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ORIGINAL RESEARCH

Oral Manifestation in Patients diagnosed with Dermatological Diseases

[1]Sanjay G Thete, [2]Meena Kulkarni, [3]Atul P Nikam, [4]Tejashree Mantri, [5]Dhiraj Umbare, [6]Sushant Satdive, [7]Dinraj Kulkarni

ABSTRACT

Aim: This study aimed to estimate the frequency of oral lesions in dermatological diseased patients attending the outpatient department of Pravara Rural Medical and Dental College and Hospital, Pravara Institute of Medical Sciences (Deemed University), Loni, Ahmednagar, Maharashtra, India, and the Department of Dermatology at Medical College, Ahmednagar, Maharashtra, India.

Materials and methods: A cross-sectional hospital-based study was conducted in Loni from October 2013 to January 2014. A total of 310 patients (mean age 37.2 ± 16 years, 61.2% males) completed an oral examination and a personal interview. Oral lesions were recorded. Biopsy and smear were used as adjuvant techniques for confirmation. Data were analyzed using Statistical Package for the Social Sciences (SPSS) (version 15.0.1).

Results: Of 310 cases (n = 310) observed for skin lesions, 99 cases were psoriasis (31.93%) and 68 cases were lichen planus (LP; 21.9%), followed by herpes zoster in 44 cases (14.1%), herpes simplex in 13 cases (4.1%), pemphigus vulgaris (PV) in 15 cases (4.8%), erythema multiforme (EM) in 8 cases (2.5%), bullous pemphigoid (BP) in 4 cases (1.2%), chicken pox in 3 cases (0.9%), eczema in 52 cases (16.7%), and nutritional deficiency and candidiasis in 2 cases (Table 1).

Conclusion: The dermatologic diseases studied frequently occur in the oral cavity. Among them, psoriasis was the most common dermatological disease, and LP frequently showed.

Clinical significance: This study also depicts that diagnosis and management of these oral lesions should also be carried out by oral clinicians so as to improve the oral health functioning during the course of the disease. The intraoral examination should be incorporated to the routine of dermatologic assistance as the oral manifestations can represent preliminary signs or can coexist with the diseases.

Keywords: Bullous and cicatricial pemphigoid, Erythema multiforme, Lupus erythematosus, Oral lichen planus, Pemphigus vulgaris.

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[1-3,5,6]Department of Oral Pathology and Microbiology, Pravara Institute of Medical Sciences (Deemed University), Loni Maharashtra, India

[4]Department of Oral Medicine and Radiology, Maharashtra Institute of Dental Sciences & Research, Latur, Maharashtra India

[7]Department of Oral Pathology and Microbiology, M. A. Rangoonwala College of Dental Sciences & Research Centre Pune, Maharashtra, India

Corresponding Author: Sanjay G Thete, Department of Oral Pathology and Microbiology, Pravara Institute of Medical Sciences (Deemed University), Loni, Maharashtra, India, e-mail: sanjaythete59@gmail.com

INTRODUCTION

Dermatologic diseases are represented not only by numerous primary diseases that affect the skin but also by the common cutaneous manifestations of more profound diseases, either visceral or systemic, that may involve the mucosae of the body, including the oral mucosa.[1] Most of the dermatological diseases are confined to the stratified squamous epithelium and thus may involve skin, oral, and other mucosae, such as the nasal, ocular, and genital mucosa. Some patients present with oral lesions only, whereas in others, there may be involvement of skin and other mucous membranes.[2] Mucocutaneous lesions include oral lichen planus (OLP), BP, PV, EM, lupus erythematosus (LE), drug-induced lesions, and others.[3] Some of these mucocutaneous lesions and their oral manifestations have been studied individually. However, large-scale studies on these mucocutaneous lesions have not been reported. A number of these mucocutaneous lesions have been classified under many headings depending on their etiology and presentation.

Accordingly, the autoimmune disorders include PV and bullous and cicatricial pemphigoid, and the connective tissue disorders include LE. Many of these lesions are caused due to drugs, most common being EM. Few are classified as infections, and the most common viral infection presenting as vesiculobullous lesion is herpes virus infection.[4]

Many of these manifest themselves in the oral cavity during their chronic course, either initially or later or simultaneously. According to the literature, LP and herpes infection are the most common mucocutaneous lesions affecting the oral mucosa, followed by EM and PV. The least number was recorded in psoriasis and epidermolysis bullosa. The immunopathologic mucosal diseases as a group present as somewhat commonly occurring inflammatory mucocutaneous lesions. These lesions can appear as erythematous mucosal changes with associated keratoses, ulcerations (erosive areas), desquamation, and occasionally, bullae in the oral cavity.[5]

MATERIALS AND METHODS

This study aimed to estimate the frequency and correlate their oral manifestation in skin diseased patient. The sample consisted of 310 patients diagnosed with dermatological lesions, attending the outpatient department of Pravara Rural Medical College and Hospital, Loni, and Rural Dental College, Loni and the Department of Dermatology at Medical College, Ahmednagar, Maharashtra, India.

The demographic data and presentation of the lesions were recorded on a case history chart. The dermatological lesions were clinically recorded and diagnosed by an experienced dermatologist. Oral examination was done using a sterile mouth mirror, probe, tongue depressor, cotton, and natural light. Photographs of the lesions were taken. The obtained data were statistically analyzed using SPSS version 13.0, 2004; and the variables analyzed were age, sex, the occurrence or not of oral lesions, their location, and characteristics of the oral lesions observed.

RESULTS

Of 310 cases (n = 310) observed for skin lesions, 99 cases were psoriasis (31.93%) and 68 cases were LP (21.9%), followed by herpes zoster in 44 cases (14.1%), herpes simplex in 13 cases (4.1%), PV in 15 cases (4.8%), EM in 8 cases (2.5%), BP in 4 (1.2%) cases, chicken pox in 3 cases (0.9%), eczema in 52 cases (16.7%), nutritional deficiency, and candidiasis in 2 cases (Table 1).

All patients presented one or more cutaneous lesion peculiar to each of the diseases investigated. As for the total amount of oral lesions found (n = 43), these lesions were most commonly found in 19 cases of LP (44.1%), followed by 6 cases of (13.9%) herpes zoster, 4 cases (9.3%) of PV, 3 cases of BP and herpes simplex (6.9%), and 2 cases (9.3%) of EM and psoriasis. All the cases of candidiasis and nutritional deficiency showed oral manifestation. No oral manifestation was seen in eczema cases (Table 2).

Table 1: Distribution of dermatological lesions based on diagnosis (n = 310)

Dermatological lesion	*n (%)*
Psoriasis	99 (31.93)
LP	68 (21.94)
PV	15 (4.84)
Herpes zoster	44 (14.19)
Herpes simplex	13 (4.19)
Eczema	52 (16.77)
EM	8 (2.58)
BP	4 (1.29)
Chicken pox	3 (0.96)
Candidiasis	2 (0.64)
Nutritional deficiencies	2 (0.64)
Total	310

Lichen planus is the most common dermatologic disease with manifestations in the oral cavity. Of 19 cases of LP, 7 cases showed plaque lesions and 9 cases showed papular lesions, while 3 cases showed ulcerated lesions. Among 19 cases of OLP, 17 showed buccal involvement, followed by 2 cases with involvement of the lip.

All four cases of PV presented as an ulcer. Among four cases of PV, two showed buccal involvement. All two cases of EM and herpes zoster presented as an ulcer on the lip. Bullous pemphigoid and herpes simplex also manifested as an ulcer. Nutritional deficiency and candidiasis were manifested as an ulcer with tongue involvement (Table 3 and Fig. 1).

Table 2: Distribution of dermatological lesions with oral manifestation (n = 43)

Dermatological lesion	*With oral lesions (%)*	*Total (%)*
Psoriasis	2 (4.6)	99 (31.93)
LP	19 (44.1)	68 (21.94)
PV	4 (9.3)	15 (4.84)
Herpes zoster	6 (13.9)	44 (14.19)
Herpes simplex	3 (6.9)	13 (4.19)
Eczema	0	52 (16.77)
EM	2 (4.6)	8 (2.58)
BP	3 (6.9)	4 (1.29)
Chicken pox	0	3 (0.96)
Candidiasis	2 (4.6)	2 (0.64)
Nutritional deficiencies	2 (4.6)	2 (0.64)
Total	43 (13.87)	310

$\chi^2 = 67.322$, $p < 0.01$, highly significant

Table 3: Presentation of oral lesions in dermatological diseases (n = 43)

Lesions	*Ulcer*	*Plaque*	*Papules*	*Vesicles*	*Bulla*	*Total*
Psoriasis	2	–	–	–	–	2 (4.6)
LP	3	7	9	–	–	19 (44.1)
PV	4	–	–	–	–	4 (9.3)
Herpes zoster	6	–	–	–	–	6 (13.9)
Herpes simplex	2	–	–	1	–	3 (6.9)
EM	2	–	–	–	–	2 (4.6)
BP	2	–	–	–	1	3 (6.98)
Nutritional deficiencies	2	–	–	–	–	2 (4.65)
Candidiasis	2	–	–	–	–	2 (4.65)
Total (%)	25 (58.14)	7 (16.27)	9 (20.93)	1 (2.32)	1 (2.32)	43

Fig. 1: Oral candidiasis

Table 4: Age- and sex-wise distribution of cases (n = 310)

Age in years	*Male*	*Female*	*Total*
0–10	1	0	1
11–20	21	15	36
21–30	43	34	77
31–40	39	37	76
41–50	32	19	51
51–60	19	11	30
>60	35	4	39
Total (100)	190 (61.29)	120 (38.71)	310

DISCUSSION

Dermatological diseases are not only represented by lesions affecting the skin but also by manifestations that may involve the mucous membranes, including oral mucosa.[6] These lesions commonly manifest as vesicular or ulcerative lesions. It is, especially, important for the dentist to recognize not only the concomitant oral lesions but also the oral manifestations of some of these diseases which may precede the cutaneous lesions, thus enabling the dentist to diagnose and treat initial oral lesions before the appearance of cutaneous lesions.[7]

There have been comparatively few studies dealing with the frequency of these oral lesions. Although there are many studies reported on individual lesions, there are very few studies that have dealt with a group of mucocutaneous lesions together. Moreover, there is no universally accepted classification of these mucocutaneous lesions. A clinician attempting to diagnose these lesions as ulcerative and vesiculobullous diseases of the oral mucosa is confronted with many diseases having similar clinical appearance unlike the classic appearance of the cutaneous lesions because the oral vesiculobullous lesions rupture soon to form ulcers and sometimes become secondarily infected giving a nonspecific appearance.[8]

The present study was undertaken to determine the frequency of dermatological diseases and their oral manifestations. Many studies have been reported to determine the frequency of mucocutaneous lesions. We evaluated 310 patients of dermatological disease for oral involvement. Only 43 cases (13.9%) showed oral manifestations. The most common lesion was psoriasis, followed by LP, herpes infection, PV, BP, and EM. Of 310 cases, majority cases were seen in 190 males (61.29%) than in 120 females (38.71%), with the mean age group of 21 to 40 years (Tables 1 and 4).

Psoriasis

Psoriasis is a common cutaneous lesion affecting 1 to 2% of the general population.[9] It was observed in Das and Chatterjee's[10] study of 2,550 patients that 4% of the patients presented with psoriasis. In the present study also, psoriasis is the most common mucocutaneous lesion (31.93%). Baker and Rayan in their study of 104 patients with cutaneous psoriasis found only 4 cases of oral psoriasis and suggested that although oral lesions of psoriasis are rare, they do exist. Darla also observed only 2 cases of oral lesions among the 200 cutaneous lesions. The present study also observed only 2 patients with oral lesion among the 88 cutaneous lesions (Fig. 2), which is in accordance with Baker and Darla, supporting their view on the rarity of oral lesions.[11]

Fig. 2: Psoriasis leg

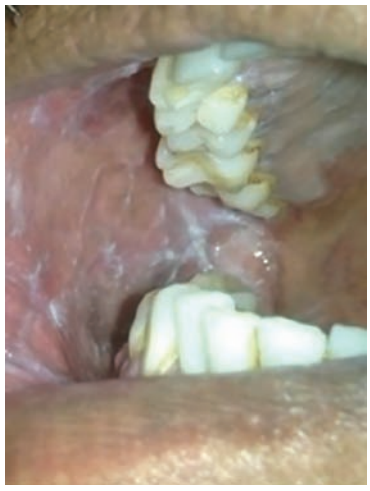

Fig. 3: Reticular LP

Lichen Planus

Lichen planus is one of the most common dermatological diseases that manifest itself in the oral cavity. The characteristics of oral involvement in a large group of patients with OLP were studied by Gorsky et al.[12] It was first described by Wilson in 1869 and is thought to affect 0.5 to 1% of the world's population. The condition can affect either the skin or mucosa or both. About half of the patients with skin lesions have oral lesions, whereas about 25% present with oral lesions alone. It is seen clinically as reticular, papular, plaque-like, erosive, atrophic, or bullous types. Intraorally, the buccal mucosa, tongue, and the gingiva are commonly involved, although other sites may be rarely affected.[13]

In the present study, 68 patients of mucocutaneous LP were diagnosed; 19 patients (44.1%) showed oral lesions. The reticular type of lesion was commonly seen (Fig. 3). Three cases showed erosive LP. Scully observed 197 patients with oral manifestations of LP among which 40% (78 patients) had cutaneous involvement too.[14]

Herpes Infection

Infections herpes simplex virus (HSV)-1 and HSV-2 have worldwide spread and usually affect skin and mucosa. Other herpetic diseases of clinical importance occur through ophthalmic, neurologic, and, more rarely, organ system infection.[10]

In a study by Sudip Das on 2,550 patients with skin diseases, herpes zoster affecting 0.60% (17 patients) has excelled the number of patients in comparison to only 0.50% (13 patients) with chicken pox and 0.31% (8 patients) with herpes simplex.[15]

In agreement to Sudip Das's study, the present study revealed that 14.19% (44 patients) of the study population presented with herpes zoster, followed by 4.19% (13 patients) with herpes simplex and 0.96% (3 patients) with chicken pox.

According to the literature, herpes infection presents itself as vesicular lesions in 80% of the cases with the age, sex, and site being variable, although few authors suggest these lesions to be common in young adults. In accordance, the present study revealed younger-aged females.[16]

In the present study, 13.9% (6 patients) of herpes zoster and 6.9% (3 patients) of herpes simplex presented with oral lesions occurring mostly on the labial mucosa with typical vesicular and crusting lesions.

Erythema Multiforme

Erythema multiforme may present as a wide spectrum of lesions, from mild limiting disease to a severe, widespread, and life-threatening illness. Skin lesions are usually symmetrical and consist of macules or erythematous papules, which develop into classical target or iris lesions. Occasionally, bullae may be seen. Skin lesions are often accompanied by ulceration of mucous membranes, particularly the oral cavity. Oral involvement may precede lesions on other stratified squamous epithelia or may arise in isolation. It typically presents with lesions that progress through diffuse and widespread macules to blisters and ulceration to the lips that become swollen and cracked, bleeding, and crusted. Intraoral lesions typically present on the nonkeratinized mucosae and most pronounced in the anterior parts of the mouth. Recurrences are seen in about 25%; the periodicity can vary from weeks to years; usually, attacks last for 10 to 20 days once or twice a year and usually resolve after about six episodes (2–24) with a mean period of 10 years (2–36 years).[17]

The present study revealed 2.58% (8 patients) of EM, wherein 4.6% (2 patients) had lip lesions. Thereby, the crusted lip lesions of EM should be included in the differential diagnosis of lip lesions.

Fig. 4: Steven–Johnson syndrome (oral involvement)

Fig. 5: Pemphigus vulgaris (oral involvement)

In a survey of 26 cases by Kennett S, all patients presented with crusted lip lesions and only 17 patients presented with typical iris lesions on the extremities affecting commonly the females of the third decade.[18] Wherein the present study, the clinical picture of cutaneous lesions revealed middle-aged patient with typical iris lesions on the extremities. The oral involvement was observed in the younger aged patients as crusted lip lesions (Fig. 4).

Pemphigus vulgaris and bullous pemphigoid

Pemphigus is one of the few potentially fatal diseases affecting the skin and oral mucosa. Various forms of pemphigus produce skin lesions, but two of these, PV and paraneoplastic pemphigus, typically have oral lesions. Pemphigoid is a group of bullous diseases that have a diversified morphologic presentation and affects the skin, oral mucosa, and other mucosal membranes, alone or in combination. Dayan et al[19] suggested that pemphigoid is a group of bullous diseases that have diversified morphologic presentation affecting skin and mucosa. Bullous pemphigoid presents with tense epidermal bullae. It is comparatively more of cutaneous lesion affecting older-aged patients with equal distribution between males and females. However, it is suggested to be a mucosal disorder affecting middle-aged females.

Bullous pemphigoid, in the present study, was observed mostly in middle-aged males with typical bulla. In comparative clinical survey of 278 patients, Laskaris et al[20] observed PV to be the most common lesion with 56.47% (157 patients) followed by BP with 23.74% (66 patients). Supporting Laskaris's study, the present study found 4.84% (15 patients) with PV, 1.29% (4 patients) with BP. The average age as observed by Laskaris was 54.4 years in PV and 65.3 years in BP.

Fig. 6: Bullous pemphigoid

In the present study, all the patients with PV and BP were found to be middle-aged ranging between 20 and 40 years, and out of 15 cases of PV, 4 patients (9.3%) showed ulcerative oral lesion (Fig. 5), whereas 3 patients (6.9%) BP showed similar oral lesion (Fig. 6), although 6 patients of PV gave previous history of oral manifestations.

CONCLUSION

According to the result found, it can be concluded that the dermatologic diseases studied frequently occur in the oral cavity; among them, psoriasis was the most common. It was also observed that a very small percentage of patients presented with oral involvement. This study also depicts that diagnosis and management of these oral lesions should also be carried out by oral clinician so as to improve the oral health functioning during the course of the disease. The intraoral examination should be incorporated to the routine of dermatologic assistance as the oral manifestations can represent preliminary signs or can coexist with the diseases.

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