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PREVALENCE OF ORAL LESIONS IN DERMATOLOGICAL DISEASED PATIENTS

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Abstract

Background: Oral mucosal lesions often serve as early indicators of systemic dermatological diseases, yet remain under-investigated in clinical practice, particularly in low-resource settings. This study aimed to evaluate the prevalence, types, and site distribution of oral mucosal lesions among dermatological patients in Maiwand Teaching Hospital, Kabul, Afghanistan.

Methods: A cross-sectional study was conducted from October ٢٠٢٤ to March ٢٠٢٥, involving ٤٢٣٠٠ patients coming to the Dermatology Department and ٨٥٨ patients diagnosed with oral lesion conditions. Oral examinations were performed to identify co-existing mucosal lesions, categorized by type and location. Data were analyzed using IBM Statistical SPSS Version ٢٥, with descriptive statistics and chi-square tests to assess associations ($p<٠,٠٥$ considered significant).

Results: Females constituted the majority of participants (٦٤,١٪), with the ٤١-٥٠ age group being most affected. Candidiasis was the most frequent oral mucosal lesion (٢٦,٥٪), followed by lichen planus (١٩,٧٪) and pemphigus vulgaris (١٦ %). The tongue was the most commonly involved site in the oral cavity (٦٤.٠%), and plaque formation (٥٦,٢٪) was the most prevalent lesion type. Bullous lesions showed a statistically significant association ($p=٠.٠٢٤$), highlighting their diagnostic importance in vesiculobullous disorders.

Conclusion: Oral manifestations are prevalent among dermatological patients and show diverse clinical presentations. These findings underscore the importance of interdisciplinary collaboration between dermatologists and oral medicine specialists for early diagnosis and integrated management. Incorporating oral examinations can enhance patient outcomes, especially in resource-limited settings.

Keywords: Dermatology, Oral mucosal lesions, Skin disease, autoimmune disease, Oral medicine.

Introduction

Mucocutaneous diseases are a group of disorders commonly encountered in dermatology, often presenting with lesions that affect both the skin and the mucous membranes. In some cases, the earliest or only signs of these diseases are observed in the oral cavity [١, ٢, ٣]. Oral mucosal lesions that impact the oral mucous membrane can manifest in a variety of ways and can be neoplastic, inflammatory, infectious, or traumatic [٤]. Although the majority of these lesions may be benign and just need symptomatic care, they may significantly impact a patient's quality of life [٥]. The most typical clinical manifestations of these conditions are vesicles and bullae [٦].

The clinical presentation of OMLs varies based on the underlying dermatological condition. For instance, lichen planus often manifests as reticular white lesions predominantly affecting the buccal mucosa, while pemphigus vulgaris is characterized by painful erosions and blisters in the oral cavity [٧]. Stevens-Johnson syndrome and toxic epidermal necrolysis are often present with severe oral ulcerations alongside systemic symptoms [٨]. Psoriasis patients may also develop oral lesions, which are influenced by disease severity and treatment approaches [٩].

Although the oral mucosa shares histological and embryological features with the skin, it is subject to a more complex and variable environment. This unique exposure alters the presentation patterns of many mucocutaneous disorders in the oral cavity [١٠]. In many instances, the first signs of disease become visible on the skin and accessible mucous membranes, allowing both dentists and dermatologists the opportunity for early detection [١١]. Oral manifestations may be the first symptom of systemic disease, positioning dentists to play a critical role in early diagnosis. This perspective predisposes the dentist to work alongside a dermatologist to diagnose and treat mucocutaneous disorders. Given the potential morbidity and, in some cases, mortality associated with these conditions, early diagnosis and targeted treatment are essential. A coordinated approach can not only improve patient outcomes but also support more accurate and timely care planning [٧].

Worldwide, there are relatively few epidemiological studies of oral mucosal lesions

Compared to conditions such as periodontal diseases and caries [١٢]. Epidemiological studies focused on site-specific patterns of oral disease are necessary to develop effective oral healthcare strategies, especially as disease prevalence and presentation can vary by region [١٣]. Such research can enhance awareness, inform public health planning, and underscore the importance of multidisciplinary teamwork in the management of oral health disorders.

Materials and methods

This was a hospital-based cross-sectional study conducted in the Department of Dermatology at Maiwand Teaching Hospital, Kabul, Afghanistan. The study was carried out over a six-month period from October ٢٠٢٤ to March ٢٠٢٥. The department serves a large population and receives a wide range of dermatological cases, providing an appropriate setting for this study.

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The study population included all patients who visited the dermatology outpatient or inpatient departments during the study period and were clinically diagnosed with any dermatological condition. A total of ٨٥٨ patients were included in the study, with co-existing oral mucosal lesions. Inclusion criteria involved patients without oral lesions, patients of all ages, and both genders. Those who were unable to provide written informed consent, and those with medical emergencies or who were unwilling to undergo oral examination were excluded from the study.

Data was collected using a structured data collection form. The data collection tool comprised two parts. The first section recorded the patient's demographic details, including age, sex, and hospital registration number. The second section involved a detailed inspection of the oral cavity and perioral structures. Oral examinations were performed using sterile instruments, including mouth mirrors, tongue depressors, and gauze pads, and under adequate illumination, adhering to standard infection control protocols. Oral mucosal lesions were categorized based on their clinical features and associations with specific dermatological conditions. The lesions were classified into the following groups: oral lichen planus, candidiasis, erythema multiform, lupus erythematosus, pemphigus vulgaris, Steven Johnson Syndrome, Toxic Epidermal Necrolysis, and other miscellaneous changes. Each case was evaluated clinically and, where necessary, supported with laboratory findings.

The collected data were entered and analyzed using SPSS software version ٢٥,٠. Descriptive statistics such as frequencies and percentages were used to summarize categorical variables. The Chi-square test was used to determine associations between dermatological diseases and types of oral lesions. A p-value of <٠,٠٥ was considered statistically significant.

Results

A total of ٤٢٣٠٠ patients with dermatological conditions were evaluated in this study and ٨٥٨ of them have oral manifestation. As presented in (Table ١), the majority of the patients were female, comprising ٦٤,١٪ (n=٥٥٠) of the study population, while males accounted for ٣٥,٩٪ (n=٣٠٨). This gender distribution indicates a higher prevalence of dermatological diseases among females. In terms of age distribution (Table ٢), dermatological diseases were observed across a broad range of age groups. The highest frequency was reported in the ٤١–٥٠-year age group (١٧,٧٪, n=١٥٢), followed by the ١–١٠-year (١٧,٠٪, n=١٤٦) and ٣١–٤٠-year (١٦,٧٪, n=١٤٣) groups. The lowest number of cases was observed in patients aged above ٧٠ years (٣,٤٪, n=٢٩).

A variety of dermatological diseases with oral manifestations were identified, as shown in (Table ٣). The most frequently reported oral condition was candidiasis, observed in ٢٦,٥٪ (n=٢٢٧) of patients. This was followed by lichen planus (١٩,٧٪, n=١٦٩), pemphigus vulgaris (١٦,٠٪, n=١٣٧), and erythema multiform (١٢,٦٪, n=١٠٨). Less frequent conditions included herpes simplex infection (٤,٢٪), Stevens-Johnson syndrome (٤,١٪), and pyogenic granuloma (٤,٩٪). Rare cases included bullous pemphigoid (١,٠٪), recurrent aphthous stomatitis (٠,٩٪), and Behçet's syndrome (١,٥٪). These findings emphasize the diversity of dermatological conditions with oral involvement.

Table ١: Prevalence of oral manifestation among dermatologic patients in the dermatology department of MTH

Skin disorder	Frequency	Percent
Oral mucosal lesions	٨٥٨	٢,٠٢
Dermatological diseases	٤١٤٤٢	٩٧,٩
Total	٤٢٣٠٠	١٠٠

Table ٢: Frequency and Percentage of Dermatological Diseases by Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	٣٠٨	٣٥,٩	٣٥,٩	١٠٠,٠
Female	٥٥٠	٦٤,١	٦٤,١	٦٤,١
Total	٨٥٨	١٠٠,٠	١٠٠,٠	١٠٠,٠

Table ٣: Frequency and Percentage of Dermatological Diseases by Age Group

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
١-١٠	١٤٦	١٧,٠	١٧,٠	١٧,٠
١١-٢٠	١٠٩	١٢,٧	١٢,٧	٢٩,٧
٢١-٣٠	٧٤	٨,٦	٨,٦	٣٨,٣
٣١-٤٠	١٤٣	١٦,٧	١٦,٧	٥٥,٠
٤١-٥٠	١٥٢	١٧,٧	١٧,٧	٧٢,٧
٥١-٦٠	١٠٠	١١,٧	١١,٧	٨٤,٤
٦١-٧٠	١٠٥	١٢,٢	١٢,٢	٩٦,٦
>٧٠	٢٩	٣,٤	٣,٤	١٠٠,٠
Total	٨٥٨	١٠٠,٠	١٠٠,٠	١٠٠,٠

Table ٤: Frequency and Percentage of Dermatological Diseases with Oral Presentations

Dermatological Lesions	Frequency	Percent	Valid Percent	Cumulative Percent
Lichen Planus	١٦٩	١٩,٧	١٩,٧	١٩,٧
Herpes Simplex Infection	٣٦	٤,٢	٤,٢	٢٣,٩
Pemphigus Vulgaris	١٣٧	١٦,٠	١٦,٠	٣٩,٩
Bullous Pemphigoid	٩	١,٠	١,٠	١٠٠,٠
Recurrent Aphthous Stomatitis	٨	.٩	.٩	٤٠,٨
Contact Stomatitis	١٤	١,٦	١,٦	٤٢,٤

Erythema Multiform	۱۰۸	۱۲,٦	۱۲,٦	٥٥,۰
Steven Johnson Syndrome	۳٥	٤,۱	٤,۱	٥۹,۱
Candidiasis	۲۲۷	۲٦,٥	۲٦,٥	۸٥,٥
Toxic Epidermal Necrolysis	۲۷	۳,۱	۳,۱	۸۸,۷
Bechet's Syndrome	۱۳	۱,٥	۱,٥	۹۰,۲
Psoriasis	۱۳	۱,٥	۱,٥	۹۱,۷
Discoid Lupus Erythematous	۲۰	۲,۳	۲,۳	۹٤,۱
Pyogenic Granuloma	٤۲	٤,۹	٤,۹	۹۹,۰
Total	۸٥۸	۱۰۰,۰	۱۰۰,۰	۱۰۰,۰

The distribution of oral mucosal involvement is detailed in (Table ٤). The tongue was the most commonly affected site, with ٦٤,۰٪ (n=٥٤۹) of patients showing involvement. This was followed by the labial mucosa (۳۳,٤٪, n=۲۸۷) and buccal mucosa (۲۸,۷٪, n=۲٤٦). Less frequently affected areas included the gingiva (۸,۰٪, n=٦۹), palate (٦,٦٪, n=٥۷), and other locations such as the floor of the mouth and tonsillar area (۳,٤٪, n=۲۹). P-values for site involvement were not statistically significant, suggesting no strong site-specific predilection. The various types of oral lesions identified are listed in (Table ٥). Plaque formation was the most common presentation, observed in ٥٦,۲٪ (n=٤۸۲) of cases, followed by erosions (۳۷,۸٪, n=۳۲٤), ulcers (۱۹,۳٪, n=۱٦٦), and bullae (۱٤,۳٪, n=۱۲۳). Other lesion types such as vesicles (۱۲,٦٪), papules (۱۱,۹٪), nodules (٤,۲٪), and patches (۱,۹٪) were less frequently noted. Of all lesion types, only bullous lesions demonstrated a statistically significant association (p = ۰,۰۲٤), suggesting a potential diagnostic relevance.

Table ٥: Frequency and Percentage of Oral Mucosal Involvement

Site of Involvement		Frequency	Percent	P-Value
Buccal	Yes	۲٤٦	۲۸,۷	.۷۹۰
	No	٦۱۲	۷۱,۳	
Labial	Yes	۲۸۷	۳۳,٤	.٥٤۹
	No	٥۷۱	٦٦,٦	
Palatal	Yes	٥۷	٦,٦	.٦٦۰
	No	۸۰۱	۹۳,٤	
Tongue	Yes	٥٤۹	٦٤,۰	.۷٥۸
	No	۳۰۹	۳٦,۰	
Gingival	Yes	٦۹	۸,۰	.۳۹۸
	No	۷۸۹	۹۲,۰	
Other (floor, tonsillar area, etc.)	Yes	۲۹	۳,٤	.۱٥۷
	No	۸۲۹	۹٦,٦	

Table ٦: Frequency and Percentage of Type of Oral Lesions

Type of Oral Lesion		Frequency	Percent	P-Value
Patch	Yes	۱٦	۱,۹	.٦۹٦
	No	۸٤۲	۹۸,۱	
Ulcer	Yes	۱٦٦	۱۹,۳	.٦٤۱
	No	٦۹۲	۸۰,۷	
Erosion	Yes	۳۲٤	۳۷,۸	.۳۲٦
	No	٥۳٤	٦۲,۲	
Plaque	Yes	٤۸۲	٥٦,۲	.۸۸۳
	No	۳۷٦	٤۳,۸	
Nodule	Yes	۳٦	٤,۲	.۲۷٥
	No	۸۲۲	۹٥,۸	
Papule	Yes	۱۰۲	۱۱,۹	.۲٤۹
	No	۷٥٦	۸۸,۱	
Vesicle	Yes	۱۰۸	۱۲,٦	.۲٦۲
	No	۷٥۰	۸۷,٤	
Bullae	Yes	۱۲۳	۱٤,۳	.۰۲٤
	No	۷۳٥	۸٥,۷	

Discussion

This study aimed to assess the prevalence and types of oral manifestations among patients with dermatological conditions attending Maiwand Teaching Hospital. The findings demonstrate that a substantial proportion of dermatological diseases are accompanied by oral mucosal involvement, with significant variations in lesion type and site of presentation.

The findings of the present study revealed a notable female predominance (٦٤,۱٪) among patients with dermatological conditions presenting oral manifestations. This observation aligns with the results reported by Mandadi et al. who also noted a higher prevalence of oral mucosal lesions in females [۱٤]. Such gender disparity may be attributed to hormonal influences, differences in health-seeking behavior, and sociocultural

dynamics. In contrast, other studies such as those by Keswani et al. [١٥] and Suliman et al. [٧] have reported a higher prevalence of OMLs among older male patients. These discrepancies may reflect differences in the study populations, geographic and environmental factors, or variations in diagnostic criteria and healthcare access. Regarding age distribution, the highest frequency in our study was observed in the ٤١–٥٠-year age group, followed by children aged ١–١٠ years and adults aged ٣١–٤٠ years. While this partially supports previous reports highlighting the impact of age on OML prevalence, the

presence of both pediatric and adult cases underscores
the need for comprehensive, age-appropriate diagnostic and management approaches.

Among the oral manifestations, **candidiasis** was the most prevalent in our study **(٢٦,٥٪),** followed by **lichen planus (١٩,٧٪)** and **pemphigus vulgaris (١٦,٠٪).** The predominance of candidiasis in our sample may reflect factors such as **immunosuppression, broad-spectrum antibiotic use,** or **underlying systemic conditions** like **diabetes mellitus,** all of which are common among dermatologic patients. Interestingly, while our findings highlight candidiasis as the leading oral lesion, several studies report **immune-mediated disorders** such as **oral lichen planus** or **pemphigus vulgaris** as more frequent. For example, Suliman et al. and Kaur & Sheikh, identified **vesiculobullous lesions** as the most prevalent mucocutaneous diseases involving the oral cavity [٧, ١٦]. Similarly, **Jain et al.** emphasized **inflammatory dermatoses**, particularly **lichen planus**, as dominant in oral mucosal disease presentations **[١٧].** Another study by Babu et al. reported psoriasis as a frequent finding in their study [٨]. Our findings also contrast with the study by **Karki et al.** which reported **aphthous ulcers** (٣١,٠٦٪) more prevalent. However, **lichen planus** was still frequently observed, similar to our findings, where it accounted for ١٩,٧٪ of the cases **[١٨].**

In contrast to many earlier studies, the tongue was the most frequently involved site in our study (٦٤,٠٪), followed by the labial mucosa and buccal mucosa. While previous research such as Suliman et al. [٧] from Sudan also reported the tongue as the most commonly affected site in dermatologic patients, several other studies highlight the buccal mucosa as the primary site of involvement. For instance, Silva et al. [١٩], Alharbi & Aboalela [٢٠], describe the buccal mucosa as the most frequently affected oral region in mucocutaneous diseases, particularly in conditions like OLP and pemphigus vulgaris, where characteristic features such as Wickham's striae and mucosal blistering are most pronounced. Similar findings were observed in other studies [٢١, ٢٢, and ٢٣]. These differences may be due to variations in population demographics, disease distribution, dietary habits, or diagnostic criteria across regions. Nonetheless, our findings stress the importance of thoroughly examining the tongue, a site that may be under-recognized in routine evaluations, despite being a common location for early lesion presentation. Regarding lesion morphology, plaque-like formations were the most prevalent (٥٦,٢٪), followed by erosions and ulcers. Interestingly, bullous lesions were the only type with a statistically significant association ($p = ٠,٠٢٤$), pointing to their relevance in identifying vesiculobullous disorders such as pemphigus vulgaris and bullous pemphigoid. The recognition of such lesions is vital, as early mucosal involvement may precede cutaneous symptoms and provide critical diagnostic clues.

These findings emphasize the interdisciplinary nature of managing mucocutaneous disorders, calling for collaboration between dermatologists, oral medicine specialists, and general practitioners. The oral cavity can often serve as an early window into systemic disease, and prompt recognition of OMLs can facilitate timely diagnosis and intervention, potentially improving long-term patient outcomes. Limitations of this study include the lack of histopathological confirmation for all cases, the inability to perform advanced diagnostic tests due to resource constraints, and the cross-sectional design, which limits causal inferences. Despite these limitations, the study provides valuable epidemiological insights into the spectrum of oral manifestations among dermatological patients in a clinical setting. Public health efforts should aim to integrate oral health screening into routine dermatological evaluations, especially in primary care and community health settings. Educational campaigns targeting both the public and healthcare providers can help in recognizing early warning signs of systemic diseases manifesting orally. Moreover, addressing underlying risk factors such as poor oral hygiene, nutritional deficiencies, tobacco use, and immunosuppression is critical for prevention and early intervention.

There are several limitations in this study; this study was conducted at a single tertiary care hospital, which may limit the generalizability of the findings. The cross-sectional design does not establish causal relationships, and some diagnoses were made clinically without confirmatory histopathological or microbiological tests due to limited resources. Additionally, data on systemic conditions, medications, and habits were not collected, and inter-observer variability may have affected assessments. Despite these limitations, the study offers valuable baseline data on oral manifestations in dermatological patients and emphasizes the need for integrated, interdisciplinary care to improve early diagnosis and patient outcomes.

Conclusion

This study highlights the significant prevalence and diversity of oral mucosal lesions among patients with dermatological conditions. The high frequency of conditions such as candidiasis, lichen planus, and pemphigus vulgaris, along with the predominance of lesions on the tongue, underscores the diagnostic value of routine oral examinations in dermatology clinics. Given that some oral lesions may serve as early indicators of systemic diseases, timely identification can facilitate prompt intervention and improve patient outcomes. The findings also emphasize the importance of interdisciplinary collaboration between dermatologists and oral healthcare professionals. Future studies with broader geographic representation and confirmatory diagnostics are recommended to further explore these associations and guide clinical practice.

Ethical Considerations

Ethical approval for this study was obtained from the Research Committee of Kabul University of Medical Sciences on ٢٨/٧/١٤٠٣ (٠٣/١١/٢٠٢٤), protocol ١٠, agenda no ٢. Written informed consent was obtained from all participants before enrollment. Confidentiality and anonymity were maintained by using hospital registration numbers instead of patient names. A procedural guideline was developed to ensure minimal discomfort during examinations. All diagnostic procedures were performed under expert supervision by trained personnel to guarantee patient safety and data integrity.

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Author Contribution: Following recommended guidelines for author contributions in research publications, the roles of each author are outlined as follows:

١. Played a primary role in the conception and design of the study, and took the lead in drafting and revising the manuscript.

٢. Was actively involved in data collection, analysis, and interpretation, and contributed substantially to shaping the theoretical framework and research methodology.

٣. Ensured the accuracy and reliability of the analytical methods, performed key computations and data analyses, and supported the critical review and refinement of the manuscript.

٤. Contributed an important role in conducting the discussion

٥. As a professor of dermatology made a significant contribution to the clinical diagnosis of disease.

٦. Played an active role in data analysis.

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