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Sexual intercourse as a trigger of inducible urticaria



Aerobic exercises can precipitate inducible urticarias. Cholinergic urticaria and exercise-induced anaphylaxis are good examples of these triggers.^{1,2} The same can happen in patients with delayed pressure urticaria when areas of the body are compressed during exercises.³ To our knowledge, sexual intercourse has not been documented for triggering inducible urticarias. We present 2 cases of inducible urticaria precipitated by sexual intercourse: exercise-induced anaphylaxis and delayed pressure urticaria. These 2 case reports reinforce that we should keep a high index of suspicion for urticaria that could be triggered by exertion or pressure, both of which can occur secondary to sexual intercourse.

A 22-year-old white woman reporting that for the last 4 years she developed exercise-induced diffuse pruritic rashes after the practice of aerobic exercises. It was food and drug independent. For the last month, minutes after vigorous sexual intercourse, she started noticing, for the first time, more intense pruritic rashes and periocular angioedema without laryngeal edema or fainting sensation (Fig 1). With less intense sexual intercourse, she was asymptomatic. Hot showers, heavy clothes, stress, fever, and spicy foods did not precipitate symptoms. Her vital signs were always normal. The treatment for this patient consisted of avoiding vigorous sexual intercourse, and this resolved her urticaria.

She also had a long-standing history of perennial allergic rhinoconjunctivitis, with documented allergy to house dust mites, *Dermatophagoides farinae*, and *Dermatophagoides pteronyssinus*, which was well controlled with environmental care and regular use of oral fexofenadine 180 mg twice daily and fluticasone furoate nasal sprays. An epinephrine auto-injector was prescribed but never used.

A 53-year-old white man reporting chronic spontaneous urticaria associated with severe delayed pressure urticaria for the last 17 years. Diffuse, giant, burning, painful urticaria occurred 4 to 6 hours after pressure from shoes, wearing tight clothes, tight pants, underwear, belts, watches, rings, and after sexual intercourse. He therefore avoided having sex with his wife and consequently became very depressed. His vital signs were always normal. On testing, immediate dermatographism was negative, but delayed dermatographism 6 hours later was definitely positive. Second-generation antihistamines (fexofenadine, cetirizine, and bilastine), ranitidine, montelukast, and dapsone up to 200 mg daily were all unsuccessful. The delayed pressure urticaria was relieved with topical steroids and controlled with short courses of oral prednisolone 40 mg daily. He was prescribed an epinephrine auto-injector, which was never used. Finally, he was treated with omalizumab 300 mg subcutaneously every 4 weeks and became immediately asymptomatic the next day. His sex life was restored to normal. He

is now symptom free after 4 years of continuous omalizumab injections. Serum tryptase was normal, but, as expected, his serum C reactive protein was mildly elevated to 0.72 ng/dL (normal value, <0.50 ng/dL) and has returned to normal after this treatment.

In patient 1, with a chronic history of exercise-induced anaphylaxis, only vigorous intercourse triggered pruritic rashes and facial angioedema. In patient 2, delayed pressure urticaria always occurred when sexual intercourses led to significant skin



Figure 1. Intense pruritic rash with left periocular angioedema immediately after sexual intercourse.

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compression, and, as expected, omalizumab treatment was efficacious in this condition.^{4,5}

Chronic inducible urticaria is a mast cell disorder with a lower threshold for cytoplasmatic degranulation of the vasoactive substances. The underlying cause for this dysfunction is still not known.⁶ Possibly the reason for the underdiagnosis of sexual intercourse as a trigger of inducible urticarias is the fact that both patients and doctors do not discuss potential medical events related to their sexual practices.

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Caregiver perceptions of when to offer an oral food challenge for children with food allergy



Food allergy (FA) is a rising public health concern, affecting up to 5% of the pediatric population.¹ Oral food challenges (OFCs) are the gold standard for diagnosing FA.² Although the decision to undergo an OFC is multifactorial, current guidelines suggest considering an OFC when the likelihood of passing the challenge is approximately 50%.³ Prior studies have shown that performing an OFC is associated with better quality of life (QOL) among caregivers of individuals with FA and reduced parental burden of FA, regardless of challenge outcome.^{4,5} Others have reported that maternal anxiety regarding allergic reactions decreases after children pass an OFC.⁶ When caregivers believe it is appropriate to undergo an OFC and whether they are conflicted about that decision is unclear. The aim of our study was to gain further understanding of caregiver knowledge, perceptions, and comfort level participating in OFCs.

This was a single-center study of patients at a tertiary care pediatric allergy clinic between February and December 2017. After institutional review board approval and participant consent, questionnaires were administered by clinic providers to parents/guardians at the time of their child's OFC. The clinic provider documented the outcome of the challenge. The de-identified survey responses were reviewed by the study investigators.

The primary survey was designed by the investigators and included questions assessing patient demographics, medical and allergy history, and the caregiver's opinions of the patient's FA and OFC. Before starting the OFC, participants were asked to identify when they believed an OFC should be offered by choosing 1 of 4 choices: (1) when 3 out of 4 people offered would pass the challenge, (2) when 2 out of 4 people would pass, (3) when 1 out of 4 people would pass, or (4) OFC should be offered to anyone, even if there were a very high chance of having an allergic reaction. Subjects also completed the Decisional Conflict Scale (DCS), a validated, 16-item tool by which respondents rank how certain they are about making a medical decision (to perform an OFC) using a Likert scale.⁷ After the OFC, participants completed a shortened version of the questionnaire to answer when they felt an OFC should be offered and whether they regretted the choice to have an OFC.

One hundred four surveys were either fully or partially completed during the study period. Based on current recommendations to offer an OFC when there is an approximately 50% chance of passing, we classified survey respondents as either "aggressive" challengers (those who stated anyone should be offered an OFC even if there is a <50% chance of passing) and "conservative"

challengers (those who believed an OFC was only appropriate if the chance of passing was >50%). Characteristics of included patients are shown in Figure 1. Exactly 50% of respondents were characterized as "aggressive" challengers. When compared via univariate odds ratios, the aggressive and conservative groups did not differ significantly for age, sex, food challenged, number/severity of FA, length of knowledge of FA diagnosis, or having undergone prior OFC. Before OFC, more than one third (37.5%) of respondents indicated that OFC should be offered "for anyone, even if there is a very high chance of reaction." After OFC, 3 no longer answered as aggressively; however, 4 new respondents indicated that OFC should be offered to anyone (making the new proportion 41%).

The 16-statement DCS was used to assess caregivers' level of uncertainty regarding their child's OFC. A score under 25 correlates with minimal difficulty in carrying out a decision, whereas higher scores are associated with decisional delay, feeling unsure, or regret. In our study, the median DCS for parents who chose to have their child undergo an OFC was 7.0 (range, 0–41). No significant difference in median DCS was seen between aggressive (5.5 [range, 0–39]) and conservative (8.6 [range, 0–41]) challengers ($P = .38$). Overall, subjects in our study did not show regret or uncertainty regarding the choice to have an OFC, even when the child had a reaction during the challenge.

The discussion between health care providers and patients with FA on whether to proceed with an OFC is important. Because an OFC can be associated with potentially significant adverse symptoms, we were surprised to find such a high number of "aggressive" challengers. There were no clear predictors of who was more likely to consider an OFC appropriate, confirming that considering a discussion of OFCs with every caregiver of a child who has at least a 50% chance of passing is important. We also found that most of our subjects were comfortable with their choice to proceed with an OFC, even when the child had a reaction during the procedure. Overall, the level of conflict was similar to the decisional conflict (DC) for other pediatric procedures reported in the literature, such as choosing to undergo a tonsillectomy (DC mean, 7.74; range, 0–45.3) or to participate in research studies for children with chronic disease (DC mean, 12.1; range, 0–33).^{8,9}

A limitation of this study is that the questionnaire was distributed at the time of the OFC, thereby only including those individuals who had already made the decision to undergo an OFC. Future studies could assess patient and caregiver perceptions of OFC earlier in the decision process and include families who elect not to have an OFC. Additionally, our clinic is located within a large tertiary care children's hospital, possibly augmenting comfort with OFCs. Finally, we received