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Case Report

Challenge in diagnosis and management of periorificial dermatitis: A case report

Danny Surya, Sri Linuwih Menaldi, Sandra Widaty

Department of Dermatology and Venereology, Faculty of Medicine, Universitas Indonesia- dr. Cipto Mangunkusumo National Central General Hospital, Jakarta.

Abstract Periorificial dermatitis is a disease that is rarely reported. Often misdiagnosed, periorificial dermatitis could affect periorificial area around the mouth, nose, eyes, and genitalia. Specific management needs to be considered because preferred therapy is not the same as other dermatitis.
A 24-year-old female patient presented with itchy red patches around the eyes that had recurred over the past year. The patient had received several treatments but had not shown significant improvement. Previously diagnosed as irritant contact dermatitis, the patient's condition had worsened after receiving therapy. The diagnosis of periorificial dermatitis was then established and the patient received doxycycline 2x100 mg orally and topical clindamycin gel. Application of other topical agents was stopped, and the patient showed improvement. Periorificial dermatitis is a dermatitis that gets worsened by using topical steroids and other topical medications. Diagnosis is made clinically based on a complete anamnesis and physical examination. Treatment begins with zero therapy, which is the cessation of all topical agents used by the patient. Therapeutic choices include topical anti-inflammatory agents such as clindamycin or metronidazole gel, as well as oral doxycycline for more severe cases. Periorificial dermatitis must be distinguished from other dermatitis and requires specific treatment. Diagnosis and management of periorificial dermatitis become a challenge, especially for clinicians.

Key words
Periorificial dermatitis, diagnosis, management, challenge.

Introduction

Periorificial dermatitis is a chronic dermatosis that is generally characterized by erythematous papules, papulovesicles, and papulopustules in the perioral, perinasal, or periorbital areas. The prevalence of periorificial dermatitis has not been widely reported but is more common in women aged 16 to 45 years. The frequency of occurrence of periorificial dermatitis is not known to be related to specific ethnicity, although the granulomatous form is more common in races of African descent.[1,2] The etiology of periorificial dermatitis is not fully understood, but the use of topical steroids often precedes the manifestation of the disease.[1] Other common causes include the use of fluoride-containing toothpastes and excessive use of facial creams and moisturizers, especially those based on petrolatum or paraffin. Physical factors such as ultraviolet light, heat, and wind can also exacerbate the symptoms of periorificial dermatitis. Periorificial dermatitis is often misdiagnosed as other skin conditions, particularly contact dermatitis.[3] A directed history and physical examination are required for the correct diagnosis of periorificial dermatitis.

There are various treatment options for periorificial dermatitis based on the possible etiology. However, most treatment protocols are

Address for correspondence
Dr. Danny Surya
Department of Dermatology and Venereology,
Universitas Indonesia, Jakarta, Indonesia.
Ph: +628151623595
Email: dannysurya.k@gmail.com

based on experience in cases of periorificial dermatitis encountered in daily practice.[4] The first step in the management of periorificial dermatitis is to discontinue all suspected causative topical agents. If necessary, topical and oral anti-inflammatory therapy may also be considered.[5]

Case description

A 24-year-old woman came for treatment with complaints of itching in the facial area since the last year. The patient said that initially reddish patches appeared on her face, especially in the area around the eyes and mouth. Not long after, there was itching on the face. The patient then used fluocinonide ointment that she bought herself, but there was no improvement. Because it did not go away, the patient went to a dermatologist and was given a mixed cream containing steroids. The patient still routinely uses the cream as recommended by the doctor, but the skin lesions do not improve, especially in the area around the eyes. The patient's and family history of atopy was denied.

On physical examination, the patient's general condition and vital signs were within normal limits. Dermatological examination of the bilateral periorbital region revealed multiple erythematous patches of nummular size and well demarcated. The patient was initially diagnosed with irritant contact dermatitis. Patient was advised to stop using the mixed cream and use sunscreen regularly. The medical therapy given was cetirizine 1x10 mg and moisturizing facial soap to be used twice a day. Patients were asked to return for follow-up in the next 7 days.

On the second visit, the patches around the patient's eyes became increasingly red and itchy. There was no use of cosmetics or other topical drugs other than those given on the previous visit. On dermatological examination of the bilateral periorbital region, multiple erythematous papules were found, nummular in size and well demarcated, some with coarse white scales. The patient was then diagnosed with periorificial dermatitis. Skin scrapings were performed on the lesion and no Demodex was found. Patients were advised to stop all topical products applied to the face, including sunscreens and moisturizers. The pharmacological therapy given was doxycycline 2x100 mg and clindamycin gel applied twice a day. The patient was asked to return for follow-up in the next 7 days and on the third visit, the patient's skin lesions had improved significantly.

Figure 1 Clinical photograph of the patient with periorificial dermatitis. A. First visit. B. Second visit, lesions worsened after application of moisturizing facial soap and sunscreen. C. Third visit, improvement was observed after administration of oral clindamycin and doxycycline gel.

Discussion

As the name implies, periorificial dermatitis is an inflammatory skin condition that involves the area around the orifice. This disease was formerly known as perioral dermatitis because it most often involves the area around the mouth. If the area around the nose, eyes, or genitalia is involved, the term used is periorificial dermatitis. Recent studies have shown that periorificial dermatitis is a better term because it is more appropriate to describe the clinical condition of the patient.[4]

The pathogenesis of periorificial dermatitis is not yet fully understood. Histological features resembling rosacea have prompted several clinicians to classify periorificial dermatitis as a form of rosacea. In addition, demodex may play a role in some cases of periorificial dermatitis, as evidenced by its good response to antiparasitic agents. The trigger factors that are most widely known to cause periorificial dermatitis are the use of topical or inhaled corticosteroids, especially fluorinated steroids and fluoride in toothpaste.[6,7] In this case, the most possible cause was the topical steroids used by the patient.

The diagnosis of periorificial dermatitis is usually made based on clinical evaluation, although a biopsy may be indicated in atypical cases. In this patient, the diagnosis is made based on history and physical examination. Skin biopsy is not necessary in this case. Histologically, periorificial dermatitis resembles rosacea with perifollicular and perivascular lymphohistiocytic infiltrates with variable perifollicular granulomas.[4]

Zero therapy is the cessation of the use of all cosmetics, soaps, detergents, moisturizers, astringents, day or night creams, and skin conditioners. This treatment option is usually indicated for milder forms of periorificial dermatitis. Neutral local therapies, such as chamomile tea and physiological solutions can be used. It can take weeks for skin lesions to heal, and the disease will gradually improve once the exogenous triggering factors are stopped.[3,5]

In this case, after the diagnosis of periorificial dermatitis was established, the patient was asked to discontinue all topical products used, including sunscreen and moisturizing facial cleanser. Overuse of moisturizing agents, especially petroleum or paraffin-based ones, can cause follicle occlusion and irritation. As a result, the epithelial barrier is disrupted, causing stratum corneum edema and increased transepidermal water loss (TEWL), exacerbating the dermatitis. Skin irritation due to other products such as sunscreen with a high sun protection factor (SPF) can also cause periorificial dermatitis.[3,8]

In the above patient, oral doxycycline and clindamycin were administered for their anti-inflammatory properties. Topical treatment options for periorificial dermatitis include topical antimicrobial and anti-inflammatory agents, including metronidazole cream or gel, clindamycin gel or lotion, erythromycin gel, and azelaic acid cream. Pimecrolimus cream or tacrolimus ointment have also been used to treat periorificial dermatitis and to reduce flares from discontinuation of topical steroids. Oral tetracyclines are usually used in adolescents and adults, especially in more severe and difficult-to-treat cases. Recently, the antiparasitic agents praziquantel and ivermectin, both topically and orally, have been used successfully in the treatment of periorificial dermatitis.[3,4]

Treatment should be continued until complete remission is achieved, which is usually observed after 8-10 weeks of treatment. Based on the

results of previous studies, recurrence is more likely to occur if the duration of systemic treatment is insufficient. The use of a sub-antimicrobial doxycycline dose of 40 mg per day (modified release) is starting to be recommended, given that there is no risk of antibiotic resistance, and the risk of gastrointestinal side effects is much lower than the standard dose.[3,8]

Periorificial dermatitis generally has a good prognosis and does not leave scar tissue. In all forms of periorificial dermatitis, spontaneous resolution usually occurs with discontinuation of the known precipitating factor. However, prolonged and refractory cases may occur.[9]

Conclusion

Periorificial dermatitis is a disease that is often misdiagnosed. Clinical diagnosis is made primarily by finding lesions in the periorificial area and asking for a history of topical steroid use. Initial management is zero therapy or discontinuing all topical agents in the lesion area. If needed, topical or systemic anti-inflammatory agents can be given in appropriate doses.

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