Granulomatous Periorificial Dermatitis Effectively Managed with Oral Isotretinoin

Sir,

Perioral dermatitis is an uncommon facial eruption of women and children presenting as tiny papules and pustules often in a perioral distribution.\(^1\) It is now more correctly referred to as “periorificial dermatitis” as it frequently involves perinasal and periorcular skin. Granulomatous periorificial dermatitis (GPD) is a distinct facial eruption in prepubertal children characterized by a monomorphic papular eruption occurring in the perinasal, perioral, and periorcular areas.

A 30-year-old unmarried female, saleswoman by occupation, presented with appearance of reddish, scaly lesions on the face since 2 months. There was history of mild photosensitivity associated with the lesions. She did not give a history of introduction of new creams or cosmetic products, drug ingestion, or parlour procedures prior to appearance of lesions. Patient received treatment with oral doxycycline and topical antibacterial creams for 1 month without significant improvement. She had also received topical steroids for 7 days in the recent past with worsening of lesions requiring discontinuation.

Cutaneous examination revealed multiple erythematous, scaly papules and plaques on the supra orbital, peri orbital, perioral, and perinasal area with classical sparing of upper forehead and butterfly area of the face (nose and corresponding area on the cheeks) [Figure 1a and b]. A provisional diagnosis of periorificial dermatitis was considered.

Laboratory investigations of the patient did not reveal any abnormality. Skin biopsy from the inflammatory papule revealed perifollicular and perivascular granulomatous inflammatory infiltrate composed of lymphocytes, epithelioid cells, and giant cells suggesting the diagnosis of granulomatous type of periorificial dermatitis [Figure 2a and b].

Considering unresponsiveness to doxycycline in the past, patient was started on oral isotretinoin 20 mg daily with topical application of metronidazole cream. The patient followed up after 5 days with acute exacerbation of lesions [Figure 3a and b]. She was counselled and advised to continue the treatment. After 3 weeks of treatment with isotretinoin, there was remarkable improvement in the lesions with disappearance of papules and significant reduction in the erythema [Figure 4a-c].

Periorificial dermatitis (POD) is an acneiform eruption of unknown origin, most commonly found around the orifices.\(^1\) POD occurs worldwide, especially in the fair-skinned population; predominantly women between the ages of 15 and 45 years are affected. Peak incidence is in the second and third decade of life. POD is also observed in children, where in contrast to the adult form, males are predominantly affected.\(^2\) The exact etiology is unknown; however, it is related to the impairment of barrier function and dryness of the skin as well as proliferation of the skin flora. It may be induced by topical application\(^3\) or inhalation of corticosteroids, allergic response to amalgam, and mercury in dental fillings,\(^4\) toothpaste containing fluorides,\(^5\) cosmetics, fusiform bacteria,\(^6\) Candida albicans,\(^7\) and Demodex folliculorum.\(^8\) Nikkels and Pierard noted POD in females after stopping oral contraceptives. These patients also had premenstrual flares.\(^9\)

It usually presents as grouped follicular reddish papules, papulovesicles, and papulopustules on an erythematous base with a possible prospect of confluence of lesions, predominantly in perioral distribution with classical sparing of vermillion border of lips.

Granulomatous variant of periorificial dermatitis (GPD) is a well-recognized entity, presenting most commonly in prepubertal children as monomorphic small papules limited to the perioral, perinasal, and periocular regions. The primary lesion is a discrete 1–3 mm dome-shaped flesh-colored, yellow-brown, or red papule. Mild scaling of the lesions or surrounding erythema may occur. Extra facial
lesions had been reported, involving the trunk, extremities, and labia majora and could be generalized. Extra facial involvement does not appear to adversely affect the duration and response to therapy. \[10\]

Diagnosis of POD is often established by histopathology which reveals spongiosis, primarily of the outer root sheath of hair follicles and epidermis of the skin. In addition, variable degree of perifollicular or perivascular lymphohistiocytic infiltrate is also evident. GPD has a characteristic histopathology, with epidermal spongiosis and upper dermal and perifollicular granulomas surrounded by lymphocytes. \[11,12\]

Differential diagnosis of GPD includes POD, granulomatous rosacea (GR), lupus miliaris disseminatus faciei (LMDF), and sarcoidosis.

GR and POD are inflammatory skin conditions characterized by erythematous papules most commonly affecting the face. These entities have been the topic of controversy because of similarity in clinical presentation but they still have variable causes and prognoses. They are both benign and self-limiting conditions. Some clinicians consider POD and its clinical variants on the same spectrum of GR. Clinically and histologically, GPD can be similar to GR but typically has a less granulomatous histology, responds better to treatment, and has a shorter clinical course. \[13\]

For mild cases, in most children and pregnant women, topical therapy is sufficient. Topical anti-inflammatory agents commonly used in the treatment of POD include metronidazole, \[14\] erythromycin, or clindamycin in a nongreasy base (e.g., gel, lotion, cream). Pimecrolimus cream seems to be most effective in steroid-induced perioral dermatitis. \[15\] Topical anti-acne medications such as adapalene \[16\] and Azelaic acid \[17\] can be considered as effective alternatives. Ointments should be avoided due to their greasy base.

Moderate-to-severe forms require systemic treatment. The drugs of choice are doxycycline (or tetracycline) and minocycline. In pediatric patients, management consists of topical metronidazole, oral erythromycin, oral tetracyclines (only in children older than 8 years), or cotrimoxazole. Oral isotretinoin may be considered in unresponsive and granulomatous type of POD. \[12,18\]

The prognosis of GPD is good, and spontaneous resolution usually occurs by a few months to 3 years after onset. Although it is asymptomatic, patients seek for medical help due to cosmetic disfigurement.
Our case is unique in regards to the appearance of GPD in a young female, unresponsiveness to tetracyclines which are usually the first line of management, excellent response to isotretinoin, and initial worsening of the symptoms after isotretinoin similar to that reported in acne vulgaris.

This phenomenon of initial worsening of lesions of periorificial dermatitis after isotretinoin ingestion has never been reported; hence, patient should be informed about this so that treatment can be continued. Secondly, in cases of preceding long-term use of topical steroids, steroid weaning with low-dose 0.1–0.5% hydrocortisone cream can be tried initially to prevent serious rebound phenomenon.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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