

and the urticaria started to subside. Two years later, after a shoulder region operation, the patient received 100 mg Solu-Cortef IM and again developed widespread urticaria within 15 min. She received oral Phenergan[®], after which her urticaria resolved in hours. The patient had also experienced periarticular itching and erythema after receiving intra-articular methylprednisolone injections (Solomet Depot[®]). Due to her rheumatic arthritis, the patient had been on oral prednisolone for years (daily doses 5–30 mg) without any allergic side-effects.

On skin tests, patient 1 was positive to hydrocortisone, prednisolone, and methylprednisolone, while betamethasone and preservatives (benzyl alcohol 9 mg/ml, sodium metabisulfite 1 mg/ml) remained negative. Patient 2 had a positive intradermal test reaction to prednisolone (Table 1). When 11 control persons were skin-tested with the same corticosteroids and preservatives, no positive reactions were seen. Both of our patients had elevated IgE values (286 and 448 kU/l, respectively). Immunospot was performed as described before (2), and patient 2 had IgE antibodies to hydrocortisone and methylprednisolone conjugated with human serum albumin (HSA), while patient 1 was negative. Neither of the patients exhibited IgE binding to HSA alone.

Earlier, Pryse-Phillips et al. (3) detected specific IgE antibodies to methyl prednisolone in a patient who developed anaphylaxis during Solu-Medrol infusion. It may seem contradictory that although patient 2 tolerated 5–30 mg of prednisolone *per os*, she had a clearly positive intradermal test reaction to the same drug. However, this is in keeping with earlier findings

demonstrating that a patient with contact allergy to a corticosteroid may tolerate moderate or even high oral or parenteral doses of the same drug (4). The anti-inflammatory and anti-allergic properties of corticosteroids may mask their allergic effect. Patient 2 was also positive to the hydrocortisone/HSA conjugate on immunospot. These results indicate that a true, IgE-mediated allergy mechanism may underlie adverse reactions to corticosteroids.

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Honeymoon rhinitis

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Key words: allergy; honeymoon; mite; pollen; postcoital; rhinitis; rhinoconjunctivitis; seminal plasma; sexual.

● **ATTACKS** of asthma and rhinitis can be provoked by a variety of stimuli, including infections, allergens, exercise, and emotional stress. Sexual intercourse, too, has rarely been reported to trigger attacks of asthma and

rhinitis (1, 2). Although studies have documented the

impact of chronic obstructive pulmonary diseases and cystic fibrosis on sexual activity, little attention has been paid to the effect of asthma and rhinitis on adult sexual life. We present here several patients with postcoital exacerbation of rhinitis (honeymoon rhinitis) (2).

Twenty-three allergic subjects (nine female and 14 male; mean age, 39.47 years; range 24–51 years) had a history of symptoms of rhinoconjunctivitis. Ten had seasonal rhinoconjunctivitis (March to May) with positive skin prick test (Bial-Arístegui, Bilbao, Spain) and specific IgE (HYTEC 288, Hycor Biomedical, Inc., Irvine, CA, USA) to grass pollen (*Phleum pratense*, *Lolium perenne*, *Poa pratensis*, and *Dactylis glomerata*) and *Olea europaea* pollen. Thirteen had perennial rhinoconjunctivitis with positive skin prick test (Bial-Arístegui) and specific IgE (HYTEC 288) to *Dermatophagoides pteronyssinus* and *D. farinae*. None had a history of asthma, were smokers, had sinusitis or other cause of rhinitis, or had previously received immunotherapy. Since sexual activity involves exercise equivalent to climbing two flights of stairs (3), nasal

Postcoital exacerbation of allergic rhinoconjunctivitis.

symptoms were recorded in each patient before and after climbing two flights of stairs on three different occasions.

All subjects had experienced sneezing, rhinorrhea, and nasal obstruction immediately after sexual intercourse. The symptoms lasted for about 5–15 min. The attacks did not occur before or during coitus, but always commenced immediately afterward. Seasonal patients did not have postcoital rhinitis from July to February, although patients with perennial rhinitis had not experienced spontaneous improvement of the honeymoon rhinitis throughout the year. Postcoital rhinitis was never associated with asthma. None of the patients developed nasal symptoms after climbing two flights of stairs. All our patients had pre-existing rhinitis (mean: 1.65 years; range 1–3 years) before the symptoms of the honeymoon rhinitis had begun. Three patients had experienced postcoital rhinitis at their first intercourse. This last observation supports the views expressed by Strauss & Dudley (4) that sexual activity for the first time may set the stage for an associated asthmatic attack.

Although rhinitis has been associated with exercise, neither climbing two flights of stairs nor an exercise provocation test elicited symptoms of rhinitis in any of these patients. It appears that sexual excitement, rather than exercise, was the likely cause of postcoital rhinitis in our patients.

Allergy to human seminal plasma in female subjects has also been reported to cause postcoital asthma (5). This does not seem to be a likely explanation in our female patients, as they did not have any associated local or systemic manifestations, they had negative human seminal plasma-specific IgE (HYCOR 288), and the symptoms were not abolished by condom usage. On the other hand, skin prick test (Bial-Aristegui) and specific IgE (HYCOR

288) to latex were negative. All patients experienced honeymoon rhinitis without condom usage.

As in asthmatic patients (1), another noteworthy aspect seen in several of our patients was the recurrence of symptoms on a few occasions 5–8 h after the resolution of immediate postcoital symptoms. Such attacks never occurred, except in association with postcoital rhinitis 5–8 h earlier. It appears that sexual excitement may also cause a late rhinitis response.

As previously described (1), patients reported symptomatic relief and cessation of postcoital rhinitis after taking beclomethasone nasal spray. Cromolyn nasal spray has been found to be ineffectual (1).

The exact mechanism by which sexual intercourse can precipitate honeymoon rhinitis is not known. Emotional excitement and anxiety may be the trigger factors for postcoital rhinitis rather than exercise (6). Sexual activity is associated with autonomic stimulation, with the parasympathetic segment becoming more active toward the culmination in orgasm. Autonomic imbalance with parasympathetic overactivity (2) may occur in some patients, an effect which may be caused by the intense emotion during sexual intercourse (6). Cholinergic stimulation is known to cause release of mast-cell mediators, and this may be one of the mechanisms that can provoke postcoital rhinitis in these patients (7).

In conclusion, we describe here several cases of honeymoon rhinitis in extrinsic allergic patients. Postcoital asthma and rhinitis can easily be overlooked due to patient embarrassment and lack of physician awareness (1).

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