

## Original Research Article

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# An observational study of benign oral lesions in central India

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## ABSTRACT

**Background:** The oral mucosa serves as a protective barrier against trauma, pathogens and carcinogenic agents. It can be affected by a wide variety of lesions and conditions, some of which are harmless while others may have serious complications. The appearance of benign oral soft tissue masses can occasionally resemble malignant tumors.

**Methods:** Present study is an observational and cross sectional study under taken in the Department of ENT in Shri Vasant Rao Naik Government Medical College, Yavatmal. All cases of benign oral lesions were included in the study and following cases were excluded: malignant oral lesions, immunocompromised state and benign Oral lesions due to systemic diseases.

**Results:** Present study included 235 lesions of oral cavity which were clinically or histo-pathologically found to be benign in nature. Benign oral lesions were more commonly found in males with (70.2%) than females (29.8%), and M:F ratio was 2.3:1. most common benign oral lesions were found to be Oral Sub Mucus Fibrosis (26.8%) followed by Aphthous ulcers (20.4%), Leukoplakia (18.3%) and Mucocele (17.1%). Least common benign oral lesions were found to be Minor Salivary Gland Tumor (MSGT) (1.7%) followed by Squamous Papilloma (2.1%), Ranula (2.1%) and Hemangioma (2.1). There was a male predominance in oral sub mucus fibrosis with M:F ratio of 9.5:1 followed by Leukoplakia with M:F ratio of 4.4:1. OSMF was found most commonly in 21-30 years age group with (57.1%). Followed by 11-20 years with (20.6%). No cases were found in ≤10 years, 51-60 and >60 years age group.

**Conclusions:** Most of the benign oral lesions have a predilection to transform into malignant lesions therefore imperative to diagnose the pre malignant lesions of oral cavity in an early stage where appropriate treatment can be given.

**Keywords:** Pre malignant, Benign, Oral, OSMF, Leukoplakia, Aphthous ulcer

## INTRODUCTION

Oral health is important to the quality of life of individuals of all the age groups. Oral lesions can lead to interference of daily activities due to discomfort or pain that interferes with mastication, swallowing and speech, producing additional symptoms such as halitosis, xerostomia or oral dysesthesia, which hampers an individual's daily social activities.<sup>1</sup> The oral mucosa serves as a protective barrier against trauma, pathogens and carcinogenic agents. It can be affected by a wide

variety of lesions and conditions, some of which are harmless while others may have serious complications.<sup>2</sup> It is one of the most common sites for various tumors and tumor like lesions. Tumor may originate from epithelial tissue, connective tissue, muscle tissue, nerve tissue and from vessels. The appearance of benign oral soft tissue masses can occasionally resemble malignant tumors. It is therefore, crucial to distinguish benign from malignant masses and in order to make a proper diagnosis, the clinical characteristics of benign oral soft tissue masses needs to be well known. Most benign oral soft tissue

masses have a specific age and sex distribution and preferable locations in the oral cavity.<sup>3</sup>

Oral cancer has become one of the leading causes of death not only in India but all over the world. Globally about 3, 00,000 new oral cancer cases are getting diagnosed per year.<sup>4</sup> Even though oral cancer represents only 2 to 4% of the malignancies in the Western countries, it accounts for about 40% of all cancers in India. Age-adjusted rates of oral cancer in India is high, that is, 20 per 100,000 population and accounts for over 30% of all cancers in the country.<sup>5</sup>

A prognosis of oral cancer is directly related to the stage at which it gets diagnosed. Almost always oral cancers are preceded by some or other type of precancerous lesion. These lesions can be diagnosed as early as 15 years before they turn into invasive carcinoma. Early detection and treatment of these potentially malignant lesions can help in the primary prevention of oral cancer. Several oral lesions like leukoplakia, erythroplakia, oral sub mucous fibrosis are regarded to be precancerous lesions for oral cancer, because of their tendency to malignant transformation.<sup>6</sup>

The various lesions included in present study are – Oral Sub Mucous Fibrosis, Leukoplakia, Aphthous ulcers, Minor salivary gland tumors, Mucocele, Ranula, Squamous papilloma, Pyogenic granuloma, Epulis, Hemangioma.

The present study was done to determine frequency of occurrence of benign oral tumors, tumor like lesions and oral precancerous lesions with their demographic distribution.

## METHODS

Present study was under taken in the Department of ENT in a tertiary care institute. Approval from the institutional ethical was taken before commencing the study.

### *Study design*

Observational study, cross sectional study

### *Duration of study*

2 years from 1<sup>st</sup> August 2014 to 31<sup>st</sup> July 2016

### *Study population*

Cases attending ENT OPD and fulfilling study criteria

### *Sample size*

Cases attending ENT OPD in a tertiary care centre and fulfilling study criteria during two years period commencing from 1 August 2014 to 31 July 2016. Total

235 such cases were found fulfilling study criteria during the study period.

### *Aims and objectives*

1. To study the frequency of occurrence of various benign oral lesions.
2. To study the age and gender wise distribution of various benign oral lesions.
3. To study the site wise distribution of various benign oral lesions.

Following were the inclusion and exclusion criterias of the study.

### *Inclusion criteria*

An inclusion criterion was all benign oral lesions.

### *Exclusion criteria*

Exclusion criteria were patients having malignant oral lesions; patient having immunocompromised state, benign oral lesions due to systemic diseases.

A detailed history was taken, regarding age, gender, presenting complaints, associated complaints, and any history of major illness like diabetes mellitus / tuberculosis etc. It was also noted if the patients were taking any medication and any history of similar lesion in past. History of any addictions was also taken like alcohol, smoking, tobacco chewing, snuff, gutkha, khaini, zarda. History of previous oral surgery if any was also noted.

Detailed history of the lesion was taken about duration of onset of the lesion, changes in size and duration of change, whether there is any change in the character of the lesion like lump to ulcer was noted. Associated systemic symptoms like fever, nausea, anorexia, pain, character of the pain if present, bleeding from lesion, feeling of swelling, bad taste or smell, dysphagia etc. were also noted. History of any trauma to the local area, recent toothache was also noted. Past history was noted about medical conditions that warrant special care like congenital heart defects, coagulopathies, hypertension, poorly controlled diabetics, and immunocompromised status. All cases having immunocompromised status were excluded from study.

Detailed clinical examination was done which included inspection of the anatomic location of the lesion, the physical character, the size and shape, number of lesions, condition of surface, colour, sharpness of the boundaries, the consistency to palpation and presence of pulsation was noted. Neck lymph nodal examination was done.

Necessary radiographic examination like x-ray, USG etc. was done. Necessary pathological investigations were

done like oral cytology, punch biopsy, excisional biopsy and FNAC.

Data was compiled and analyzed in Microsoft Excel 2010.

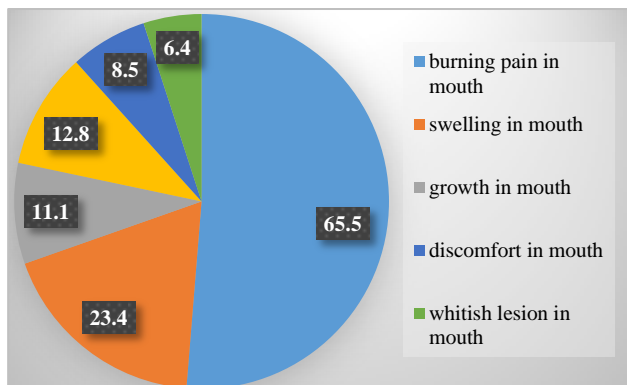
## RESULTS

Present study included 235 lesions of oral cavity which were clinically or histo-pathologically found to be benign in nature.

**Table 1: Gender wise distribution of benign oral lesions (n=235).**

Sr. No.	Gender	No. of cases	Percentage (%)
1	F	70	29.8
2	M	165	70.2
	Total	235	100

The benign oral lesions were more commonly found in males with (70.2%) than females (29.8%), and M:F ratio was 2.3:1. Reason for this may be as males are more prone for addictions to tobacco, tobacco related products and alcohol addictions. This is shown in Table 1.



**Figure 1: Symptomatology of benign oral lesions (n=235).**

**Table 2: Frequency of occurrence of various benign oral lesions (n=235).**

Sr. No.	Lesions	No. of cases	Percentage (%)
1	Oral Sub Mucus Fibrosis	63	26.8
2	Apthous ulcer	48	20.4
3	Leukoplakia	43	18.3
4	Mucocoele	40	17.1
5	Pyogenic Granuloma	12	5.1
6	Epulis	10	4.3
7	Hemangioma	5	2.1
8	Ranula	5	2.1
9	Squamous Papilloma	5	2.1
10	MSGT	4	1.7
	Total	235	100

We found most common benign oral lesions were found to be oral sub mucus fibrosis (26.8%) followed by Apthous ulcers (20.4%), Leukoplakia (18.3%) and Mucocoele (17.1%). Least common benign oral lesions were found to be Minor Salivary Gland Tumor (MSGT) (1.7%) followed by Squamous Papilloma (2.1%), Ranula (2.1%) and Hemangioma (2.1%).



**Figure 2: Hemangioma of upper lip mucosal aspect.**



**Figure 3: Leukoplakia of tongue.**



**Figure 4: Apthous ulcer of lower lip.**

There was a male predominance in Oral Sub Mucus Fibrosis with M:F ratio of 9.5:1 followed by Leukoplakia with M:F ratio of 4.4:1. In females most common benign oral lesions were found to be apthous ulcers with 17 females followed by mucocoele with 15 females. Hemangioma exclusively found in females (n=5). As males are more prone for addictions to alcohol, khaini, gutkha, zarda, tobacco, smoking and snuff, lesions like leukoplakia and oral sub mucus fibrosis are more

commonly found in them. In females stress, nutritional deficiencies, multivitamin deficiencies are common and they are more neglected hence lesion like Aphthous ulcer are more commonly found in them.

OSMF was found most commonly in 21-30 years age group with (57.1%). Followed by 11-20 years with (20.6%). No cases were found in  $\leq 10$  years, 51-60 and  $>60$  years age group.

## DISCUSSION

In present study 235 cases of benign oral lesions during study period, fulfilling study criterias were included.

In present study, most of the cases were found in 11-40 years of age group (71.1%) which is comparable with studies of Chalkoo et al, Al Khateeb et al and Hegde et al, Kadeh et al study found most common age group as 21-40 years for benign oral lesions.<sup>3,7-9</sup>

In present study benign oral lesions were predominantly seen in males (70.2%) which is comparable with studies of Permi et al males (63.7%) and Modi et al males (60.5%).<sup>10,11</sup> Al Khateeb et al found 40% males in their study.<sup>3</sup>

In present study Oral Sub Mucus Fibrosis was found to be the most common benign oral lesion (26.8%). Permi et al<sup>10</sup> found Leukoplakia (15.3%) as the most common benign oral lesion.<sup>10</sup> Bhatnagar et al found Smoker's palate (10.44%) as the most common benign oral lesion.<sup>12</sup> Shahsavari et al found Pyogenic granuloma as the most common benign oral lesion.<sup>13</sup>

In present study most common site of involvement amongst benign oral lesions was buccal mucosa comprising 50.6% of all cases, which is comparable with studies by Agarwal et al, Modi et al and Kosam et al, Al Khateeb et al and Shahsavari et al found gingiva as most common site of benign oral lesions.<sup>3,11,13-15</sup>

Esent study oral sub mucus fibrosis was most commonly found in younger age group 21-30 years and found predominantly in males. Most common site involved was buccal mucosa. These findings are comparable to studies of Mehrotra et al.<sup>16</sup>

In present study Aphthous ulcers were most commonly found in 21-30 years of age group (29.2%) with mean age of 36.5 years which is comparable with study of M. Abudullah.<sup>17</sup> In present study male to female ratio was (M:F : 1.8:1) which is comparable with the study of Mathew et al (M:F : 2.1:1).<sup>18</sup> Gender wise distribution is comparable with Mathew et al.<sup>18</sup> But this is in contrast with study of M. Abdullah where (M:F : 0.6:1).<sup>17</sup> Most common site for the Aphthous ulcer in present study was found to be tongue (47.9%), but Abdullah in their study

found Lip and buccal mucosa as the most common site (71.1%).<sup>17</sup>

In present study Leukoplakia was most commonly found in 20-40 years age group with male preponderance and most common site of involvement was buccal mucosa. Which is comparable with studies of, Mishra et al.<sup>19</sup>

In present study oral Mucocele was most commonly found in male in 10-20 years of age group and most common site was lower lip. This is comparable to More et al and Oliveira et al.<sup>20,21</sup> For Mucocele male to female ratio in present study was M: F 1.6:1. Study of Oliveira et al found M:F 1:1 and More et al found M:F 1.07:1.<sup>20,21</sup>

In present study, pyogenic granuloma was most commonly seen in age group of 21-30 years. This is similar to study of Kadeh et al. In present study male to female ratio was M:F 2:1 which is in contrast with study of Kadeh et al. In present study most common site for pyogenic granuloma was buccal mucosa but Kadeh et al study found gingiva as the most common site for pyogenic granuloma.<sup>9</sup>

In present study most common in age group for epulis was 31-40 years but Al Khateeb et al found epulis most commonly in 11-30 years age group.<sup>3</sup> Also Kadeh et al found epulis most commonly in 41-60 years age group.<sup>9</sup> Male female ratio in present study was M:F 0.66:1. It is similar to Al Khateeb et al M:F 0.7:1.<sup>3</sup> Most common site for epulis in present study was gingiva which is similar to Al Khateeb et al and Kadeh et al.<sup>3,9</sup>

In present study most common site for Haemangioma was lip but in study of Corrêa et al and Allon et al most common site was tongue.<sup>22,23</sup> In present study Hemangioma was exclusively seen in females but Allon et al found male female ratio M:F 1.3:1 and Corrêa et al found M:F 0.4:1.<sup>22,23</sup> In present study most common age group for haemangioma was 21-30 years age group which is comparable to Corrêa et al.<sup>22</sup>

In present study mean age for Squamous Papilloma was 46.6 years which is similar to Torres-Domingo et al study.<sup>24</sup> Male to female ration in present study was M:F 0.66:1 but in Torres-Domingo et al study it was M:F 0.9:1 and in Al Khateeb et al it was M:F 1.3:1.<sup>3,24</sup> Most common site for Squamous Papilloma in present study was buccal mucosa. Torres-Domingo et al and Permi et al found tongue was the most common site for Squamous Papilloma.<sup>10,24</sup> Al Khateeb et al found palate as the most common site for Squamous Papilloma.<sup>3</sup>

In present study most common site for MSGT was lip. I Allon et al and Al Khateeb et al found palate as the most common site MSGT.<sup>3,23</sup> In present study male to female ratio for MSGT was M:F 1:3. Allon et al found M:F as 1.3:1 and Al Khateeb et al found M:F as 0.8:1.<sup>3,23</sup> In



present study mean age for MSGT was 48.8 which is comparable with Allon et al.<sup>23</sup>

## CONCLUSION

Most of the benign oral lesions have a predilection to transform into malignant lesions therefore imperative to diagnose the pre malignant lesions of oral cavity in an early stage where appropriate treatment can be given.

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