

LETTERS TO THE EDITOR

Contact Allergy in the Burning Mouth Syndrome: a Retrospective Study on 38 Patients

Diego Dal Sacco¹, Damiano Gibelli² and Rosella Gallo^{1*}¹Department of Dermatology, Faculty of Medicine and ²Department of Dental Materials, Faculty of Dentistry, University of Genoa, Viale Benedetto XV n.7, IT-16132 Genova, Italy. *E-mail: rs.gallo@unige.it
Accepted June 7, 2004.

Sir,

The burning mouth syndrome (BMS) is a rather frequent chronic disorder mainly affecting post-menopausal women. It is defined as a burning pain of the oral cavity in the absence of mucosal lesions (1). Based on the daily variation of the pain, three clinical subtypes can be identified. Type 1 BMS is characterized by pain-free awakening with symptoms developing during the day. In type 2, pain is constant throughout the day. In type 3 symptoms are intermittent (2). The pathogenesis is obscure: many cases are idiopathic, but systemic and local factors can be implied, often in a multifactorial way. They include contact hypersensitivity to oral allergens, which is said to be mainly associated with intermittent burning.

To investigate the rate of clinically relevant positive patch test reactions in patients with BMS, we retrospectively analysed 38 patch-tested patients with BMS.

PATIENTS AND METHODS

We reviewed the clinical data and patch test results of 38 patients with oral burning and no evidence of mucosal lesions, referred to our Contact Clinic for patch testing over a 3-year period. All patients were contacted by phone and interviewed about the course of their symptoms after the date of patch testing, with particular reference to the effect of contact avoidance in case of positive patch test results.

The patients included 34 women and 4 men; their age range was 35–89 years with a mean age of 66 years. The average duration of the oral symptoms at the time of patch-testing ranged from 5 months to 15 years.

Based on the reported daily course of the pain, patients were classified into the three commonly recognized BMS subtypes.

Associated reported conditions which could be extrapolated from the history included: depression, cancer phobia, systemic medications (with particular regard to xerostomic drugs), menopause, concurrent diabetes, denture wearing and recent dental treatments. Data about other possible triggers, such as nutritional deficiencies, were not taken into account because they were not available for all patients.

All patients had been patch-tested with the SIDAPA (Società Italiana di Dermatologia Allergologica e Ambientale) standard series plus a selected 'oral cavity series' made of 34 specific haptens, including several dental resins, metal salts and flavours. Haptens were tested on the upper part of the back with Finn chambers on Scanpore tape and readings were performed at 48 and 72 h. Reactions were rated on a scale of 1+ to 3+.

RESULTS

Twenty-six (68.4%) patients had type 3 BMS, 8 (21%) had type 2 BMS and 4 (10.5%) had type 1 BMS.

Twenty-seven patients (71%) wore complete or partial dentures and 11 of them related the onset of their oral burning to dental treatment. Twenty-five patients (66%) complained of depressive and/or anxious disorders and 6 patients (16%) reported cancer phobia; 30 patients were of menopausal or postmenopausal age; 1 patient had non-insulin-dependent diabetes; 20 patients (53%) took potentially xerostomic medications, but only 9 of them (24%) actually complained of xerostomia.

Positive patch test reactions were present in 16 of 38 patients, some with multiple sensitizations. Based on careful evaluation of the patients' history and allergen exposure, eight patients showed no significant correlation between the oral burning and the positive patch tests, which could be explained by preceding unrelated exposures.

Possible clinical relevance was present in eight patients (Table I). The effect of allergen contact discontinuation could not be verified in two of them who were lost to follow-up. In one patient – positive to palladium chloride – symptoms persisted, although attenuated, after removal of her palladium-containing denture. In five cases (nos 1–5, Table I), all with type 3 BMS, relevance was considered certain because discontinuation of the contact with the positive hapten had resulted in stable resolution (from 1.5 to 2 years) of the oral burning, in spite of the persistence of other possible precipitating factors. In particular, two patients were sensitized to metal alloys in dentures. One patient, who had undergone repeated dental restorative treatments, was allergic to fragrances present in dental impression compounds. Two patients, who had the habit of chewing large amounts of mint candies and/or chewing gums, reacted to spearmint oil.

DISCUSSION

BMS represents a diagnostic and therapeutic challenge for clinicians. According to recent updates it is crucial for good patient management to distinguish primary BMS, apparently related to a neuropathic background and resistant to therapy, from secondary BMS due to local and systemic precipitating factors. The latter condition deserves accurate evaluation because tailored treatment may lead to improvement/remission of the pain (3, 4). Commonly associated conditions include depression and cancerophobia, menopause and other

Table I. Clinical characteristics and relevance of positive patch tests in eight post-menopausal, denture-wearing women with burning mouth syndrome (BMS)

Patient no.	1	2	3	4	5	6	7	8
Age (years)	49	64	49	64	72	77	66	76
BMS type*	3	3	3	3	3	3	2	2
Positive reactions	NS ++, CC +	PC +	BP ++, FM ++, V +	SO +	SO +	HM +	MAC +	PC +
Exposure	Denture	Denture	Dental impression	Candy	Candy+chewing gum	Denture	Denture	Denture
Relevance	Yes	Yes	Yes	Yes	Yes	Prob./?	Prob./?	Prob.
Depression	No	Yes	Yes	No	Yes	No	Yes	Yes
Cancerophobia	No	No	Yes	No	No	No	No	No
Xerostomic drugs	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Xerostomia	Yes	No	Yes	No	Yes	No	No	Yes

NS, nickel sulphate; CC, cobalt chloride; PC, palladium chloride; BP, Balm of Peru; FM, fragrance mix; SO, spearmint oil; HM, 2-hydroxyethyl methacrylate; MAC, mercury ammonium chloride; V: vanillin; +, non-vesicular positive reaction; ++, vesicular positive reaction; ?, patient lost to follow-up.

*Type 2, constant symptoms; type 3, intermittent symptoms.

hormonal changes, nutritional deficiencies, diabetes mellitus, medications, xerostomia, oesophageal reflux, denture-related factors, parafunctional behaviours and candidiasis.

The role of contact hypersensitivity to oral allergens is somewhat controversial: some studies claim a high rate of allergy to denture materials and/or food additives and flavours (5, 6), whereas others seem to contradict these findings (7, 8), but all reports refer to small patient samples and they are not homogeneous in terms of methodology.

In particular, Lamey et al. (6) reported 65% of positive patch test reactions in a cohort of 33 patients with intermittent burning (type 3 BMS); 10 of these patients were cured by avoiding relevant allergens, suggesting that patients with intermittent burning are likely to have positive patch tests of aetiological significance. However, the association of contact allergy with this particular BMS subtype, the least frequent as a whole (10%), was not subsequently investigated by other authors, who failed to define the clinical subtype of their patients (7, 8).

Our data support Lamey's findings: five of our patients, all with intermittent burning, had relevant allergic reactions confirmed by stable remission of the pain after avoidance of the implicated allergen. Indeed, the high rate (13%) of significant contact allergy in our series, as compared with previous ones, might be explained by the fact that as many as 26 of our patients (68.4%) belonged to the BMS 3 subtype.

Whether these cases should be defined as secondary BMS or rather as subclinical allergic contact stomatitis can be a matter of debate. In any case, according to our experience, patch-testing is a useful tool in the evaluation of patients with chronic oral burning, particularly

when symptoms are intermittent. Diagnostic efficacy requires the application of a 'specific oral cavity series' containing haptens of recognized significance, such as mint flavours (9), as well as accurate evaluation of the patient history and allergen exposure to correctly discriminate relevant patch test reactions.

REFERENCES

1. Drage LA, Rogers RS 3rd. Burning mouth syndrome. *Dermatol Clin* 2003; 21: 135–145.
2. Lamey PJ, Lamb AB. Prospective study of aetiological factors in burning mouth syndrome. *BMJ* 1988; 296: 1243–1246.
3. Scala A, Checchi L, Montevercchi M, Marini I, Giamberardino MA. Update on burning mouth syndrome: overview and patient management. *Crit Rev Oral Biol Med* 2003; 14: 275–291.
4. Pinto A, Sollecito TP, DeRossi SS. Burning mouth syndrome. A retrospective analysis of clinical characteristics and treatment outcomes. *N Y State Dent J* 2003; 69: 18–24.
5. Dutree-Meulenberg ROGM, Kozel MMA, van Joost T. Burning mouth syndrome: a possible etiologic role for local contact hypersensitivity. *J Am Acad Dermatol* 1992; 26: 935–940.
6. Lamey PJ, Lamb AB, Hughes A, Milligan KA, Forsyth A. Type 3 burning mouth syndrome: psychological and allergic aspects. *J Oral Pathol Med* 1994; 23: 216–219.
7. Helton J, Storrs F. The burning mouth syndrome: lack of a role for contact urticaria and contact dermatitis. *J Am Acad Dermatol* 1994; 31: 201–205.
8. Virgili A, Corazza M, Trombelli L, Arcidiacono A. Burning mouth syndrome: the role of contact hypersensitivity. *Acta Derm Venereol* 1996; 76: 488–490.
9. Morton CA, Garioch J, Todd P, Lamey PJ, Forsyth A. Contact sensitivity to menthol and peppermint in patients with intra-oral symptoms. *Contact Dermatitis* 1995; 32: 281–284.