

Infiltrative Erythemas and Nodules on a Unilateral Cheek Following Inappropriate Use of a Topical Steroid

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ABSTRACT

A 50-year-old Japanese woman referred to us with erythematous nodules on her left cheek. She had been treated with topical corticosteroids on her left cheek at a previous local clinic for 4 years. A skin biopsy specimen from a nodule showed perifolliculitis and folliculitis with a destruction of hair follicle without epidermal involvement. Based on the patient's history of the long-term topical corticosteroids and physical examination, we finally diagnosed this case as unilateral steroid-induced rosacea-like dermatitis (SIRD). She stopped topical steroid and was treated with topical application of benzoyl peroxide. One and a half year after starting the treatment, the nodules were flattened. Use of long-term and only unilateral application of topical corticosteroids probably resulted in unique clinical findings in our case. Given the broad clinical differential diagnosis, our case highlights the importance of appropriate application of topical steroids as well as histopathological analysis on any facial erythematous nodules.

Key words dermatitis; steroid; unilateral

Repeated application of a topical corticosteroid on the face can lead to side effects. Here, we report only unilateral application of topical corticosteroids probably resulted in the unique clinical findings.

PATIENT REPORT

A 50-year-old Japanese woman was referred to us with erythematous nodules only on her left cheek. She had been treated by application of topical corticosteroids on her left cheek at a previous local clinic for 4 years. The nodules had not disappeared regardless of treatment. She had a history of Basedow's disease and mercazole had been prescribed for her. Physical examination revealed infiltrative erythemas and multiple light-red nodules on her left cheek (Figs. 1a and b). The nodules

varied in size up to 15 mm in diameter. A chest X-ray revealed no abnormalities and white blood cell counts were normal. A skin biopsy specimen from a nodule showed perifolliculitis and folliculitis with destruction of hair follicles without epidermal involvement (Fig. 1c). There were non-caseation granulomas with numerous lymphocytes (Fig. 1d). In addition, marked vascular dilatation was seen in the dermis. There were no atypical lymphocytes exhibiting cerebriform or convoluted nuclei, no haloed lymphocytes and no true Pautrier's microabscess in the epidermis, and no fibrosis in the dermis. A monoclonal rearrangement of both T-cell receptor and immunoglobulin heavy chain genes was negative. Based on the patient's history of long-term treatment with topical corticosteroids and results of a physical examination, we finally diagnosed this case as unilateral steroid-induced rosacea-like dermatitis (SIRD). Treatment with topical steroids was stopped and topical application of benzoyl peroxide was started. Topical benzoyl peroxide exhibits antimicrobial effects by damaging cell membrane of bacteria via free radical production in the decomposition of benzoyl peroxide. One and a half years after starting the treatment, the nodules were flattened. Although we did not perform a skin biopsy, hair follicle regeneration would be expected if hair follicle stem cells are maintained in the nodules.

DISCUSSION

Differential diagnoses include pseudolymphoma, malignant lymphoma, leukemia cutis, sarcoidosis and Rosai-Dorfmann disease. The absence of nodular or diffuse lymphocytic infiltrates and the absence of atypical lymphocytes exclude the diagnosis of pseudolymphoma, malignant lymphoma and leukemia cutis. Histopathological features in specific sarcoid lesions are aggregation of epithelioid histiocytes with few or no other inflammatory cells, so-called naked granulomas.¹ In our case, however, the presence of numerous lymphocytes in and around the granulomas excluded the possibility of sarcoidosis. Another histopathological differential diagnosis includes granulomatous rosacea. Based on the patient's history of treatment with topical corticosteroids for 4 years, we could exclude that possibility.²

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Abbreviation: SIRD, steroid-induced rosacea-like dermatitis

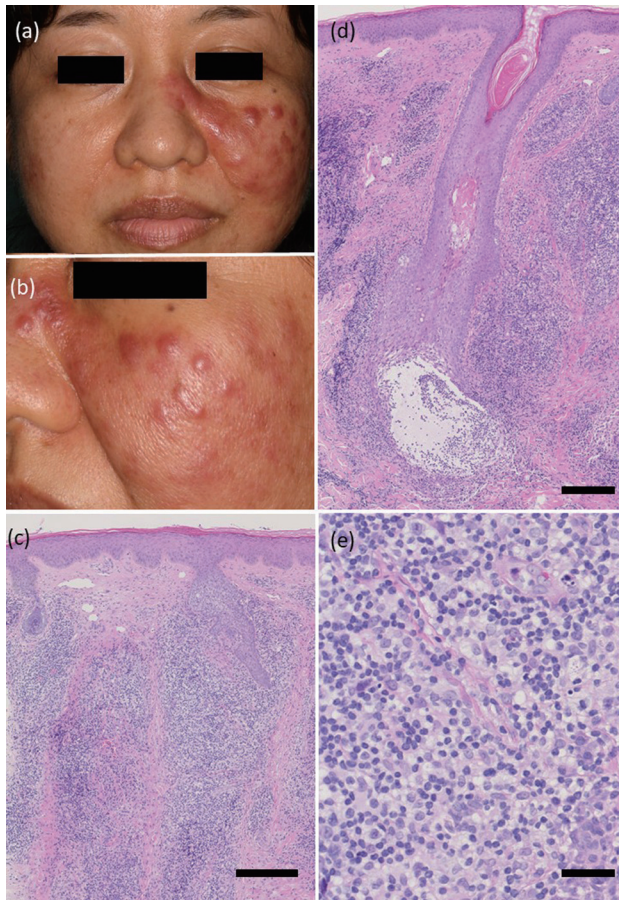


Fig. 1. (a) Infiltrative erythema and numerous light-red nodules on her left cheek. (b) A high power image of the eruptions. (c) Histopathological examination showed granulomas around the follicle and capillary vasodilation (hematoxylin and eosin stain). Bar = 250 μ m. (d) A histopathological image of folliculitis with hair follicle destruction (hematoxylin and eosin stain). Bar = 250 μ m. (e) The granuloma was composed of lymphocytes and histiocytes (hematoxylin and eosin stain). Bar = 50 μ m.

SIRD usually exhibits firm nodules. Although our case showed typical features of the disease, the case was, intriguingly, unilateral in location. Repeated application of a topical corticosteroid on the face can lead to side effects, including SIRD. In general, the primary lesions in SIRD are small, red or flesh-colored, pinhead-sized papules or papulovesicles. Further application of topical corticosteroids induces gradual development of the lesions, resulting in diffusely inflamed, thickened oedematous skin with deep follicular papules and pustules and firm nodules.³ Use of long-term and only unilateral application of topical corticosteroids probably resulted in the unique clinical findings in our case. Given the broad clinical differential diagnosis, our case highlights the importance of appropriate application of topical steroids as well as histopathological analysis for any facial erythematous nodules.

The authors declare no conflict of interest.

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