Lymphomatoid dermatitis caused by contact with textile dyes

Luis M. Valladares Narganes, Pedro Sanchez Sambucety, Inmaculada Ruiz Gonzalez, Mercedes Otero Rivas and Manuel Angel Rodriguez Prieto

Dermatology, Complejo Asistencial Universitario León, Leon 24008, Spain
doi:10.1111/j.1600-0536.2012.02164.x

Key words: allergic contact dermatitis; Disperse Blue 106; Disperse Blue 124; occupational; pseudolymphoma; textile industry.

Lymphomatoid dermatitis, described by Gómez Orbaneja in 1976, is defined as a particular form of chronic, persistent contact dermatitis, with clinical and histological features resembling those of mycosis fungoides (1). There are localized forms, consisting of lesions in the areas of contact with the allergen, and generalized forms, characterized by generalized, spaced eczematous lesions, sometimes with evolution towards erythroderma, and often resistant to different treatments (2).

There are descriptions of cases related to different allergens, such as phosphorus, p-tert-butylphenol-formaldehyde resin, p-phenylenediamine (PPD), ethylenediamine, nickel, cobalt, and gold (3).

The hypothesis is that an antigenic stimulus produces an accumulation of activated lymphocytes. This stimulus, maintained over time, produces clonal selection and lymphoid proliferation, possibly leading to transformation into blast cells that may develop into a true cutaneous lymphoma (4).

We present the first case of lymphomatoid dermatitis caused by contact with textile dyes.

Case Report

A 37-year-old worker at a sewage treatment plant who wore blue overalls at work attended with a 10-month history of a confluent red rash with sparing of the skin folds (Fig. 1).

A skin biopsy of the erythematous skin showed an interface dermatitis. He was patch tested with our baseline series according to the International Contact Dermatitis Research Group criteria, with the TRUE Test® system (Stallergens Iberia, S.A., Madrid, Spain), and obtained positive results for caine mix and PPD.

The overalls were replaced with light brown ones, and topical steroids were prescribed, with no improvement of the lesions. A new biopsy showed findings consistent with patch stage cutaneous T cell lymphoma with cytological atypia. Immunohistochemistry showed a dominant phenotype of T helper cells (CD3+ and CD4+) (Fig. 2) and inconclusive results for gene rearrangement. The study was completed with a computerized tomography scan, which showed no evidence of pathological lymphadenopathy, and bone marrow biopsy, which gave negative results.

Treatment with narrowband ultraviolet B phototherapy was started, with partial improvement, and then interrupted for a second group of textile dye contact allergy patch tests (Chemotechnique® textile colours and finish series; Sugelabor® S.A., Madrid, Spain), which gave the following positive results: Disperse Yellow 3, +; Disperse Red 1, ++; Disperse Orange, +++; Disperse Red 17, +++; aminophenol, +++; aminobenzene, ++++; and Disperse Blue Mix 106/124, +++ (Fig. 3).

A diagnosis of lymphomatoid dermatitis caused by textile dyes was made. He was advised to change the colour of his clothes to white. Full resolution of the symptoms was obtained, and has been maintained for 3 years of follow-up without cutaneous lesions, except for the appearance of eczema in the armpits caused by the occasional use of coloured clothing (Fig. 1).

Discussion

Lymphomatoid contact dermatitis is a cutaneous manifestation with a chronic and initially benign nature, but is difficult to diagnose, owing to the difficulty in associating it with a particular allergen.

Although histological findings may be indistinguishable from those of cutaneous lymphoma and pseudolymphoma, the absence of acanthosis, prominent
LYMPHOMATOID DERMATITIS CAUSED BY CONTACT WITH TEXTILE DYES • VALLADARES NARGANES ET AL.

Fig. 1. Confluent erythematous macules on the abdomen and back, leaving rounded areas of healthy skin, and the appearance 3 years later, after removal of allergens, without skin lesions.

epidermotropism, deep monomorphous infiltrate of atypical lymphocytes, monoclonality in gene rearrangement and destruction of skin appendages are findings in favour of a true cutaneous T cell lymphoma (5).

Therefore, the transition from polyclonality to monoclonality in gene rearrangement may be a sign of progression from pseudolymphoma to lymphoma or even leukaemia, caused mainly by persistent antigenic stimulation over a given time period (6).

The definitive diagnosis is made by correlating data from the clinical history, histology and immunohistochemistry, gene rearrangement, and positive patch test results. Although it is usual in lymphomatoid contact dermatitis to find lymphocyte polyclonality, there are cases in the literature of pseudolymphoma that showed monoclonality, which could hinder the diagnosis of progression towards an authentic lymphoproliferative process (7).

Our case is the first to be described of lymphomatoid contact dermatitis caused by textile dyes; however, we believe that it is justified to regard this as a cross-reaction between para-amino compounds and PPD, and disperse dyes of the azo type (Disperse Yellow, Disperse Red, Disperse Orange, Disperse Blue, and 4-aminophenol), as our patient had this co-sensitization with no history
LYMPHOMATOID DERMATITIS CAUSED BY CONTACT WITH TEXTILE DYES • VALLADARES NARGANES ET AL.

Fig. 2. Inflammatory infiltrate of atypical lymphocytes in the superficial dermis with the immunohistochemical phenotype of T helper cells (CD3⁺ CD4⁺) (haematoxylin and eosin, × 10).

of contact allergy to PPD in the past (8, 9). Total resolution of symptoms was obtained after removal of the antigenic stimulus, and there was maintenance of a lesion-free status after 3 years of follow-up. However, we do need to be vigilant about the possibility of progression to cutaneous lymphoma, so we continue to monitor our patient.

References


