difficulty, weak urinary stream, postvoiding dribbling, depression,

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anxiety, and irritability, that nearly always occurred 3 to 4 hours after ejaculation and lasted for 48 hours with spontaneous regression. He was diagnosed with POIS, because his symptoms were consistent with the 5 diagnostic criteria.[1,2] He also had food allergies and complained of lip edema after ingestion of shrimp. Serum IgE level, which was measured using the ImmunoCAP system (ThermoFisher Scientific, Uppsala, Sweden), was 403 U/mL and levels of crab- and shrimp-specific IgE were 6.58 U/mL (class 3) and 20.0 U/mL (class 4), respectively. Prostate-specific antigen levels were normal (0.52 ng/mL). Serum total IgA, IgM, IgG, IgG1, IgG2, and IgG4 levels were within normal limits, whereas IgG3 was somewhat decreased (eTable 1). For sex hormones, estradiol was increased, prolactin and testosterone were decreased, and luteinizing hormone and follicle-stimulating hormone were within normal limits.

We proposed abstinence, scheduled masturbation during holidays, and prescription drugs, including non-steroidal anti-inflammatory, antihistamine, and mucolytic drugs, to relieve POIS-related symptoms. We also suggested SCIT or ILIT with autologous semen as a causative treatment against POIS and provided all references on POIS and ILIT with sufficient explanation and discussion. The patient eventually decided to undergo ILIT with autologous semen and provided informed consent.

We performed ILIT and evaluated POIS status before and 8 and 15 months after the 1st injection of ILIT (eFigure 1). Before ILIT, the patient was asked to score the severity of each POIS-related symptom using a visual analog scale ranging from 0 to 100 mm and to describe the duration of each. The patient also was asked to complete the Male Sexual Health Questionnaire (MSHQ) and was evaluated using the International Index of Erectile Function (IIEF).[8,9] The patient's semen and serum were obtained, and a skin prick test (SPT) and intradermal test with autologous semen were performed before and 8 months after the 1st ILIT injection.

Using ultrasound guidance and a 25-gauge needle, autologous semen was aseptically injected into an inguinal lymph node at a dilution of 1:40,000.[3] Then, the concentration was increased by 3-fold, as in a previous study of ILIT.[4,6] The patient complained of transient mild pain and a warm and abnormal sensation at the local injection site after each injection of ILIT. After the 3rd and 4th injections, the patient also complained of flu-like symptoms, including fatigue, chill, a burning sensation in the eyes, sore throat, and paratonsillar hypertrophy; these symptoms persisted for 3 to 4 weeks with an intensity that remained at 50% to 60% 5 days after the 3rd injection and at 60% to 70% 5 days after 4th injection. After sufficient discussion, the patient requested that he receive the 5th injection with the full concentration of autologous semen and stated that he did not want further injections thereafter. Based on this request, we performed the 5th injection with the full concentration of autologous semen as the last dose.

At 8 and 15 months after the 1st injection of ILIT, all POIS-related symptoms except sore throat and urinary symptoms were alleviated and their durations were shortened (Table 1). In particular, sneezing completely subsided. Moreover, the patient's responses to several questions on the MSHQ and IIEF indicated alleviation of discomfort after ejaculation and improvement in sexual function (eTable 2). His answers to other questions on the MSHQ or IIEF did not change after ILIT. Time from erection to ejaculation also remained unchanged at 5 minutes. According to the semen analysis, the amount of semen and sperm with normal motility and morphology increased 8 months after ILIT (eTable 3). Sodium dodecylsulfate polyacrylamide gel electrophoresis (SDS-PAGE) analysis of seminal fluid showed multiple protein bands with an apparent molecular mass ranging from 10 to 170 kD, as previously described[10] (eFigure 2). The IgE immunoblotting of autologous seminal fluid incubated with serum from the patient and 1 healthy control showed IgE binding bands at 14, 16, 34, and 55 kD (eFigure 3). The IgE binding band at 55 kD was particularly prominent before ILIT, but it was fainter when seminal fluid was incubated with serum obtained from the patient 8 months after ILIT. In addition, ELISA analysis showed that the level of semen-specific IgE was increased in the patient's serum before ILIT compared with the healthy control, but it had deceased to levels similar to those of the healthy control 8 months after ILIT (eFigure 4). Skin reactivity to the SPT and intradermal test with serially diluted autologous semen increased 8 months after ILIT (eTable 4).

The study was approved by our institutional review board.

DISCUSSION

Waldinger et al[2,3] hypothesized that allergies could play a role in POIS and examined the allergic history and measured serum levels of total IgE in all patients and performed hyposensitization therapy in 2 patients. Their hypothesis seems reasonable because most of their subjects (87%) developed POIS-related symptoms within 30 minutes of ejaculation, which suggests an immediate hypersensitive allergic reaction. In addition, some of their subjects (22%–44%) had ocular and nasal symptoms similar to those of allergic rhinoconjunctivitis. Interestingly, POIS-related symptoms were alleviated after SCIT in 2 subjects.[2,3] However, because most subjects with POIS frequently had flu-like symptoms, such as extreme fatigue, exhaustion, concentration difficulties, irritation, feverishness, extreme warmth, and perspiration, which are not typical allergic symptoms, the pathogenesis of POIS cannot be entirely explained by allergies. In addition, some but not all of their subjects had existing allergic dieases.[2] Furthermore, although SPT with autologous semen had a positive effect in most of their subjects who underwent SPT,[2] Jiang et al[10] suggested that even healthy controls showed positive SPT results with autologous semen, and no semen-specific IgE was detected in the serum of patients with POIS through SDS-PAGE, Western blotting, or ELISA. It is possible that not all patients with POIS have allergies and that multiple causes exist for this syndrome.

In contrast to the case report by Jiang et al,[10] we detected the existence of serum semen-specific IgE in our patient through SDS-PAGE, Western blotting, and ELISA. Moreover, our