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Perioral Dermatitis

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Introduction

Perioral dermatitis is a benign eruption that occurs most commonly in young, female adults, consisting of small inflammatory papules and pustules or pink, scaly patches around the mouth. Although the perioral region is the most common area of distribution, this disease also can affect the periocular and paranasal skin. For this reason, it is often referred to as periorificial dermatitis. Topical steroid use to the face can trigger this, and therefore, a primary recommendation for treatment would be discontinuation of steroid application by the patient. Other treatment approaches include topical metronidazole, topical calcineurin inhibitors, and oral tetracycline antibiotics. Perioral dermatitis often responds readily to therapy but can be chronic and recurrent.

Etiology

The exact cause of perioral dermatitis is unknown. It has multiple environmental exposures linked to its etiology.

For some patients, there is an association between topical corticosteroid use and perioral dermatitis.[1] Topical steroid use may precede the eruption, and chronic use of topical steroid increases the risk of developing severe disease.[2] Initially, the facial eruption is responsive to the use of the topical steroid. However, upon withdrawal of the topical steroid, the eruption recurs. This leads to long-term dependency on topical steroid use.[3] Eventually, perioral dermatitis may progress in severity with chronic steroid use and may evolve into a granulomatous subtype of the disease. In addition to topical steroid use, perioral dermatitis has been reported to occur with use of nasal and inhaled corticosteroids.[4][5] The exact mechanism through which topical steroids predispose patients to perioral dermatitis is not understood. It has been postulated that the topical steroids influence the microflora of the hair follicle, which may contribute to the pathogenesis of this condition.[6][7][8][7][6]

Some investigators have proposed infectious sources as a cause for perioral dermatitis, including *Candida albicans*[6], fusiform bacteria[7], and *Demodex* mites[8].

Fluorinated toothpaste use has been associated with perioral dermatitis.[9] Chewing gum and dental fillings also have been associated with perioral dermatitis.[10][11]

Certain cosmetic products, such as combination use of moisturizers and foundations, as well as physical sunscreens, have been etiologic in some patients.[12][13]

Given the female predominance with this condition, hormonal factors have been considered in the etiology. Interestingly, oral contraceptive pills have been associated with improvement of perioral dermatitis.[14]

Epidemiology

Perioral dermatitis commonly affects young adult females, 20 to 45 years of age.[15][16] However, it also has been reported in children.[17] There is no significant difference in frequency of perioral dermatitis among gender or race in pediatric populations.[18]

Pathophysiology

The clinical manifestations of perioral dermatitis occur when perifollicular and perivascular inflammation lead to erythematous papules around the mouth, eyes, and nose. The exact mechanism is unknown. The cause is likely

multifactorial with contributions from genetic, hormonal, and environmental factors.[19]

Histopathology

Skin biopsy of perioral dermatitis reveals a perifollicular and perivascular lymphohistiocytic inflammatory infiltrate with sparse plasma cells. Although there may be follicular spongiosis, typical features of dermatitis are often not present despite this term being used to name the disease.[20] There is a granulomatous variant of perioral dermatitis in which there are dermal epithelioid granulomas and giant cells, in addition to the perivascular and perifollicular lymphohistiocytic inflammation.[21][22]

History and Physical

Patients with perioral dermatitis most commonly present with erythematous-grouped papules that are often bilateral but may be unilateral, surrounding the mouth, eyes, and nose. Since it often affects the skin surrounding other facial orifices, it also has been termed periorificial dermatitis. Other variable findings include scaling, vesicles, and pustules. The vermilion borders of the lips are typically spared of involvement. In the granulomatous variant, flesh-colored to erythematous to yellow-brown papules erupt in the same distribution, although rare involvement of the ears, neck, scalp, trunk, vulva, and extremities has been described.[23][24] Patients often report that the areas of involvement are associated with symptoms of burning or sensitivity although pruritus can also occur.[25] Patients also may mention sensitivity to various skin care products which may exacerbate the rash.[26] Rare cases of granulomatous periorificial dermatitis may have concomitant blepharitis or conjunctivitis; therefore, ophthalmologic evaluation should be considered. Other systemic manifestations are not associated with this disease.[24]

Evaluation

The vast majority of patients with perioral dermatitis are diagnosed clinically, although skin biopsy should be considered with an atypical presentation or lack of response to treatment.

Treatment / Management

First-line treatment options for perioral dermatitis include metronidazole cream or gel, clindamycin lotion or gel, erythromycin gel, topical sulfur preparations, and azelaic acid gel.[27][28][29]. In the treatment of this condition, antibiotics are helpful for their anti-inflammatory properties. Topical calcineurin inhibitors such as tacrolimus ointment or pimecrolimus cream can also be effective.[30][31][32][33] Topical sulfur or sulfacetamide preparations, and topical adapalene have been demonstrated to show improvement.[34][35] Photodynamic therapy using 5-aminolevulinic acid as a photosensitizer has been reported to provide benefit.[36]

If topical therapies are not helpful, or for extensive involvement of perioral dermatitis, oral antibiotics are often helpful. Tetracycline 250 to 500 mg twice a day, doxycycline 100 mg twice a day or once a day, and minocycline 100 mg twice a day or once a day, for an 8-12 week tapering course can be prescribed. When tetracycline antibiotics are contraindicated, as they are in children under age 8, nursing mothers, and pregnant females, erythromycin 250 mg to 500 mg daily can be substituted.[37][38] The goal of oral antibiotic therapy is to provide rapid improvement, but topical therapies should be used concurrently. Topical therapies may not show peak efficacy until 3 months of daily treatment, so the objective is to stop oral antibiotics if possible after 3 months. However, a subset of patients may require longer courses of oral antibiotics if they cannot be controlled with chronic daily topical therapies. In recalcitrant and severe cases, low-dose oral isotretinoin can be used, initially at 0.2 mg/kg per day, then tapering to 0.1 to 0.05 mg/kg per day.[39][40]

It is important to recognize that since perioral dermatitis is not a primary eczematous process, topical corticosteroids should not be used. Although topical corticosteroids may provide a temporary benefit, when they are discontinued, the rash can often flare and worsen. If patients have been using topical corticosteroids to treat the eruption, abrupt discontinuation may lead to rebound flaring, and patients should be forewarned that the condition will likely worsen until it improves with the initiation of appropriate therapies for perioral dermatitis. If a patient has been using a medium to high potency steroid, it may need to be slowly weaned by using a low potency steroid such as hydrocortisone cream.

Differential Diagnosis

Rosacea presents as inflammatory papules and pustules, primarily of the central face, including the nose. Patients often have accompanying telangiectatic erythema with flushing. Many authors view perioral dermatitis as a variant of rosacea, as the 2 conditions typically respond to the same therapies. Clinically, this is distinguished from acne vulgaris by the lack of comedones which are characteristic of acne.

Acne vulgaris presents as inflammatory papules, pustules, cysts, and comedones primarily on the face, but may also affect the chest and back. Patients may have flares of acne secondary to mechanical mechanisms, such as from a helmet chin strap. The distribution of involvement may mimic perioral dermatitis. Adult female acne is characterized by inflammatory papules of the chin and jawline and can have a similar distribution as perioral dermatitis.

Sarcoidosis can also manifest features similar to rosacea and perioral dermatitis with red-brown papules on periorificial regions of the face. Typically, lesions of sarcoidosis are more widespread and can occur on other locations of the skin, and patients often have symptoms of systemic sarcoidosis. A biopsy is helpful in distinguishing sarcoidosis.

Seborrheic dermatitis presents as ill-defined erythematous patches with greasy scale distributed on the eyebrows, glabella, paranasal skin, nasolabial folds, beard, scalp, and chest.

Allergic contact dermatitis can also be considered but tends to present with ill-defined scaling macules, patches, and plaques with possible lichenification. If patients with perioral dermatitis do not improve with conventional treatments, patch testing should be considered to rule out allergic contact dermatitis from skin care or oral care products.

Irritant cheilitis, such as lip licker's cheilitis, presents with erythema and scaling of the cutaneous lip. This typically also affects the vermilion lip and does not spare the vermilion border. In contrast, the vermilion border is spared in perioral dermatitis.

Demodex folliculitis presents with scattered erythematous facial papules and pustules. *Demodex* mites have been implicated in the pathogenesis of rosacea. Unroofing of the pustules followed by microscopy of the purulent material shows numerous *Demodex*.

Tinea faciei presents with erythematous scaling papules and annular plaques and can be ruled out by performing a potassium hydroxide (KOH) preparation and microscopic examination of the scale.

Syringomas and other cutaneous adnexal neoplasms also can mimic perioral dermatitis as these lesions are flesh-colored to erythematous facial papules. A biopsy is helpful for diagnosis.

Prognosis

Perioral dermatitis can be a chronic relapsing condition and often requires long-term treatment.

Consultations

Ophthalmology consultation may be warranted if symptoms of conjunctivitis, such as burning, itching, or tearing, are present.

Enhancing Healthcare Team Outcomes

The majority of patients with perioral dermatitis can be managed effectively and safely by a dermatologist. However, due to potential toxicity from treatments, it is important for there to be open lines of interprofessional communication between the office's physicians, physician assistants, nurse practitioners, nurses, and medical assistants. Patients should be encouraged to contact the office with intolerance of any topical or oral medications. As was discussed, patients may flare with discontinuation of topical steroids, possibly requiring a tapering regimen and frequent follow-up to formulate a treatment plan. Tetracycline antibiotics which are commonly used for treatment also can cause allergic reactions, gastrointestinal upset, and photosensitivity, and therefore, patients should be advised to notify the office with any concerns. (Level V)

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Figures



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