

Recurrent Aphthous Stomatitis and Atopy

Cleto Veller-Fornasa, Gianni Bezze, Stefano Rosin, Michela Lazzaro, Marco Tarantello and Roberto Cipriani

Department of Medical and Surgical Specialities, Unit of Dermatology and Venereal Diseases, University of Padua, Via C. Battisti 206, IT-35100 Padua, Italy. E-mail: cleto.vellerfornasa@unipd.it

Accepted May 28, 2003.

Sir,

Recurrent aphthous stomatitis (RAS) is the appearance of recidivant aphthae, almost exclusively in the oral cavity. Atopy is defined as a genetically determined disorder in which there is an increased likelihood of IgE antibodies forming, and an increased susceptibility to diseases such as asthma, hay fever and atopic dermatitis (1). RAS can be part of the symptoms in Behçet disease, Sweet syndrome and Crohn disease, but often it is idiopathic. Atopy can have a significant association with other immunological mediated diseases, e.g. alopecia areata (1, 2). Of added interest is the fact that the pathology of the aphthae involves many signs of immunological complexity (1, 3). Additionally, there are many reports correlating RAS with food allergy or food intolerance (FA/FI) (4–9). Based on this multifaceted background of RAS, we decided to investigate whether patients affected by RAS present clinical manifestations of atopy or have an atopic background.

PATIENTS AND METHODS

We studied 46 patients aged 12 and 48 years (25 females and 21 males) affected by idiopathic RAS without clinical or laboratory data characteristics of Behçet disease, iron deficiency, gastrointestinal diseases, endocrine alterations or immunodeficiency.

All 46 patients were investigated for familiar and personal history of atopy and had total IgE determination, specific IgE antibody test in serum, skin prick tests to common inhalant and food allergens (Lofarma, Italy), and skin patch test to Dermatophagoides mix (Chemotechnique Diagnostics, Sweden).

We considered 2+ and 3+ reactions of the skin prick test to inhalant and food allergens and dermatophagoides mix patch test as positive. We also considered elevated those concentrations of total IgE (Prist) in the sera that were 20% higher than the correlated age values. Additionally, antigen-specific IgE to common inhalant and food allergens were measured with a radioallergosorbent test (RAST).

Our control group included 45 consecutive sex- and age-matched patients who suffered from seborrhoeic dermatitis or tinea pedis/cruris or psoriasis of the scalp and/or the nails. Chi-square statistics were used to evaluate group differences.

RESULTS

In the patient group, 80% had personal and 58% familiar atopy. Clinical signs of atopy were present in 26 of the patient group (56%) shown as allergic asthma (8 cases), rhinitis/conjunctivitis (17 cases), atopic dermatitis (25 cases) and urticaria (6 cases). Interestingly, in 31 patients (78%), 2 or more of these associations were present. Twenty patients (43%) had a positive patch test to dermatophagoides mix antigen, while

prick tests were positive in 25 patients (54%). The total IgE was increased in 30 patients (65%). The IgE range in all patients (children and adults) ranged from 140 to 640 UI/ml. In 36 patients (65%), specific IgE antibody to common inhalant and food allergens showed a positive RAST.

Statistical studies showed that all the examined variables (personal and familiar atopy, clinical signs of atopy, skin prick test, patch test, RAST) were significantly associated with RAS ($p < 0.0001$ for each one variable).

In the control group we found familiar history of allergy in three patients, increased level of total IgE in two cases, and positive prick tests in another two different cases.

DISCUSSION

Our investigation indicates that RAS, when not correlated to other diseases, more often than not can be considered a phenomenon correlated to the immunological and constitutional factors distinctive for atopy. In a similar way, there seems to be an association with alopecia areata (1, 2). In some patients, RAS and sensitization to specific foods are described to correlate (5, 7, 8, 11); in other patients, epidemiological researchers assume, but do not actually demonstrate, a possible association between RAS and FA/FI (4, 6, 9).

Therefore, since (a) it is well known that atopy manifestations are frequently associated with FA/FI (1, 12, 13), (b) it has been shown in both clinical and epidemiological studies that aphthae are sometimes correlated with FI/FA, and (c) it is known that patients with aphthae can be atopic, it is conceivable that some patients affected by RAS could also have clinical or latent atopy.

The fact that the familiar prevalence of atopy symptoms in our patients with RAS was present with statistical significance ($p < 0.0001$) indicates that RAS belongs to the heritage of an "atopic background".

REFERENCES

1. Champion RH, Parish WE. Atopic Dermatitis. In: Rook A, Wilkinson DS, Ebling FJG, eds. Textbook of dermatology. Oxford: Blackwell Scientific Publications. 1992: 589–610.
2. Lis A, Pierzchala E, Brzezinska-Wcislo L. The role of cell-mediated immune response in pathogenesis of alopecia areata. *Wiad Lek* 2001; 54: 159–163.
3. Porter SR, Scully C, Pedersen A. Recurrent aphthous stomatitis. *Crit Rev Oral Biol Med* 1998; 9: 306–321.
4. Thomas HC, Ferguson A, McLennan JG, Mason DK. Food antibodies in oral disease: a study of serum

- antibodies to food proteins in aphthous ulceration and other oral diseases. *J Clin Path* 1973; 26: 371–374.
5. Finn R, Cohen HN. Food allergy: fact or fiction? *Lancet* 1978; 25: 426–427.
 6. Wray D, Vlagopoulos TP, Siraganian RP. Food allergens and basophilic histamine release in recurrent aphthous stomatitis. *Oral Surg Oral Med Oral Pathol* 1982; 54: 388–395.
 7. Hay KD, Reade PC. The use of an elimination diet in the treatment of recurrent aphthous ulceration of the oral cavity. *Oral Surg Oral Med Oral Pathol* 1984; 57: 504–507.
 8. Wright A, Ryan FP, Willingham SE. Food allergy or intolerance in severe recurrent aphthous ulceration of the mouth. *Br Med J* 1986; 292: 1237–1238.
 9. Wilson CWM. Food sensitivities, taste changes, aphthous ulcers and atopic symptoms in allergic disease. *Ann Allergy* 1990; 44: 302–307.
 10. Salazar Cabrera AN, Berron Perez R, Ortega Martell JA, Onuma Takane E. Asthma and cyclic neutropenia. *Allergol Immunopathol* 1996; 24: 25–28.
 11. Veller Fornasa C, Tarantello M, Miglietta A, Peserico A. Recurrent aphthous stomatitis. *G Ital Dermatol Venereol* 1992; 127: 579–582.
 12. Schafer T, Boher E, Ruhdorfer S, Weigl L, Wessner D, Heinrich J, et al. Epidemiology of food allergy/food intolerance in adults: associations with other manifestations of atopy. *Allergy* 2001; 56: 1172–1179.
 13. Woods RK, Thien F, Raven J, Walters EH, Abramson M. Prevalence of food allergies in young adults and their relationship to asthma, nasal allergies and eczema. *Ann Allergy Asthma Immunol* 2002; 88: 183–189.