



Oral psoriasis

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Psoriasis is a common skin disease, affecting approximately 2% to 3% of the general population. Classic cutaneous lesions are thick, erythematous, well-demarcated plaques with adherent silvery scale. Plaques characteristically involve the extremities and extensor surfaces in a symmetric fashion. Elbows, knees, sacral area, and scalp are commonly affected. Nail involvement is frequent.

Conversely, oral involvement is rare. Some physicians doubt whether psoriasis affects the oral mucosa, particularly because early reports of oral psoriatic lesions lacked histologic confirmation [1,2]. Nonetheless, many well-documented studies describe oral lesions in patients with psoriasis, and as far back as 1903, Oppenheim reported the first oral psoriatic lesions with confirmatory histologic findings [3]. More recent authors have reviewed, throughout the English and European literature, approximately 60 cases with clinical and histologic features consistent with oral psoriasis [2,4].

In general, oral lesions of psoriasis are probably quite uncommon, appearing more frequently in certain subtypes of psoriasis, specifically generalized pustular psoriasis [5–7]. In this disease, the oral lesions can take the form of a geographic tongue. The geographic tongue may represent the oral counterpart of cutaneous psoriasis. This supposition is based on the almost identical histologic features of the geographic tongue and the cutaneous lesion of

pustular psoriasis, both typified by an intraepidermal neutrophilic pustule.

Naturally, the diagnosis of oral psoriasis is more convincingly made when the clinical course of the oral lesions parallels that of the skin disease [8]. Nevertheless, there are isolated reports of oral psoriatic lesions in patients without concurrent psoriatic skin lesions [2,3]. These oral lesions are histologically consistent with psoriasis vulgaris. Possibly, the oral lesions precede the development of the more classic skin lesions or, alternatively, occur in patients with previous cutaneous psoriasis in remission.

Spectrum of clinical involvement

Psoriasis can affect the oral cavity in several ways.

Temporomandibular joint

Psoriasis is frequently associated with various patterns of arthritis, particularly in patients with HLA-B27 positivity. Although uncommon, temporomandibular joint dysfunction may develop in patients with psoriatic arthritis, appearing as localized jaw pain, swelling, and limitation of movement. Temporomandibular joint involvement is typically unilateral, and onset is in middle age, around the fourth decade. Men and women appear equally affected. Overall, temporomandibular psoriatic arthritis is less frequent than other joint involvement [9].

Lips

Psoriatic involvement of the lips can take several forms. Typical scaly, erythematous psoriatic lesions

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Fig. 1. Typical scaly lesions extending from the cutaneous lip and crossing the vermilion to involve the mucosal surface. (From Bork K, Hoede N, Kortting GW, et al. *Diseases of the oral mucosa and the lips*. Philadelphia: WB Saunders; 1996.)

may extend from the perioral cutaneous lip and cross the vermilion border to involve the mucosal surface (Fig. 1). An exfoliative cheilitis can rarely develop, either with flares of psoriasis vulgaris or, more commonly, with generalized pustular psoriasis (Fig. 2). *Perlèche* (angular cheilitis) with inflammation, erythema, and scaling at the corners of the mouth has also been reported in patients with psoriasis. It is not known whether the incidence of *perlèche* is higher than that in the general population. Interestingly, the authors who noted this prevalence of angular cheilitis found that most patients affected were younger than 35 years, a suggestion that the phenomenon be attributed to psoriasis per se and not to the expected jaw laxity of aging [10].

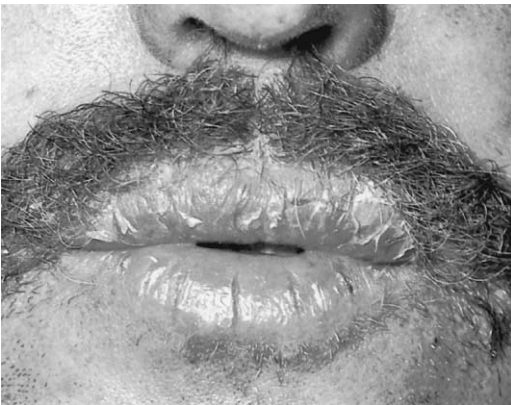


Fig. 2. Severe exfoliative cheilitis affecting the lips of a patient during a flare of pustular psoriasis. (From Bork K, Hoede N, Kortting GW, et al. *Diseases of the oral mucosa and the lips*. Philadelphia: WB Saunders; 1996: with permission.)



Fig. 3. White hyperkeratotic polycyclic lesions on the labial mucosa of a patient with psoriasis.

Mucosal surfaces

Psoriasis affecting the mucosal surfaces of the oral cavity has several clinical patterns. Chronic mucosal plaques, such as those on extremities, do not occur within the mouth. Instead, lesions are typically short-lived and migratory, changing in location and prominence daily, sometimes barely visible and at other times fairly florid. Oral lesions are usually white annular, serpiginous, or polycyclic plaques and papules, occurring on the buccal mucosa most commonly during flares of ordinary psoriasis or with pustular psoriasis (Fig. 3). Erythematous patches occur less frequently (Fig. 4), and “erosions,” which may represent areas of atrophy rather than true ulceration, develop rarely [2]. This pattern of involvement is generally known as *migratory stomatitis* but has been given a number of different names, including *annulus migrans*, *stomatitis areata migrans*, and *geographic stomatitis* [6,11]. These mucosal lesions are similar clinically to the evolving plaques of geographic tongue and hence may also be referred to as *ectopic*

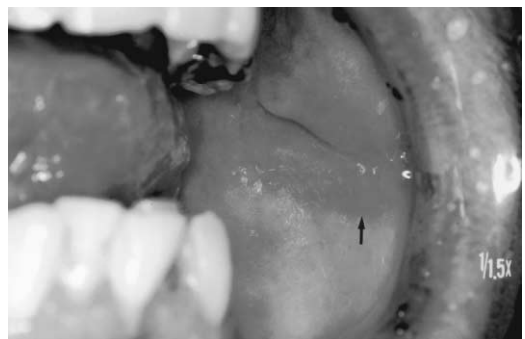


Fig. 4. An erythematous annular plaque of psoriasis (arrow) on the free mucosal surface.

geographic tongue (Fig. 5) [8]. All areas of the oral mucosa can be affected by psoriasis, but the buccal mucosa is most commonly affected. Palatal involvement is rare, and most unusual is involvement of the attached gingivae [3].

These migratory lesions on either the tongue or the mucous membranes have identical histopathologic features, including the characteristic intraepidermal pustule. These similarities lend credence to the thought that both classic geographic tongue and ectopic geographic tongue are manifestations of oral psoriasis [8].

Geographic tongue is fairly common in the general population, affecting 1% to 2% of normal persons, but is more frequently encountered in patients with psoriasis, particularly generalized pustular psoriasis. Studies report incidences of geographic tongue in patients with psoriasis to be anywhere from 5% to 10% [5,8,10,12]. Geographic tongue has also been noted in other dermatologic conditions, including atopic dermatitis, but its incidence is higher in pustular psoriasis than in those conditions [12]. Other tongue disorders, such as fissured tongue, also are more frequent in patients with psoriasis.

Histopathology

The clinical appearance of oral psoriatic lesions is not specific, and supportive pathologic information is necessary. In general, the pathologic changes seen within the mucous membranes parallel those of cutaneous psoriasis. Elongation and thickening of the rete ridges, with overall acanthosis, is noted. Parakeratosis



Fig. 5. Characteristic annular migratory keratotic plaques on the ventral tongue, representing migratory stomatitis in a patient with psoriasis. The lesions are similar in appearance to the typical plaques of geographic tongue, hence the alternative term *ectopic geographic tongue*.



Fig. 6. Histopathologic specimen from the oral mucosa showing acanthotic epithelium with enlargement of the rete ridges and hyperparakeratosis. (Hematoxylin and eosin; magnification $\times 10$)

is evident, and this hyperplastic acanthotic epithelium macroscopically produces the white lesions of the mucosa. The papilla of the lamina propria is elongated and edematous, with thinning of the overlying suprapapillary epithelium and dilatation of superficial capillaries (Fig. 6). These changes mimic those in cutaneous biopsy specimens, and this prominence of the superficial vasculature produces the pinpoint bleeding provoked on skin lesions (Auspitz sign). Similar easy bleeding occurs in the mouth.

One of the most characteristic features of psoriasis is percolation of neutrophils through the upper epithelium. These polymorphonucleocytes may collect in clusters known as *Munro's microabscesses*,

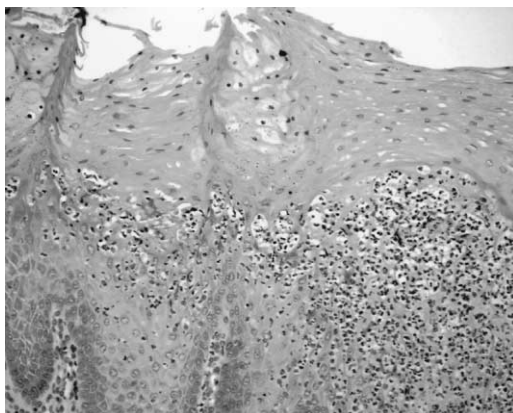


Fig. 7. Neutrophils in clusters within the superficial epithelium form the characteristic intraepidermal spongiform pustule. (Hematoxylin and eosin; magnification $\times 40$)

Table 1
Differential diagnosis of oral psoriatic lesions

	Distinguishing features
Lichen planus	Lichenoid inflammation on hematoxylin and eosin staining; shaggy BMZ immunoreactants on DIF
Syphilis	Positive rapid plasma reagin test result
Lupus erythematosus	Continuous granular deposition of IgG and IgM on DIF
Cicatricial pemphigoid	Characteristic linear BMZ staining on DIF on salt split skin; positive serum titer on IIF
Pemphigus	Intercellular staining pattern of immunofluorescence on DIF; positive serum titer on IIF
Candidiasis	Positive culture
Smoking, trauma, poor-fitting dentures	Supportive history and clinical appearance

Abbreviations: BMZ, basement membrane zone; DIF, direct immunofluorescence; IIF, indirect immunofluorescence.

although they are not essential for the diagnosis of oral psoriasis, nor are they specific (Fig. 7). The lack of a stratum corneum in the nonmasticatory oral mucosa may explain why there are no macroscopically evident pustules in the mouth.

One must remember, however, that these changes are not specific and are similar to other forms of nonspecific mucosal inflammation occurring in patients without psoriasis. As with most dermatologic diseases, clinicopathologic correlation is necessary.

Differential diagnosis

The clinical differential diagnosis of oral psoriatic lesions is broad, because similar mucosal changes may be seen in other inflammatory, blistering, or ulcerative conditions. These include lichen planus, Reiter's syndrome, syphilis, lupus erythematosus, pemphigoid, and pemphigus (Table 1). Infectious causes, such as candidiasis, need to be considered. Other causes of leukoplakia can mimic oral psoriasis both clinically and histologically. Factors to be excluded are habitual smoking; poor-fitting dentures traumatizing the oral mucosa; and other injurious oral habits (such as cheek biting), which may produce similar-appearing lesions. Many of these disorders can be excluded by history or by routine histology, direct immunofluorescence studies, cultures, and the lack of other cutaneous lesions or systemic markers.

Nonetheless, even with appropriate biopsy techniques, a group of so-called *psoriasiform disorders*

remains, and these entities can be difficult to distinguish both clinically and histologically. Included are the oral lesions of psoriasis; Reiter's syndrome; isolated benign geographic tongue; and ectopic geographic tongue (migratory stomatitis). These four conditions are clinically similar and have identical histologic features, with intraepidermal neutrophilic infiltrates with or without Munro's microabscesses. The histologic similarity of geographic tongue, psoriasis, and the cutaneous lesions of oculomucocutaneous disorders, such as Reiter's syndrome, suggests a possible relationship among these psoriasiform disorders. These conditions may represent a spectrum of disease with overlapping features (Table 2). Reiter's syndrome most likely is a reactive phenomenon in genetically predisposed individuals to an antecedent urogenital or gastrointestinal infection. Patients have a triad of urethritis, conjunctivitis, and arthritis. Cutaneous manifestations include keratoderma blennorrhagicum (seen on palms and soles) and mucosal lesions on the genitalia (balanitis circinata). Oral lesions, indistinguishable from oral psoriasis, can occur with similar intraepidermal pustules histologically. Some dermatologists argue that the lesions of keratoderma blennorrhagicum are none other than palmoplantar psoriasis.

Psoriasis, too, may be manifested as a reactive process and is well known to flare after streptococcal infection. Psoriasis also has arthritic manifestations, and the overlap with Reiter's syndrome can be appreciated. There is no consensus, however, on whether these psoriasiform conditions are indeed interrelated, and the relationship is speculative. Although the spongiform pustule is common histologically to these inflammatory conditions, until the pathogenesis of these disorders is better elucidated, this overlap phenomenon will not be completely understood.

Treatment

In general, the oral lesions of psoriasis are asymptomatic or temporary. Consequently, most patients do

Table 2
Oral disorders with the spongiform pustule histologically

Disorder	Associated features
Oral psoriasis	Skin lesions, arthritis
Reiter's syndrome	Skin lesions, arthritis, conjunctivitis, urethritis
Geographic tongue	Atopy
Ectopic geographic tongue	

not present for treatment of oral lesions alone but rather for management of their cutaneous disease, which usually flares synchronously. Management must focus on the removal of irritants and infective agents, which may drive psoriasis by the Koebner phenomenon or provide continued antigenic stimulation to intensify the disease. Measures include the removal and treatment of bacterial plaque and cavities and attention to poorly fitting dentures, other dental appliances, or abnormally sharp or broken teeth.

Palliative treatment includes the use of a topical anesthetic, such as viscous lidocaine or diphenhydramine (Benadryl); a coating mucosal protectant, such as an emollient dental paste (Orabase) or magnesium and aluminum hydroxides (Maalox); and alkaline rinses. For symptomatic patients, topical corticosteroids, such as fluocinonide gel 0.05% (Lidex), can be applied to alleviate symptoms. Concomitant attention should be given to the possibility of simultaneous candidiasis, which may complicate or cloud diagnosis and management. In general, oral lesions resolve with control of cutaneous disease, and specific treatment is often not needed.

Summary

It is strange that the existence of oral psoriasis seems so rare. Other papulosquamous disorders, such as lichen planus, are frequently associated with oral manifestations, yet oral psoriasis is rare given the prevalence of cutaneous disease. One explanation is that oral lesions are asymptomatic and do not come to the clinician's attention. Other explanations, however, are necessary. Epithelial turnover time is significantly increased in psoriatic plaques and may be as rapid as 3 to 7 days, whereas normal epithelial turnover is 28 days. Some have suggested that this abnormally increased turnover time in psoriasis approximates that of the normal regenerative time of the oral epithelium, and this possibility may account for the apparent lack of changes in the oral mucosa of patients with psoriasis [1]. It is also possible that oral lesions of psoriasis are altered both clinically and histologically by other factors within the oral microenvironment and are not recognized [1].

Although controversy has appeared in the literature about whether lesions of oral psoriasis exist, there is sufficient evidence that a subset of patients have oral lesions in association with skin disease. This occurrence is more common in patients with the severe forms of psoriasis, such as generalized pustular psoriasis. The diagnosis of oral psoriasis should

be based on good clinical and histologic evidence, and, in general, the clinical course of the oral lesions should parallel that of the skin disease.

Exclusion of other causes is important, particularly if cutaneous lesions are absent and a diagnosis of isolated oral psoriasis is entertained. Because neither the clinical nor the histologic changes are absolutely specific for psoriasis, the patient requires holistic evaluation. That being said, in day-to-day practice it is most likely not practical to obtain a biopsy of asymptomatic oral lesions for definitive histologic or immunofluorescence studies. The clinician, however, must have a high degree of awareness and pay close attention to the oral mucosa in patients with psoriasis. A thorough examination is imperative, because asymptomatic oral lesions may be found more frequently in patients with psoriasis if clinicians habitually check mucous membranes during the generalized skin examination. Conversely, in patients with troublesome oral lesions, a cutaneous examination that reveals subtle changes suggestive of psoriasis may provide clues to the oral diagnosis. A detailed history remains the cornerstone of diagnosis, because a family history of psoriasis or a history of psoriasis now in remission may guide physicians when they note oral lesions.

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