

Correspondence

Urticaria after specific bronchial challenge

To the Editor:

Makowska et al¹ demonstrated that bronchial challenge with aspirin can involve systemic reactions. Specific bronchial challenge (SBC) is an important tool for the diagnosis of doubtful clinical cases and for asthma research.²⁻⁴ It is a safe method for *in vivo* diagnosis of respiratory diseases but has to be performed in a standardized manner.²⁻⁴

We report a case of a 19-year-old housewife with allergic persistent rhinitis and intermittent asthma who agreed to participate in a protocol that included performance of an SBC with *Dermatophagoides pteronyssinus*. On the day of the SBC, the patient presented with the following parameters: oxygen saturation, 96%; peak expiratory flow (PEF), 470 L/min (94% of predicted value); and FEV₁, 90% of predicted value. Despite the absence of reported clinical symptoms, pulmonary auscultation revealed sparse inspiratory wheezing.

The SBC started with inhalation of a 1:2048 dilution of skin prick test solution, which was 2 concentrations below the last concentration that caused positive results on the cutaneous test. However, instead of 15-minute intervals between inhalations, as described in the SBC protocol, the inhalation interval was reduced to 5 minutes. By mistake, the SBC protocol was confused with the nonspecific bronchial challenge protocol. At a 1:64 dilution, FEV₁ decreased by more than 15%, characterizing a positive SBC result. At this point, allergen inhalation was interrupted. The patient had dyspnea that improved after treatment with β_2 -agonists.

During hospitalization, arterial blood pressure was 120/80 mm Hg, oxygen saturation varied between 94% and 96%, and pulmonary auscultation revealed diffuse moderate wheezing. Despite a gradual increase in the PEF, 8 hours after the SBC, the PEF decreased again (390 L/min, 78% of predicted value).

Twenty-four hours after the SBC, the patient presented with generalized urticaria, which was characterized by pruritus with increased diffuse erythematous papules. The patient had never presented with urticaria and had no other cause to justify the disease. She was treated with oral antihistamine and corticosteroid and presented with clinical improvement.

Systemic adverse reactions during SBCs are rarely described. Review of the literature indicated no reports of delayed urticaria associated with SBCs with common aeroallergens.

The case herein described, as in the study by Makowska et al,¹ demonstrates that a substance can be absorbed by the airway mucosa and cause distant reactions, both allergic and nonallergic. We believe that 2 factors contributed to the development of the systemic reaction. First is the excessive dose of the allergen to which the patient had been exposed because of the nonobservance of the SBC protocol. If the correct inhalation intervals had been observed, a positive result and consequent SBC interruption would have occurred with a higher dilution. For the second factor, the existing inflammation of the airways might have contributed to allergen absorption and development of an urticarial reaction.

The present report underlines the importance of compliance with all norms for the performance of SBC to avoid the occurrence of iatrogenic events, one of the main causes of adverse reactions. Careful clinical anamnesis should be performed during bronchial challenge because the presence of signs of asthma is associated with an increased risk of test complications.

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