

## **A Hospital-Based Study Correlating the Histopathological Diagnosis with Habits and Clinical Findings in Patients Suffering from Oral Mucosal Lesions**

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### **Abstract**

**Aim:** This study was conducted to correlate the histopathological diagnosis with habits and clinical findings in patients suffering from oral mucosal lesions.

**Material & methods:** 100 patients with persistent oral lesions alone or oral lesions along with cutaneous lesions were taken up for study. Their detailed history, examination was recorded, relevant investigations were done. Based on clinical history and examination a clinical diagnosis was made. Oral biopsies were taken and sent for histopathological examination. All the findings were recorded and analyzed

**Results:** Out of 100 subjects, 25 (25%) consumed vegetarian diet while 75 (75%) consumed mixed type of diet. In India, people are seen to clean oral cavity with products like toothpaste, bamboo stick and mishri etc. The most common chief complaint was pain (75%). 52 subjects (52%) had oral ulcer as their primary complaint. 15 (15%) and 28 (28%) subjects presented with swelling and bleeding, respectively. The most common site of oral lesion in this study was buccal mucosa (50%). Aphthous stomatitis and Oral submucous fibrosis were found to be the most common benign and premalignant lesions, respectively. Most common malignant lesion was squamous cell carcinoma of buccal mucosa.

**Conclusion:** The widespread habit of chewing dohra/paan masala is a major risk factor of OSF, especially in the younger age group. In this study, an increase in histopathological grading was found with severity and duration of addiction habit. However no significant correlation was found between clinical staging and histopathological grading.

**Keywords:** Oral mucosal lesions, leukoplakia, Erythroplakia, Oral cancers, Aphthous ulcers, Oral submucous fibrosis

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### **Introduction**

Oral health is important for the quality of life of all individuals. Oral lesions can cause discomfort or pain that interferes with mastication, swallowing, speech and can produce symptoms such as halitosis, xerostomia, and oral dysaesthesia, which interfere with daily social activities. [1] These lesions can cause variety of symptoms such as pain, bleeding, halitosis, difficulty in chewing, swallowing and speech, leading to severe discomfort in daily life. The oral mucosa is subjected to numerous local irritants throughout the life. This makes the oral cavity one of the most common sites for various benign, premalignant and malignant lesions. [2] Oral lesions are usually seen in local as well as generalized dermatological disorders like lichen planus, lupus erythematosus, candidiasis and various autoimmune bullous disorders and oral lesions may be the early signs of systemic diseases as well. Various oral lesions can be conveniently grouped into following categories: [3] Leukoplakic lesions, Leukoplakic and / or Erythemic lesions, Ulcerative, Vesicular and Bullous oral lesions, Pigmented lesions, Papillary and verrucous lesions. The overall Clinico histopathologic correlation of different types of oral lesions discrepancy ranges from 17% to 42%. [4] Discrepancy in clinicopathologic correlation of oral lesions depends upon different factors like, selecting the most appropriate area for histopathology, total sample of patients as the percentage and type of patients vary between different studies. These lesions were found to be more common in middle aged males of low socioeconomic status. Chewing, smoking and consumption of alcoholic beverages have become cannon social habits in India. Tobacco consumption is one of the most important harmful factors for the origin of oral mucosal lesions including oral pre-cancer as well as cancer. [5]

There was strong association between tobacco chewing and smoking with occurrence of premalignant and malignant

lesions. Smoking, drinking and chewing have been positively associated with oral lesions such as oral submucous fibrosis (OSF), leukoplakia and oral lichen planus, which has the potential for malignant transformation. [6] Alcohol addiction often coexisted with tobacco consumption; and was found to be weakly associated with only malignant lesions. Aphthous stomatitis and Oral submucous fibrosis were found to be the most common benign and premalignant lesions, respectively. Most common malignant lesion was squamous cell carcinoma of buccal mucosa. History and clinical examination were needed to study the type, site, gross appearance and extent of the lesion. [7] The higher occurrence of leukoplakia and cancer are observed in OSF patients and it is believed to be an important risk factor for oral cancer among youths. [8,9] Prevalence of oral leukoplakia in India varies from 0.2%-5.2%. [10] According to an Indian study at four urban centers, the prevalence of oral lichen planus varies between 0.02%-0.4%. [11] Adequate management of a subject with an oral lesion begins with an accurate diagnosis.

The purpose of this study was to correlate the histopathological diagnosis with habits and clinical findings in patients suffering from oral mucosal lesion from these habits in population of Gujarat.

### **Material & Methods**

This study was carried out for a period of one year in the Department Of ENT(Otorhinolaryngology) GMERS Medical College, Himmatnagar, Gujrat, India. The study included 100 patients with persistent oral lesions alone or oral lesions along with cutaneous lesions who visited Department of Dermatology, Venereology and Leprology, and also patients referred from Department of Otolaryngology of this hospital over a period of one year. All subjects who met below criteria underwent a detailed study. A written and valid informed consent was obtained from each subject.

**Inclusion criteria**

1. Age above 20 years
2. Subjects giving consent to take part in the study and for biopsy.

**Exclusion criteria**

1. Biopsy proven cases
2. Post op Head and Neck malignancy
3. Post chemotherapy and/or radiotherapy
4. Recurrence
5. Associated with systemic disorders and infections

**Methodology**

A detailed history regarding the onset, duration, progression, number including cutaneous, other mucous membrane, systemic complaints, past history, personal history and drug history was recorded in the proforma. A thorough general physical examination was done. Also local lesions, skin, other mucous membranes, nails and scalp were thoroughly examined and relevant details were recorded in the proforma. Provisional clinical diagnosis of particular dermatosis was made after

independent opinion of two senior consultants in the Post Graduate Department of Dermatology, which was based on the history and clinical examination findings. Biopsy was taken from the representative area of the oral cavity which was sent for histopathological examination. Hemoglobin, CT, BT, Blood sugar (Fasting) was carried out in the hospital laboratory, Other relevant investigations were done wherever required. Provisional clinical diagnosis of various oral lesions was correlated with histopathological findings of the oral mucosal biopsies and data thus collected was analysed. Patients were also counselled regarding their prognosis and outcomes of various treatment modalities available and were encouraged to quit addictions.

**Statistical Analysis**

Analysis was conducted using statistical software Epi-info version 6.0 and SPSS for windows. Quantitative variables were reported as mean, median and standard deviation and inferences were drawn.

**Results****Table 1: Diet and oral hygiene practices amongst subjects**

Diet	N	%
Veg	25	25
Mixed	75	75
<b>Oral hygiene habits</b>		
Toothpaste	65	65
Bamboo stick	10	10
Mishri	25	25

Out of 100 subjects, 25 (25%) consumed vegetarian diet while 75 (75%) consumed mixed type of diet. In India, people are seen to clean oral cavity with products like toothpaste, bamboo stick and mishri etc. In this study, maximum number of individuals used toothpaste to clean oral cavity.

**Table 2: Chief complaints and site of lesion**

<b>Chief complaints</b>	<b>N</b>	<b>%</b>
Ulcer	52	52
Swelling	15	15
Pain and burning	75	75
Bleeding	28	28
Hyperpigmentation	25	25
Hypopigmentation	15	15
Restricted mouth	18	18
Loose teeth	7	7
Recurrent ulcers	8	8
Difficulty in swallowing and speaking	1	1
<b>Site of lesion</b>		
Tongue	32	32
Buccal mucosa	50	50
Lip	7	7
Hard palate	7	7
Tonsil	4	4

The most common chief complaint was pain (75%). 52 subjects (52%) had oral ulcer as their primary complaint. 15 (15%) and 28 (28%) subjects presented with swelling and bleeding, respectively. Hyperpigmentation and hypopigmentation accounted for 25% and 15% of subjects

respectively. 18 (18%) individuals had restricted mouth opening and 7 (7%) individuals had loose teeth. One patient had difficulty in swallowing and speaking because of large oral lesion. The most common site of oral lesion in this study was buccal mucosa (50%).

**Table 3: Daily frequency and duration of tobacco chewing**

<b>Daily frequency</b>	<b>N</b>	<b>%</b>
1-3 times	0	0
4-10 times	18	36
>10 times	32	64
Total tobacco chewers	50	100
<b>Duration</b>		
< 5 years	0	0
5-15 years	4	8
>15 years	46	92
Total tobacco chewers	50	100

The study had 50 tobacco chewers, and majority of them (64%) had habit of daily tobacco chewing with frequency of more than 10 times a day and total duration of more than 15 years (92%).

**Table 4: Amount of smoking in pack- year (py) and Amount of alcohol consumption in average gram/day**

Amount of smoking	N	%
<10 py	4	13.34
10-20 py	5	16.66
>20 py	21	70
Total	30	100
Amount of alcohol consumption		
<20	5	20
20- 40	16	64
>40	4	16
Total	25	100

70% subjects smoke >20 py and 64% consumed alcohol 20-40 grams per day.

**Table 5: List of benign, premalignant and malignant lesions found at various site**

Site	Benign	Premalignant	Malignant
Tongue	Fibroma	Oral leukoplakia	Squamous cell carcinoma
	-	Oral lichen planus	Sarcomatoid carcinoma
	-	Erythroplakia	Adenoid cystic carcinoma
Buccal mucosa	Aphthous stomatitis	Oral leukoplakia	Squamous cell carcinoma
	Fibroma	OSMF	-
	-	Erythroplakia	-
Hard palate	Hemangioma	Stomatitis nicotine	Squamous cell carcinoma
Lip	Angiolipoma	-	-
	Benign hyperplasia of minor salivary glands (mucocele)	-	Squamous cell carcinoma
Tonsil	-	-	Squamous cell carcinoma
	-	-	Mucoepidermoid carcinoma

Aphthous stomatitis and Oral submucous fibrosis were found to be the most common benign and premalignant lesions, respectively. Most common malignant lesion was squamous cell carcinoma of buccal mucosa.

### Discussion

Oral submucous fibrosis (OSF) is a chronic and potentially malignant condition of the oral cavity. It is characterized by a juxtra epithelial inflammatory reaction followed by fibroelastic changes in the lamina propia and associated epithelial atrophy. The disease affects most part of the oral cavity

as well as the upper third of the esophagus. [12] The oral mucosa is subjected to numerous local irritants throughout the life. This makes the oral cavity one of the most common sites for various benign, premalignant and malignant lesions. These lesions can cause variety of symptoms such as pain, bleeding, halitosis, difficulty in chewing, swallowing and speech, leading to severe discomfort in daily life. Oral lesions generally present in the form of ulcer, swelling, discolouration or restricted mouth opening. According to Bokor-Bratiæ et al [13], the most common OPMD in clinical diagnoses is leukoplakia (58.9%). Clinical

diagnosis was confirmed by histopathologic diagnosis in 92.3% of leukoplakia patches. Maia et al [14] found that 31.2% had OPMD. Regarding the relationship between clinical and histopathologic diagnoses, the highest consistency was observed in erythroplakia and atypical ulcers. A variety of diagnoses from hyperkeratosis to severe dysplasia was seen between six pathologists. Fifty point five (50.5) percent of pathologists accurately diagnosed mild-to-moderate dysplasia. [15]

Out of 100 subjects, 25 (25%) consumed vegetarian diet while 75 (75%) consumed mixed type of diet. In India, people are seen to clean oral cavity with products like toothpaste, bamboo stick and mishri etc. The most common chief complaint was pain (75%). 52 subjects (52%) had oral ulcer as their primary complaint. 15 (15%) and 28 (28%) subjects presented with swelling and bleeding, respectively. The most common site of oral lesion in this study was buccal mucosa (50%). Aphthous stomatitis and Oral submucous fibrosis were found to be the most common benign and premalignant lesions, respectively. Most common malignant lesion was squamous cell carcinoma of buccal mucosa. The commonest site involved in our study was buccal mucosa and some patients had more than one site involvement which was in agreement with results of Lourenco Silvia V et al. [16]

Aphthous stomatitis and Oral submucous fibrosis were found to be the most common benign and premalignant lesions, respectively. Most common malignant lesion was squamous cell carcinoma of buccal mucosa. A study stated that it is very difficult to differentiate between oral lichen erythematosus, oral lichen planus and leukoplakia even when established histopathological criteria are used so this may be the cause for observed lack of clinicohistopathological correlation. [17] A study by Rodriguez et al [18] reported parakeratosis, orthokeratosis, a chronic

inflammatory infiltrate in sub epithelium and epithelial dysplasia but the most characteristic alteration of epithelium seen in their study was hyperplasia. Many of the skin disorders initially present as subtle signs in oral mucosa and may be misdiagnosed as they present to other specialities for treatment. Some of them like oral lichen planus and leukoplakia have malignant potential hence early diagnosis and remedial measures could be taken with proper histopathological examination. Part of the disparity in correlation between clinical and histopathological examination of oral lesions can be explained on the basis of interobserver and intraobserver variability in clinical and histopathological examination.

### Conclusion

It is important to study oral mucosal lesions in more detail with respect to demographic details of the patient. History and clinical examination are always needed to know the type and extent of the lesion, including clinical TNM stage in case of malignant lesions. However final diagnosis is made only after histopathology report, which also have prognostic significance.

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