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Dr. Nitin Chaudhari

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Dr. Palak Deshmukh

Department of Dermatology, D. Y. Patil Medical College and Research Center, Pune, Maharashtra, India

Dr. Umesh Thombe

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Dr. Abhishek Patokar

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Dr. Sanchita Singhal

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Dr. Pallavi More

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Dr. Prajna Satpathy

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

Corresponding Author:

Dr. Umesh Thombe

Department of Dermatology, Smt. Kashibai Navale Medical College & General Hospital, Off Mumbai-Bangalore Highway, Narhe, Pune, Maharashtra, India

An observational study of various oral manifestations in 100 patients visiting a tertiary care hospital

Dr. Nitin Chaudhari, Dr. Palak Deshmukh, Dr. Umesh Thombe, Dr. Abhishek Patokar, Dr. Sanchita Singhal, Dr. Pallavi More and Dr. Prajna Satpathy

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Abstract

Context: The oral lesions may be the earliest manifestation of the dermatological diseases or the most significant clinical appearance of some dermatological diseases and occasionally lesions occur simultaneously in the skin as well as mucous membrane.

Aims: To study the clinical patterns and frequency of oral lesions.

Settings and Design: A descriptive observational study.

Methods and Material: It was a hospital based observational study, that was conducted in the department of dermatology of a tertiary care hospital over a period of 24 months. A total number of 100 individuals with oral lesions were included in the study. A detailed history was taken and complete clinical examination was done. Histological and other investigations were done only if essential to establish the diagnosis.

Results: In this study, we studied oral lesions in 100 patients, showing female preponderance 53% cases. Most of the patients belonged to 3rd and 4th decade of life 20% and 26% respectively. Among 37 cases of recurrent oral ulcers seen in the study comprised 37.83% cases each of pemphigus group and herpetic stomatitis. The remaining 24.32% were of recurrent aphthae. The 30 cases of oral ulcers seen in the study comprised 33.3% cases, aphthous 30%, neoplastic 23.3%, local trauma 13.3%. The 9 cases of drug induced oral ulcers seen in this study comprised 22.2% each of drug induced cheilitis, SJS, TEN, perioral dermatitis and 11.1% cases of bullous FDE. The 37 cases of oral lesions seen in the study comprised vesiculobullous disorders in 35.13%, reaction pattern in 24.3%, lichen planus in 24.3%, 5.4% each of TEN, SJS, EM and 2.7% of bullous FDE. The 19 cases of infectious etiology leading to oral ulcers comprised of viral infection in 78.9% and fungal infection in 21.1%. The 12 cases of neoplasms comprised of benign in 41.6% cases, premalignant in 33.3% cases, and malignant in 25% of cases. In this study, genodermatosis cases were six in our study cases, four of which were of ectodermal dysplasia, one case of Papillon Lefevre syndrome, one case of neurofibromatosis-1. In this study, most common 58% involved sites were the periodontium, gingivae and buccal mucosa combined. Involvement of the lips 22.2% was the next significant site. Tongue, teeth, salivary glands, palate were 8%, 5%, 4%, 3% respectively.

Conclusions: This study brings into focus prevalence of various oral manifestations. Thorough knowledge about oral manifestations is essential to arrive at a specific diagnosis which is a mandate for counselling and management.

Keywords: Oral lesions, prevalence, etiology

Introduction

The oral cavity is thought of as the window to the body as oral manifestations accompany many systemic diseases. Smoking, drinking and chewing tobacco product, common habits in India have been positively associated with oral lesions [1]. Our knowledge about the distribution of lesions is a practical tool for better diagnosis. Various dermatological disorders of diverse etiologies involve oral cavity. Any symptom or sign in the oral cavity should not be neglected because that can be an early predictor of any underlying disease. 2) Studies about the distribution of oral cavity reactive lesions are not yet sufficient. This study is an overview of the diseases of oral mucosa and various oral manifestations of systemic diseases.

Subjects and Methods

Aim and Objective: To study the clinical patterns and frequency of oral lesions. To document etiological factors of oral lesions and clinico-etiological correlation of oral lesions.

Method and Materials

In this descriptive observational study, data was collected over a period of 24 months from all patients with oral manifestations attending a tertiary care hospital. The sample size of 100 patients was selected using purposive sampling technique. Each patient was examined in detail. The clinical examination was conducted over the patients including general physical examination, and cutaneous examination including mucosa, hairs and nails. Histological examination was done, whenever required after informed and written consent. All patients received appropriate treatment. Text.

Results

The observations and results of our study comprising of 100 patients of oral lesions were as follows:

Female constituted 53% of this study showing a slight female preponderance with female to male ratio of 1.2:1. In our study patients, most of the patients belonged to the fourth and third decades of life which individually accounted for 26% and 20%. The age of the youngest and the eldest patients was 6 months and 78 years respectively. The average age in our study was 33.5 years. (Table1)

In our study of 100 cases of oral lesions, their most (58%) commonly involved sites were the group over the periodontium, gingivae and buccal mucosa combined. Involvement of the lips (22.2%) was the next significant site. Tongue, teeth, salivary glands, palate were 8%, 5%, 4%, 3% respectively.

Dermatological conditions consisting of vesiculobullous disorders, lichen planus, erythema multiforme, TEN, SJS, reaction patterns, lupus erythematosus contributing 37% of our study patients was the most common aetiology, followed by infectious, allergic, aphthous malignant, genodermatotic, systemic, benign and pigmented in decreasing order of 19%,10%,9%,7%,6%, 6%,4%, 2% respectively. (Table2) Among 37 cases of recurrent oral ulcers seen in the study comprised 14(37.83%) cases each of pemphigus group and herpetic stomatitis. The remaining 9(24.32%) were of recurrent aphthae.

The 30 cases of oral ulcers seen in the study comprised 10(33.3%) cases, aphthous 9(30%), neoplastic 7(23.3%), local trauma 4(13.3%). Male preponderance was seen in aphthous and neoplastic. (Table3)

The 9 cases of drug induced oral ulcers seen in this study comprised two (22.2%) each of drug induced cheilitis, SJS, TEN, perioral dermatitis and one (11.1%) case of bullous FDE. (Table 4)

The 37 cases of oral lesions seen in the study comprised vesiculobullous disorders in 13(35.13%), reaction pattern in 9(24.3%), lichen planus in 8(24.3%), 2(5.4%) each of TEN, SJS, EM and 1(2.7%) of bullous FDE. (Table5)

The 19 cases of infectious etiology leading to oral ulcers comprised of viral 15/19(78.9%) and fungal 4/19(21.1%). (Table 6)

The 12 cases of neoplasms comprised of benign in 5/12(41.6%), premalignant in 4/12(33.3%), and malignant in 3/12(25%) of study patients. Premalignant and malignant conditions were more common in males than females owing to addictions like tobacco chewing and smoking. (Table7)

Out of 14 patients of herpes simplex infection, four patients of candidiasis, two cases of TEN, two cases of bald tongue, one case (7.14%), two cases (50%), one case (50%) were seen in HIV positive respectively. One lone case of Addisonian pigmentation was seen in a female of HIV positive.

Of 100 patients of oral lesions, genodermatosis were six in our study cases, four of which were of ectodermal dysplasia, one case of Papillon Lefevre syndrome, one case of neurofibromatosis-1. (Table 8)

Discussion

Dermatoses constitute an area of great scientific and odontological interest, considering that oral lesions can precede many dermatoses for long periods of time. The present study included 100 patients with oral lesions presenting to the dermatology out-patient department of a tertiary care hospital. The lesions were studied extensively and analyzed.

In our study patients, most of the patients belonged to the fourth and third decades of life which individually accounted for 26% and 20%. This finding was similar to study done by Mathew AL *et al.* [3] The average age in our study was 33.5 years similar to study done by Mathew AL *et al.* [3], they reported 44.8% patients in the age group of 21-40 years. In the study by Naderi *et al.* [4], the reported mean age was 39.56 years. The female (53%) to male (47%) ratio in our study was 1.2:1. However, Mathew AL *et al.* [3], and Suliman NM *et al.* [5], reported higher male to female ratios of 1.68:1 and 1.9:1 respectively. Schmidt-Westhause *et al.* [6] reported male to female ratio of 1.5:1. Dermatological disorders consisting of vesiculobullous disorders (oral pemphigus vulgaris) [Figure1], lichen planus, SJS, TEN, EM, reaction patterns and lupus erythematosus, accounted for 37% of our study patients having oral lesions. These findings were not similar to study done by Arvind Babu *et al.* [7] However, Suliman NM [5] *et al.*, observed oral ulcers due to dermatological diseases in 23.2% of their patients.

Recurrent oral lesions were seen in 37% of our study patients, 14(37%) of whom each had herpetic stomatitis and pemphigus group of immunobullous dermatoses. Aphthous stomatitis was the cause of recurrence in 9(26%) patients. Kovac-Kavacic M *et al.* [8] in their study observed 9% recurrent aphthae. Mathew AL *et al.* [3] observed 2.01% recurrent aphthae in their study. Findings of these two studies were not similar to our study.

Drug induced oral lesions seen in nine of our study patients included two (22.2%) cases each of SJS, TEN, drug induced cheilitis, perioral dermatitis and one (11.1%) case of bullous FDE. SJS followed ingestion of phenytoin and nimesulide. One of the two cases of TEN occurred in an HIV-positive male due to progression of nevirapine induced maculopapular rash while it developed due to cotrimoxazole in the second case, a female. Drug induced cheilitis was present in two female students due to oral isotretinoin for the treatment of acne. Perioral dermatitis manifested in two cases due to application of halogenated topical corticosteroid with multiple erythematous papular rash extending to the vermilion border of the lips. Barvaliya M. *et al.* [9], observed antimicrobials (50%), nonsteroidal anti-inflammatory drugs (22.41%), and antiseizure drugs (18.96%) as the drug commonly resulting in SJS, TEN, SJS-TEN overlap in his study. These findings were not similar to our study.

In the vesiculobullous group, 11(84.6%) out of 13 cases presented with pemphigus and 2(15.38%) with mucosal lesions of EBD. Suliman NM *et al.* [5], reported oral lesions of pemphigus in 46.9% out of the 72.2% of his study patients of vesiculobullous diseases. Of the 9 patients with reaction pattern in our study, 3(33.33%) were angioedema patients [Figure2] and 2 (i.e., 2% of the total study patients) cases each presented with geographic tongue, granulomatous cheilitis and fissured tongue. Mathew *et al.* [3] reported geographic and fissured tongue in 0.84% and 5.7% of their study patients respectively. Oral lichen planus [Figure3] seen in 8(21.62%; 8% of the total study) of our patients included 4 (50%) each of erosive and reticulate type. Six out of 8 patients gave history getting dental filling done during the past one year. Mathew *et al.* [3] and Kovac-Kovacic *et al.* [8] reported a lower prevalence of 1.26% and 2.3% respectively of LP in their study. Higher (8%) prevalence in our study could be attributed to the contact reactivity due to amalgam fillings.

Oral lesions secondary to infectious etiology occurred in 19% of our study patients; 15 (78.94%) due to viral and 4(21.06%) due to candidiasis. HSV infection accounted for 14(93.3%) of the oral lesions of viral etiology, the lone remaining case, a 1-year-old child, had hand, foot and mouth disease.

Kovac-Kavacic [8] *et al.* reported 16% prevalence of HSV infection in their study which was similar to our study. Of our four cases of candidiasis, 2(50%) were of perleche and one each was of median rhomboid glossitis and pseudomembranous type. Mathew *et al.* [3] in their study reported a prevalence of 1.03% each of median rhomboid glossitis and pseudomembranous types of candidiasis. These findings were similar to our study.

In this study, 3% were benign lesions, two were mucocele and one was an extra gingival pyogenic granuloma. In the study by Seyedmajidi *et al.* [10], pyogenic granuloma was reported in a higher percentage (35.5%). This difference is due to their study being restricted to localized growths. Kovac- Kavacic M, [8] however reported mucocele only in 0.9%. Premalignant lesions, proven histopathologically, occurred in 4% of our study patients-all of them males-with longstanding addictions of smoking and tobacco chewing, three of which had oral submucous fibrosis and the remaining one leukoplakia. In a study done by Mathew *et al.* [3], prevalence of leukoplakia and oral submucous fibrosis were reported as 1.59% and 2.01% respectively.

These findings were similar to our study. In a study by Kovac-Kavacic *et al.* [8] reported leukoplakia in 3.1% of their study patients. Oral squamous cell carcinoma, proven histopathologically, occurred in 3% of our male patients, who had a longstanding history of tobacco chewing. Mathew *et al.* [3] in their study reported oral malignancies in 1.76% of their patients. These findings were similar to our study.

Oral manifestations are frequently seen during the course of the disease and can be symptoms of early HIV infection. [11] In our study, six patients tested positive for HIV, two of these had oral candidiasis and one each bald tongue, herpes gingivostomatitis, TEN and Addisonian pigmentation [Figure 4]. One each of our study patients of candidiasis had pseudomembranous and median rhomboid glossitis type of the infection. Shrikant *et al.* [12], reported 84% of pseudomembranous type of oral candidiasis in their HIV-positive subjects. Sud *et al.* [13], reported 6% prevalence of TEN in his studies which was mostly nevirapine induced. Oral pigmentation has been reported in 29.33% patients in the study of HIV-positive individuals by Sud *et al.* [13]. Genodermatosis were seen in six of our study cases, four of which were diagnosed as ectodermal dysplasia, one case each as Papillon Lefevre syndrome [Figure 5] and neurofibromatosis type 1. Adiguzel Ozkan *et al.* [14], reported 15 cases of ectodermal dysplasia with partial adontia and conical teeth in three patients. These findings were not similar to our study.

In our study, the most (58.8%) commonly involved site was over the gingivae, periodontium and buccal mucosa combined. Involvement of lips (22.2%) was the next significant site. Tongue, teeth, salivary gland and palate were involved in 8%, 5%, 4% and 3% cases respectively. These findings were not similar to study done by Seyedmajidi *et al.* [10], periodontium, buccal mucosa and gingiva, sites were involved in 46% cases, followed in 4% cases over lips, 3% cases over tongue and 3% cases over palate respectively. However, Kamala Kamble *et al.* [15] in their study noticed that a large number of the lesions occurred on the cheek/buccal mucosa followed by vestibular region and tongue.

This study brings into focus prevalence of various oral manifestations. Accordingly, frequent and regular inspection of the oral cavity of the skin disease patients must be emphasized [16]. Consequently, an interdisciplinary approach in the management of such patients is highly recommended.

Table 1: Age-wise distribution.

31-40	26	26
41-50	15	15
>50	16	16

Table 2: Aetiology wise distribution

S. No.	Etiological factors	Male	Male	Female	Female	Total	Total
		Number	(%)	Number	(%)	Number	(%)
1.	Dermatological Disorders	15	40.54	22	59.5	37	37
2.	Infections	5	26.3	14	73.6	19	19
3.	Allergic	6	60	4	40	10	10
4.	Aphthous	7	77.7	2	22.2	9	9
5.	Malignant	7	100	0	0	7	7
6.	Genodermatosis	2	33.3	4	66.6	6	6
7.	Systemic	3	42.8	3	0	57.1	6
8.	Benign	0	0	4	100	4	4
9.	Pigmented	0	0	2	100	2	2
	Total	43	57			100	

Table 3: Distribution of local aetiology of oral ulceration.

S. No.	Local Etiology	Males	Males	Females	Females	Total No.	(%)
		No.	(%)	No.	(%)		
1.	Allergic	5	55.5	5	44.4	10	33.3
2.	Aphthous	7	77.7	2	28.5	9	30
3.	Neoplastic	7	100	0	0	7	23.3
4.	Local Trauma	0	0	4	28.1	4	13.3
	Total	20		10		30	

Table 4: Distribution of patients according to drug induced oral lesions.

Sr. no.	Drug induced oral ulcers	Male	Female	Total	Percentage (%)
1	Drug induced cheilitis	0	2	2	22.2
2	SJS	2	0	2	22.2
3	TEN	1	1	2	22.2
4	Perioral dermatitis	1	1	2	22.2
5	Bullous FDE	1	0	1	11.1

Table 5: Distribution of patients with oral lesions due to dermatological conditions.

Sr. no.	Total number of dermatological conditions	Male	Female	Total	Percentage (%)
1	Vesiculobullous	4	9	13	35.13
2	Lichen planus	6	2	8	24.32
3	Reaction pattern	4	5	9	24.32
4	TEN	1	1	2	5.4
5	SJS	0	2	2	5.4
6	Erythema multiforme	1	1	2	5.4
7	Lupus erythematosus	0	1	1	2.7
	Total	16	21	37	100

Table 6: Distribution of patients with oral lesions due to infection aetiology.

Sr. no.	Name of the infectious disease	Total no. of patients	Percentage (%)
a)	Fungal		
	1) Candidiasis	4	21
	Total	4	
b)	Viral		
	1) Herpes simplex	14	73.6
	2) Hand foot mouth disease	1	6.6
	Total	15	
	Grand total	19	

Table 7: Distribution of patients with oral lesions due to neoplasms.

Sr. no.	Neoplasms	Males	Females	Smoker	Tobacco chewer
A	Premalignant				
	1. Leukoplakia	1	0	1	1
	2. Oral submucosal fibrosis	3	0	2	3
B	Malignant				
	1. Oral SCC	2	0	0	2
	2. Oral florid papillomatosis	1	0	0	1
C	Benign				
	1. Pyogenic granuloma	0	1	0	1
	2. Mucocele	0	3	0	0
	3. Neurofibroma	0	1	0	0

Table 8: Distribution of patients in genodermatosis.

Sr. no.	Genodermatosis	No. of patients	Percentage (%)
A	Ectodermal dysplasia		
	1. Anhidrotic	2	33.33
	2. Hypohidrotic	2	33.33
B	Neurofibromatosis	1	16.6
C	Papillon Lefevre syndrome	1	16.6
	Total	6	



Fig 1: Oral pemphigus vulgaris



Fig 3: Oral lichen planus: Multiple well defined violaceous to hyperpigmented plaque over left buccal mucosa.



Fig 2: Angioedema affecting both lips.



Fig 4: Addisonian pigmentation: Multiple hyperpigmented macules over dorsum of tongue



Fig 5: Adontia in Papillon Lefevre syndrome.

Conclusion

Thorough knowledge about oral manifestations is essential to arrive at a specific diagnosis which is a mandate for counselling and management.

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