ARQUIVOS DE ASMA, ALERGIA E IMUNOLOGIA

Pigmented cosmetic contact dermatitis

Dermatite de contato pigmentada por cosmético

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ABSTRACT

Pigmented contact dermatitis is a rare condition associated with numerous cosmetic and textile allergens. It predominantly affects middle-aged women with high phototypes. The patch test is essential to identify the causative agent. Treatment includes removal of the causative agent, sunscreen use, administration of topical bleaching agents, and occasionally abrasive dermatologic procedures. We report a case of pigmented cosmetic contact dermatitis motivated by its clinical exuberance and satisfactory outcome, emphasizing the importance of diagnostic suspicion and adequate management impacting this outcome.

Keywords: Contact dermatitis, pigmentation, cosmetics.

RESUMO

A dermatite de contato pigmentada se destaca por sua raridade, sendo associada a inúmeros alérgenos cosméticos e têxteis. Acomete predominantemente mulheres de meia idade e fototipos altos. O teste de contato é imprescindível para a identificação do agente causal. O tratamento indicado consiste no afastamento do agente causal, no uso de fotoprotetores, clareadores tópicos e, por vezes, procedimentos dermatológicos abrasivos. Relatamos um caso de dermatite de contato pigmentada por cosmético motivado pela exuberância clínica e desfecho satisfatório, ressaltando a importância da suspeição diagnóstica e do manejo adequado impactando neste desfecho.

Descritores: Dermatite de contato, pigmentação, cosméticos.

Introduction

Pigmented contact dermatitis (PCD) is a rare condition characterized by brownish-gray pigmentation on the skin due to melanin deposition, predominantly affecting the face, being more intense on the forehead and temples.[1] The term PCD was coined in the 1970s by Osmundsen and Pinôl Aguadé et al., but Riehl had already described cases of facial hyperpigmentation in 1917 during World War I.[2] We report a case of PCD to a cosmetic product with an exuberant clinical presentation and a favorable outcome, highlighting the impact of diagnostic suspicion and adequate management on the outcome.

Case report

A 56-year-old woman with Fitzpatrick skin type IV presented with a complaint of "facial patches" for the past 2 years. On examination, there were brownish-gray reticulated patches distributed across the entire patient's face (Figure 1). The lesions were asymptomatic and had an abrupt onset following the use of a skin-lightening cream (Renovare Accolade®). The patient's medical history included 4 pregnancies, menopause at the age of 40 (without hormonal replacement therapy), and a previous history of facial melasma after the last pregnancy. Serological tests for hepatitis B and C and antinuclear antibodies were negative, and iron levels were within the normal

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range. Homogentisic acid levels in urine were also normal. An incisional biopsy was performed on the right cheek, revealing epidermal atrophy with foci of basal layer vacuolization, exocytosis of lymphocytes, and keratinocyte apoptosis. The dermis showed solar elastosis, mild superficial perivascular lymphomononuclear infiltration with numerous melanophages, and no signs of ochronosis or hair follicle inflammation. Histopathological findings suggested superficial perivascular dermatitis with significant pigment dispersion (Figure 2). A patch test was performed and yielded a 2+ reaction to the currently used skin-lightening cream and a 1+ reaction to paraphenylenediamine (mix) and 0.5% methyldibromo glutaronitrile. Based on clinical and histopathological findings, the diagnosis of PCD to cosmetics was established. Treatment was initiated with 0.05% clobetasol cream applied to the face at night from Monday to Friday, preceded 30 minutes by a formulation containing 2% hydroquinone cream and 6% glycolic acid, together with sunscreen (SPF 70) during the day. There was gradual improvement in the lesions, with mild reticulated patches remaining on the face after 3 months of treatment, and complete resolution of the condition after 1 year (Figure 3).

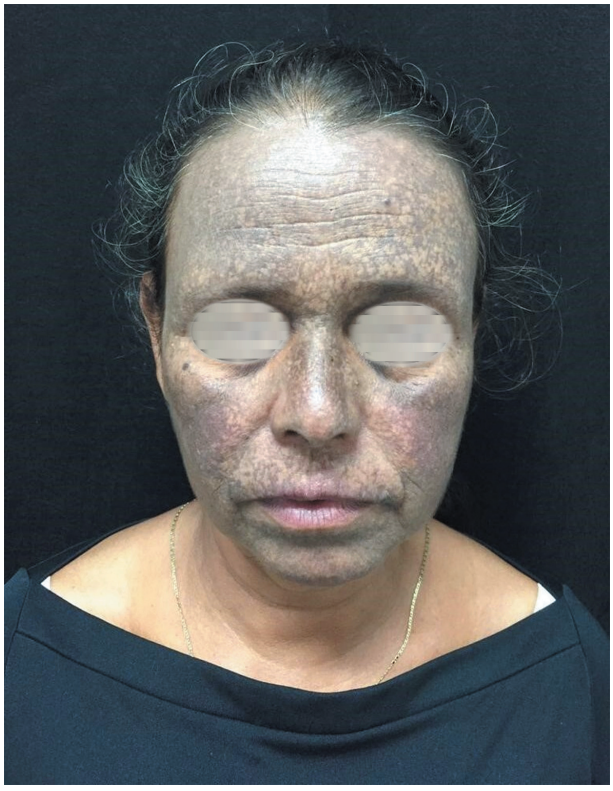

Figure 1
Brownish-gray reticulated patches distributed across the patient's face.

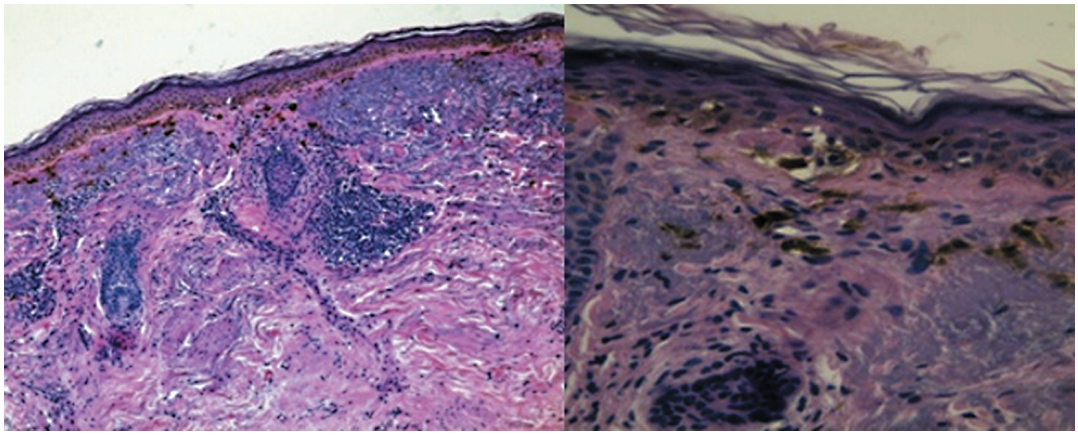

Figure 2
Epidermis: flat. Dermis: superficial perivascular lymphomononuclear infiltration, melanophages, and solar elastosis (H&E 40X). Detail: foci of basal layer vacuolization and keratinocyte apoptosis (H&E 400X).

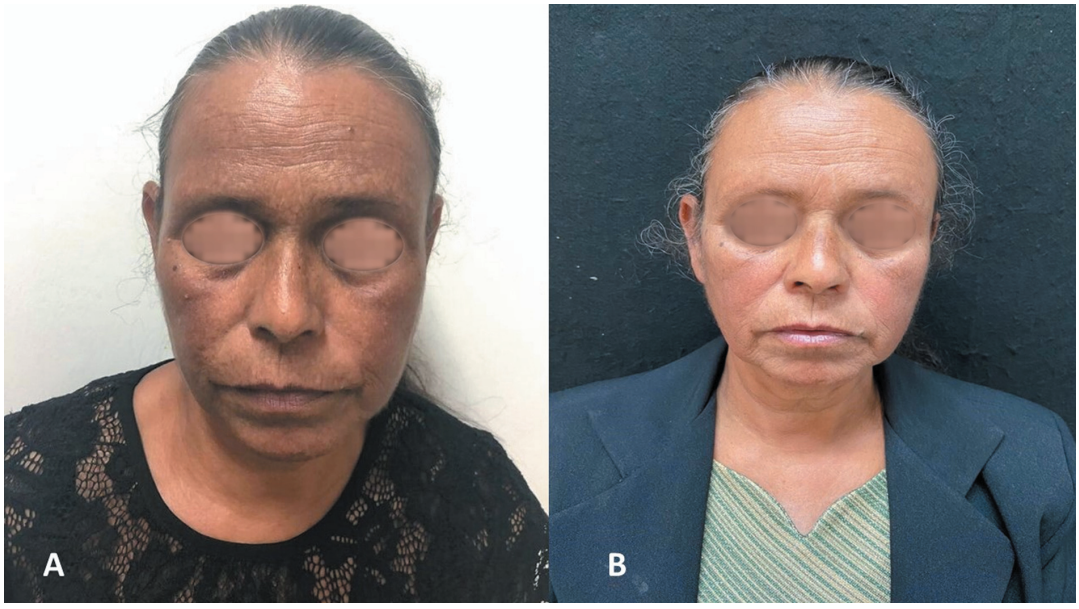

Figura 3
(A) Results after 3 months of treatment, (B) Results after 1 year of treatment

Discussion

PCD is a cutaneous manifestation caused by allergens found in cosmetics and textiles, predominantly affecting middle-aged women with higher Fitzpatrick skin types,[2] as observed in our patient. Cosmetic allergens include red and yellow pigments, aniline, chromium hydroxide, bactericidal agents (carbanilides, linoleic acid), and hair dyes. Textile allergens include optical brighteners, dyes, textile finishes, mercury compounds, formaldehyde, and rubber components.[3] The incidence of PCD is not well-documented, with a significant proportion of cases reported in Japan.[4] Hyperpigmentation in PCD is believed to be caused by frequent and repeated contact with small amounts of sensitizing allergens.[5] According to Nakayama et al., allergen concentrations in commercial products are too low to produce typical eczematous dermatitis, but repeated contact with these substances produces a type IV cytolytic reaction characterized by vacuolar degeneration of the basal cell layer and pigment incontinence on histopathology.[4] Since most cases occur in patients with higher Fitzpatrick skin types, interactions between pigmentation and genetics may be involved in the development of this condition. Clinically, PCD is characterized by diffuse and irregular brownish-gray pigmentation on the face, sometimes preceded by mild erythema (often imperceptible in dark skin) and pruritus. Clinical differential diagnoses include melasma, exogenous ochronosis, and pigmented lichen planus.[6,7] A patch test is essential for a definitive diagnosis and identifying the causative agent. It should be performed using both the standard and cosmetic series, including the patient's personal care products whenever possible, as was done in this case. Treatment involves discontinuing the causative agent and using sunscreens, skin-lightening agents (hydroquinone, azelaic acid, kojic acid, and glycolic acid), retinoids, topical corticosteroids, and procedures such as chemical peels, dermabrasion, microneedling, among others,[7] although results are not always satisfactory.

In conclusion, PCD is a condition that is difficult to diagnose, particularly when the temporal correlation with allergen exposure is not well-established. In suspected cases, patch testing is a crucial tool for reaching a definitive diagnosis and identifying the causative agent, making it a cornerstone of PCD treatment.

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