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Rosacea Triggered by a Vitamin B Complex Supplement

Rosácea desencadenada por un complejo vitamínico del grupo B

To the Editor:

Rosacea is a chronic inflammatory skin condition that preferentially affects the central area of the face. It is characterized by transient episodes of erythema and inflammatory lesions, mostly in the form of papules and pustules. The underlying pathophysiological mechanisms are not known for certain, but it has been postulated that the main mechanisms might be certain vascular disorders and immune responses to infestation by diverse microorganisms, including *Demodex folliculorum*.[1] Rosacea has multiple triggers, including food, emotional states, climate, the application of cosmetic and therapeutic products, and the use of certain systemic drugs.

We describe the case of a 38-year-old woman who consulted for an outbreak of edematous, erythematous papules and plaques and isolated pustules on both cheeks. The lesions had appeared approximately 2 weeks earlier.

The patient had no history of acneiform lesions and reported that she was not taking any regular medication and had not recently been exposed to the sun or applied cosmetics or creams to her face. She did, however, mention that the lesions had appeared 5 days after starting a vitamin B complex supplement (vitamins B_{12} [1 g/d], B_6 [500 mg/d], and B_1 [500 mg/d]) to treat neuropathic pain.

Because the lesions were highly suggestive of rosacea, it was decided not to perform a skin biopsy or request additional tests. The vitamin complex was withdrawn and treatment with sun protection and topical metronidazole was initiated; the lesions improved progressively and resolved completely within 3 weeks. No other outbreaks occurred in the months that followed.

A range of drugs can induce or exacerbate rosacea or acneiform lesions. The best known of these are corticosteroids, especially fluorinated steroids administered topically, orally, or by inhalation.[2] Our review of the literature revealed other drugs that can, albeit less frequently, cause rosacea-like eruptions. Among them, amiodarone[3], oral parabens,[4] acetazolamide,[5] amineptine (an antidepressant),[6] phosphodiesterase-5 inhibitors,[3] and several vitamin B derivatives.[7-10]

Various mechanisms have been linked to rosacea-like eruptions, although most of them involve nitric oxide and prostaglandins.

Specifically, it has been postulated that nitric oxide released following the administration of certain drugs such as phosphodiesterase-5 inhibitors (used to treat impotence) could cause vascular alterations and induce rosacea in genetically predisposed individuals.[3] Another theory is that irritation of the follicular epithelium due to a prolonged, high level of excretion of the responsible drugs (such as those mentioned above) could trigger an inflammatory response.[7]

Vitamin B_3 (niacin) can cause skin flushing, an adverse effect that may limit the use of this vitamin B derivative. Flushing has been associated with the daily ingestion of high doses of B_3.[10] Several studies conducted in rats have shown a dose-dependent increase in vascular permeability in rats treated intradermally with nicotinamide (a co-enzyme containing vitamin B_3) and its metabolite N-methylnicotinamide; the mechanism was believed to involve nitric oxide and prostaglandins.[8]

Vitamins B_2 (riboflavin), B_6 (pyridoxine), and B_{12} (cyanocobalamin) can exacerbate acne vulgaris or trigger an outbreak of acneiform lesions. Vitamin B–induced rosacea is more common in women than in men. It tends to present as disseminated papules and pustules on the face (above all on the forehead and cheeks), although it can also affect the upper part of the chest.[7]

There have also been reports of rosacea fulminans following the administration of vitamin B derivatives; in most of the cases, the reactions were dose-dependent.[7]

Vitamin B-triggered rosacea does not usually respond satisfactorily to standard rosacea treatments, but it does improve rapidly on withdrawal of the offending vitamin or vitamins.

In conclusion, vitamin B derivatives should be considered when analyzing possible pharmacological causes of rosacea onset or exacerbation.

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Sensitization to Methylchloroisothiazolinone-Methylisothiazolinone After a Burn Caused by Massive Accidental Occupational Exposure

Sensibilización a metil-cloro-isotiazolinona/metilisotiazolinona tras quemadura por exposición profesional masiva accidental

To the Editor:

Methylchloroisothiazolinone in conjunction with methylisothiazolinone (MCI/MI) is a preservative and powerful biocide.[1] It is used in the manufacture of cosmetics, paint, glue, and synthetic rubber and to disinfect cooling systems due to its antibacterial properties. It is known to be a potent sensitizer that may lead to the development of allergic contact dermatitis (ACD) among cosmetics users and personnel working in industries where the substance is used.

We present the case of a 27-year-old female chemistry graduate working for a company using cooling tower products. While handling Mefaclen (MCI/MI 3:1, 14% solution in water, 99.9% pure), she accidentally suffered immediate burns accompanied by erythematous-edematous, plaque-type lesions, some with superficial erosions, scattered over exposed areas (upper part of the chest, neck, arms and dorsum of the feet) (Figure 1). Vaseline gauze was applied as the initial treatment. At 120 hours the lesions had deteriorated and new erythematous vesicular lesions that were very itchy appeared in areas untouched by the product (Figure 2). ACD was suspected and she received oral corticosteroid therapy at a dose of 0.5 mg/kg/d for 7 days and topical 0.05% betamethasone valerate twice a day, with complete resolution of the lesions.

Skin patch testing was performed at 48 hours on the upper back using standard batteries (GEIDAC: Spanish Contact Dermatitis and Skin Allergy Research Group; True test: Mekos laboratories, Denmark; additional allergens from Chemotechniques diagnostics, Sweden) on Finn Chambers patches (Tuusula, Finland) using different dilutions of the same MCI/MI mixture in water.

Readings were taken at 72 hours and 168 hours according to the International Contact Dermatitis Research Group guidelines. The patient had a positive response to the MCI/MI mixture on the standard battery (0.04 mg/cm^2 in cellulose) on days 3 and 7 (++), to a 0.01% solution (water) on days 3 and 7 (++), to a 0.001% solution (water) on days 3 (+) and 7 (+/−), and to a 0.0001% solution (water) on days 3 (+) and 7 (−).

Sensitization to isothiazolinones can be caused by exposure to small quantities over varying periods of time or by exposure to large quantities, as in the case of chemical burns. Despite the safety measures used in the industry, sensitization to this product is common as it is a potent allergen.[2-4] The majority of occupational cases described in the literature refer to repeated exposure to the product at very low concentrations,[5,6] although there are cases similar to ours in which sensitization occurred after accidental exposure to large quantities.

Due to increased sensitization to this product in recent decades (in Europe there is an estimated prevalence of 5% in dermatological patients who have undergone patch testing for suspected ACD)[7], the current concentration recommended for cosmetic products is of 10 to 15 ppm,