

Original Research Article

Clinical study of oral mucosal lesions in patients attending dermatology outpatient department in a tertiary care centre

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ABSTRACT

Background: Oral mucosa reflects the general health of an individual. In certain systemic diseases oral cavity may be affected first or it could be the only clue to diagnosis. Hence skin examination is never complete without the examination of mucosae. Aims and objectives were to find out the frequency and diversity of oral mucosal lesions in patients attending Dermatology, Venereology and Leprosy (DVL) outpatient department (OPD).

Methods: This was a hospital based observational study. All patients with oral mucosal lesions fulfilling the inclusion & exclusion criteria were enrolled in the study. Detailed history, physical examination and clinical photographs were recorded for all the patients.

Results: The prevalence of oral mucosal lesions among dermatological patients is 1.04% with a female predilection and the mean age was 38.44±17.30. Majority of the patients belonged to the age group of 31-60 years. Established risk factors for developing oral lesions like tobacco and beetle nut use were found in only 24% and 16% of the patients respectively. Twenty% (21%) of the patients were diabetic and the commonest oral lesions in them was oral candidiasis. Eighteen% (18%) of the patients presented with only oral complaints, while 82% of patients came with skin complaints and their oral lesions were incidental findings. Out of 82 patients with dermatological diseases specific mucocutaneous diseases were seen in 44% of patients. Most common dermatological diseases seen were vitiligo, lichen planus and pemphigus vulgaris.

Conclusions: Knowing the prevalence of oral lesions as a part of mucocutaneous disorders would help sensitise other specialities the need to examine oral cavity in order to attain appropriate and early diagnosis.

Keywords: Oral mucosa, Oral lesions, Candidiasis

INTRODUCTION

Oral mucosa is a part of the skin with structural similarity to it both histologically and embryologically. Oral mucosa reflects the general health of an individual. In certain systemic diseases the oral cavity may be affected first or it could be the only sign/symptom to clinch the diagnosis,

the reason why examination of skin is never complete without the examination of oral mucosa.¹

Many dermatological conditions present with oral involvement like infections, autoimmune disorders, dermatitis, drug reactions, sexually transmitted diseases etc. The lesions can appear as erythematous mucosal

changes with associated keratoses, ulcerations/erosive areas, desquamation, vesicles and bullae in the oral cavity.² Studies centring the prevalence of oral lesions among dermatology patients are less. Knowing the prevalence of oral lesions as a part of mucocutaneous disorders would help sensitise other specialities the need to examine oral cavity in order to attain appropriate and early diagnosis.

Aim of the study was to evaluate the frequency and diversity of oral lesions in patients attending Dermatology, Venereology & Leprosy (DVL) outpatient department (OPD) at a tertiary care centre.

METHODS

This was a prospective observational study, which was conducted among the patients attending the OPD of DVL at Mahatma Gandhi Medical College and Research Institute, Puducherry from January 2016 to April 2017 after approval by the Institutional Ethics Committee (IHEC reg. no: ECR/451/Inst/PY/2013). By convenience sampling all patients attending OPD during the study period were subjected to clinical examination for oral mucosal lesions.

Inclusion criteria

All patients attending DVL OPD with specific oral lesions were included in this study.

Exclusion criteria

Patients with restricted mouth opening and staining of teeth and mucosa were excluded from the study.

All consecutive patients attending DVL OPD satisfying inclusion and exclusion criteria were included in the study. Written informed consent was obtained from those willing to participate in the study. A detailed history with reference to onset, type and characteristics of lesions was taken, followed by clinical and systemic examination. Diagnosis was established by history and clinical examination. Clinical photographs of the lesions were taken after informed consent.

All data were entered into a data collection proforma and were entered into Microsoft Excel 2011. Statistical analysis was carried out using statistical package of social sciences (SPSS) version 19.0 (IBM SPSS, US) software with regression modules installed. Descriptive analyses were reported as mean and standard deviation of continuous variables.

RESULTS

During the study period, a total of 10,000 patients attended the OPD and these patients were screened for specific oral mucosal lesions, of them 100 patients had oral mucosal lesions with a prevalence of 1.04%.

Patient profile

Out of 100 patients with oral mucosal lesions, 46 were males and 54 were females with a male to female ratio of 0.85: 1. The mean age of the study population was 38.44 ± 17.30 . Out of the 100 patients 24 (24%) patients had history of tobacco use and 76 (76%) did not give history of tobacco use. Also 17% had history of beetle nut chewing. Twenty nine (29%) patients had diabetes mellitus. In our study, out of the 100 patients with oral mucosal lesions, 16 (12.08%) patients had oral candidiasis (Figure 1) followed by 14 (15.38%) patients with mucosal vitiligo (Figure 2), 11 (12.08%) patients with oral lichen planus (Figure 3) and 7 (7.69%) patients with aphthous ulcer (Figure 4). Table 1 shows the frequency of different oral mucosal lesions among the 100 patients. Herpes labialis presenting as grouped vesicles along the corner of mouth (Figure 5) was seen in 6.59% of the patients.

Table 1: Frequency of oral mucosal lesions.

S. no.	Oral mucosal lesions	Frequency	%
1	Oral candidiasis	16	17.58
1	Mucosal vitiligo	14	15.38
2	Oral LP	11	12.08
3	Aphthous ulcer	7	7.69
4	Herpes labialis	6	6.59
5	Pemphigus vulgaris	5	5.49
6	Actinic cheilitis	3	3.29
7	Angular cheilitis	3	3.29
8	Leukoplakia	3	3.29
9	Toxic epidermal necrolysis	3	3.29
10	Systemic lupus erythematosus	3	3.29
11	Geographic tongue	2	2.19
12	Glossitis	2	2.19
13	Oral submucosal fibrosis	2	2.19
14	Dystrophic eb	2	2.19
15	Luekokeratosis	1	1.09
16	Mycoplasma mucositis	1	1.09
17	Bullous pemphigoid	1	1.09
18	Herpetic gingivostomatitis	1	1.09
19	Lip lick dermatitis	1	1.09
20	Xeroderma pigmentosum	1	1.09
21	Scrotal tongue	1	1.09
22	Mucocele	1	1.09
23	Leukokeratosis nicotina palati	1	1.09

Out of the 100 patients, 82 (82%) of patients had skin manifestations along with oral lesions whereas 18 (18%) did not have any skin manifestations. Thirty six (43.9%) patients had specific dermatoses affecting skin and mucosa while the remaining 46 (56.09%) had unrelated dermatological conditions causing oral and skin lesions. Among those with specific dermatological disorders causing oral and skin lesions, the most common ones were

vitiligo (27.78%) and lichen planus (25%). The frequency of various specific dermatoses associated with mucosal lesions is represented in Table 2. Pemphigus vulgaris causing oral erosions involving palate, buccal mucosal and lips were seen in 13.88% patients (Figure 6).

Table 2: Frequency of specific dermatoses affecting skin and mucosa.

S. no.	Disease	Frequency	%
1	Vitiligo	10	27.77
2	Lichen planus	9	25
3	Pemphigus vulgaris	5	13.88
4	Toxic epidermal necrolysis	3	8.34
5	Systemic lupus erythematosus	3	8.34
6	Geographic tongue	2	5.55
7	Dystrophic epidermolysis bullosa	2	5.55
8	Xeroderma pigmentosum	1	2.78
9	Mycoplasma associated mucositis	1	2.78



Figure 1: Oral candidiasis.



Figure 2: Depigmented macules seen over the lower lips.

Among the 100 patients in our study, 9 patients had more than one type of oral lesion such as 4 had angular cheilitis with atrophic glossitis (Figure 7), 1 patient each had

leukokeratosis with angular cheilitis, Behcet's disease with oral candidiasis, oral pemphigus with candidiasis, oral candidiasis with glossitis and angular cheilitis with glossitis with herpes labialis.



Figure 3: White lacy pattern seen over buccal mucosa - oral lichen planus.



Figure 4: Multiple shallow ulcers with erythematous base - aphthous ulcers.



Figure 5: Multiple grouped vesicles seen at mucocutaneous junction - herpes labialis.

In our study, out of 19 oral candidiasis patients 15 (79%) patients had diabetes mellitus (DM) and rest 4 (21%) patients had human immune deficiency virus (HIV) as predisposing factors for the development of candidal infections.



Figure 6: Oral erosions seen over hard palate, buccal mucosa and lips - pemphigus vulgaris.



Figure 7: Oral candidiasis presenting as atrophic glossitis and angular cheilitis.

DISCUSSION

Apart from being a clinical clue to certain systemic illness, oral mucosal lesions also occur as a part of various specific skin disorders which could be of infectious, autoimmune or inflammatory aetiology etc. or an adverse drug event. Prompt screening for oral mucosal lesions helps in timely diagnosis and treatment.³

Prevalence of oral mucosal lesions in patients who attended DVL OPD in our hospital was 1.04%. This was comparable to previous other studies done by Babu et al, Roy et al and Ramirez et al which showed the prevalence of 1.82%, 1.26% and 2.8% respectively.^{1,4,5}

In our study among 100 patients with oral mucosal lesions females were 54% and males were 46% with a female to male ratio of 1:0.85. Our results were similar to the studies done by Babu et al and Ram et al which showed female to male ratio of 1:0.83 and 1:0.86 respectively.^{1,6}

Studies done by Anand et al and Shivakumar et al showed male predilection with a male to female ratio of 1.41:1 and 1.53:1 respectively which was discordant from our study.^{3,7} The mean age of our study population is 38.44 ± 17.30 years which was comparable with studies

completed by Keswani et al and Suliman et al with a mean age of 37.2 and 37.1 respectively.^{8,9}

In the current study vast number of patients fell into the age group of 31-40 years (25%) and 51-60 years (24%). According to Roy et al and Babu et al most patients in their study belonged to the age group 31-40 and the percentages were 24.67% and 31.3% respectively which was almost similar to our study.^{1,4}

Occupation

In our study, majority of them were housewives 26% followed by 20% each which were students and daily wage workers respectively. According to Gulati et al and Babu et al majority of patients in their study belonged to students, housewives and labourers which is comparable with our study.^{1,6}

Tobacco and beetle nut

In our study only 24% of patients had positive history of using tobacco and 76% did not have the history. Likewise 16% of patients had history of beetle nut use where as 84% did not have. According to study done by Shivkumar et al history of tobacco use was 24% which is similar to our study.³ In a study done by Mishra et al history of smoking was there in 34.7% and history of chewing beetle nut was 18.1% which is almost analogous to our study.¹⁰ However our results were not comparable with study done by Ali et al in which 70.1% of patients had history of smoking.¹¹

In our study, percentage of tobacco and beetle nut use was significantly less compared to other studies. This may be because of exclusion of staining of mucosa and teeth in our study which is frequently noted in patients with history of tobacco and beetle nut use.

Diabetes mellitus

In our study, 21 (21%) patients had diabetes mellitus and among these 21 patients most common oral lesions seen were oral candidiasis in 57% followed by mucosal vitiligo 28% and leukoplakia 12%. According to study done by Silva et al and Vasconcelos et al frequency of oral mucosal lesions in diabetes mellitus was 78.4% and 80%.^{12,13}

Al-Maweri et al studied that common oral lesions in diabetics to be geographic tongue, denture stomatitis and angular cheilitis.¹⁴ Belazi et al found the frequency of oral candidiasis in patients with diabetes mellitus to be 13.7 to 64% which was consistent with our study.¹⁵

Dermatological conditions and mucosal lesions

In our study, among the 100 patients with oral lesions 82 (82%) of patients had skin manifestations whereas 18 (18%) patients presented with only oral diseases. In 82 patients who presented with skin lesions only 44% had specific mucocutaneous manifestations of dermatological

diseases and rest 56% had dermatological condition unrelated to the mucosal lesions.

According to study done by Ramirez et al percentage of patients having specific oral lesions in mucocutaneous diseases was 35% which was almost similar to our study.⁵ But according to studies done by Keswani et al, Shivkumar et al, Gulati et al and Babu et al the percentage of patients with specific oral lesions in mucocutaneous diseases were ranging from 1.7-23.1% which was slightly lower than our study.^{1,3,6,8}

Among the 82 (82%) patients with skin lesions in our study, the commonest was fungal infections 11 (13.41%) followed by bacterial skin infections 10 (12.19%), vitiligo 9 (10.97%), lichen planus 8 (9.75%) and pemphigus vulgaris 7 (8.53%). According to a study done by Anand et al the most common skin diseases diagnosed were bacterial and fungal infections, eczemas and lichen planus which is comparable with our results.⁷ Suliman et al, in his study among those with oral lesions, found the prevalence of fungal infections to be 9.6%, and that of vesiculobullous disorders to be 9.9% which is similar to our study.⁹

Shivkumar et al found the most common dermatological diseases among those with oral lesions to be psoriasis and fungal infections each 20.6% which is varying with the results of our study.³

Oral mucosal lesions

In our study among 100 patients with oral mucosal lesions 91 patients had single oral lesion and 9 patients had more than 1 oral lesion. Out of 91 patients with single oral mucosal lesions the most common manifestations are oral candidiasis 17.58% followed by mucosal vitiligo 15.38%, oral lichen planus 12.08%, aphthous ulcers 7.69% and 6.59% vesiculobullous disorders.

According to a study done by Roy et al, among those with mucosal lesions, oral candidiasis was seen in 16.07% and oral LP in 12.77%.⁴ These findings are consistent with our study. Keswani et al found aphthous ulcer to be the most common oral lesion comprising of 31.4% of patients examined for oral lesions.⁸

In our study, mucosal vitiligo was second common finding seen in about 15.38% which is similar to Shah et al in which the frequency of mucosal vitiligo was 14.8%.¹⁶ Pemphigus vulgaris was seen in only 5.59% of patients which is comparable with studies done by Goncalves et al and Suliman et al⁹ in which the frequency of patients with pemphigus vulgaris was 7% and 4.8% respectively.^{9,17}

In our study, 7.69% of patients had aphthous ulcers which is comparable with other studies done by Mathew et al and Ramirez et al⁵ which showed the frequency of about 2.1% and 6.7% respectively.^{5,18} However a higher percentage of occurrence of aphthous ulcers was seen according to studies done by Roy et al and Keswani et al.^{4,8} Aphthous

ulcers were seen in 28.57% and 31.4% of patients with mucosal lesions in dermatologically diseased patients respectively.

In our study, systemic lupus erythematosus (SLE) and toxic epidermal necrolysis (TEN) was seen in only 3.29% of patients which is almost similar to study done by Babu et al in which the frequency of SLE was 3% and TEN was 4.6% respectively.¹

In the current study, only 3.29% of patients had leukoplakia which is almost similar to study done by Suliman et al, Mathew et al and Gulati et al in which leukoplakia was seen in 3.1%, 1.59% and 1% respectively among the incidental oral findings among those visiting dermatology/dental OPD.^{6,9,18} However according to study done to assess the prevalence of oral leukoplakia among Japanese patients by Ikeda et al percentage of patients with leukoplakia was 25% which is higher than our study.¹⁹

Oral submucosal fibrosis is seen in 2.19% of patients in our study which is similar to study done by Mathew et al in which the frequency was 2.01%.

Limitations

Prevalence reported may be less than the actual prevalence as this was a hospital based study where the department visited by the patient for oral lesions could be varied.

CONCLUSION

The prevalence of oral mucosal lesions in patients attending DVL OPD was 1.04%. In our study, out of 100 patients with oral mucosal lesions. There was a female predilection with male to female ratio of 0.85:1. Majority of the patients belonged to the age group of 31-60 years. Established risk factors for developing oral lesions like tobacco and beetle nut use was found in 24% and 16% of the patients respectively. Majority of patients (91%) had single oral lesion and the commonest among them were oral candidiasis (17.58%) followed by mucosal vitiligo (15.38%), lichen planus (12.08%). Twenty one percent (21%) of the patients were diabetic and the commonest oral lesions in them were oral candidiasis (57%), mucosal vitiligo (28%) and leukoplakia (12%). Eighteen percentage (18%) of the patients presented with only oral complaints, while 82% of patients came with skin complaints and their oral lesions were incidental findings. Out of 82 patients with dermatological diseases specific mucocutaneous diseases were seen in 44% of patients. Most common mucocutaneous disorder was vitiligo (27.7%) followed by lichen planus (25%) and pemphigus vulgaris (13.8%).

Oral cavity examination is often overlooked during work up of patients in the OPD. There is enough evidence that oral cavity can provide early and sometimes the only clues to diagnosing certain dermatological disorders/systemic diseases. Hence ascertaining the prevalence of various oral

mucosal lesions and its significance would encourage all clinicians to perform prompt oral cavity examination.

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Ethical approval: The study was approved by the institutional ethics committee

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