Original Research Article

Histopathological study of Pre-malignant and malignant Lesions of oral cavity: A prospective study from SAMS medical college

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ABSTRACT

Background: In developing countries like India oral hygiene and oral health facilities are still out of reach of a sizable population. Along with this consumption of Paan, Gutkha and other tobacco products aggravated the oral health. Oral cavities are the most common site of lesions. These pre-malignant lesions became malignant over time and causes irreversible oral cancers.

Aims and Objective : To study the histopathology (changes in tissues) of lesions of oral cavities.

Materials and Methods : This study enrolled 140 patients of oral cavity lesions and followed up for a period of 12 months. For histopathology lesions tissue sample was taken and biopsy was done post fixation in 10% buffered formalin, tissue were routinely processed and embedded in paraffin wax. Multiple sections were stained with Hematoxylin and eosin and studied them to find the correlation with gender, age, site of lesion and histopathological diagnosis.

Result: Out of 124 oral biopsies, 52(42%) were malignant lesion, 46(37%) were pre-malignant lesion and 26(21%) were benign lesions. There is male preponderance in gender distribution of patients. Buccal mucosa was most common site of lesion. In malignant lesion group 50 patient of had squamous cell carcinoma (moderate in 67.31% and clear in 28.58%). In pre-malignant group keratosis with mild dysplasia was highest (28.26%) followed by the Oral submucous fibrosis (21.47%).

Conclusion: Awareness about oral health and hygiene is necessary to prevent the oral health complications. Early detection of pre-malignant lesion id helpful in prevention of malignant cancer and complications. Along with clinical examination histopathological investigation should be done for lesions of oral cavity.

1. Introduction

Oral cavity cancer is the commonest lesion of the head and neck. It is an aggressive cancer with very poor prognosis in early stage. Every year there is more than 5 lac incidences of oral cancer globally, out of these less than 50% patients survive more than5 years post the diagnosis.[1]

In India Incidence rates of oral cancer is 12.8 men and 7.5 women per one lakh. It mainly affects the working population and elderly aged between 50 to 80 years.[2] In developing countries like India major causes of oral carcinoma are smokeless tobacco (products) consumption,

Paan (betel nut) chewing and infections due to human papilloma virus (HPV). Poor dental hygiene, lack of care and poor diet are other attributors of oral cancer.[3]

Oral cancer is the leading cancer in Indian males which is about 30% of the total cancer burden. Most of these cases are initially presented with precursor lesions which are classified as malignant and pre-malignant lesions. A pre-malignant lesion is a morphologically transformed tissue in which becomes the most likely site of cancer.[4]

Classification of lesions uses the clinical appearance of lesions to determine the malignancy. Leukoplakia and erythroplakia are the clinical lesions considered as premalignant. However only clinical features for lesions classification is not reliable as the lesions vary in appearance

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and size which could be interpreted wrongly and therefore a histopathologic diagnosis is more reliable and which can correctly identified the pre-malignant changes than the clinical apparent alterations only.

In India most common pre-malignant oral conditions are erythroplakia, leukoplakia, sub-mucous fibrosis and lichen planus, which are having higher risk of malignant transformation into oral cancer.[5] This study was conducted to assess the scale of pre-malignant and malignant oral lesions among the patients attending the SAMS Medical college hospital.

2. Materials and Methods

It was a prospective study carried out over a period of one year with 140 patients of oral cavity lesion attending the SAMS Medical college hospital Indore. A written and formal consent was secured from the subjects before commencing the study.

For histopathology lesions tissue sample was taken and biopsy was done post fixation in 10% buffered formalin, tissue were routinely processed and embedded in paraffin wax after the grossing and dissection. Paraffin blocks were dissected into multiple sections of 4 to 5 microns and discolored with Hematoxylin and eosin.

Only the adequately and representative specimens which were properly resected surgical were included for histopathology. Iinadequately preserved specimens or with improper clinical history or examination, or arising neoplasms or abnormal growth were excluded from the study.

SPSS ver. 20 was used to perform the data analysis. Frequency distribution and cross tabulation was used to prepare the tables. Quantitative data was expressed as mean whereas categorical data is expressed as number and percentage. No further statistical analysis was performed.

3. Results

As part of this study 124 oral biopies were conducted on the participating patients. Histopathology of these biopsies shows 52(42%) patients had malignant lesion, 46(37%) had pre-malignant lesion and 26(21%) had non-malignant oral cavity lesions. Demographic distribution of patient's shows male preponderance and majority of patients were in the age group of 46 to 60 years. Male to female sex ratio of subjects is 2.54 (89:35) (Table 1).

Buccal mucosa was most common involved site followed by lip and tongue (Table 2).

Of pre-malignant cases, 37 were males and 9 were females (Table 3).

In the malignant lesion group, most patient of had moderate squamous cell carcinoma i.e.35 (67.31%), followed by clear squamous cell carcinoma in 15(28.58%) and Verrucous and poor squamous cell carcinoma in 1

Table 1: Demographic distribution of subjects.

Age group (in years)	Male	Female	Count	%
>=15	5	2	7	5.65%
16 to 30	9	4	13	10.48%
31 to 45	17	7	24	19.35%
46 to 60	29	9	38	30.65%
60 to 75	25	11	36	29.03%
<=75	4	2	6	4.84%
Total	89	35	124	100

Table 2: Distribution of site of lesion.

Site of lesion	Count	%
Buccal Mucosa	54	43.55%
Lip	33	26.61%
Tongue	23	18.55%
Gingiva	4	3.23%
Retromolar Trigone	4	3.23%
Hard palate	6	4.84%
Total	124	100

patients each (Table 3).Out of 54 malignant patients, 47 were males and 7 were females.

Table 3: Distribution of malignant lesion.

Malignant lesion	Count	%
Well-differentiated squamous cell carcinoma	15	28.85%
Moderately differentiated squamous cell carcinoma	35	67.31%
Poorly differentiated squamous cell carcinoma	1	1.92%
Verrucous carcinoma	1	1.92%
Total	52	100%

In pre-malignant lesion group of patients, keratosis with mild dysplasia was highest in 13 (28.26%) patients followed by the Oral submucous fibrosis in 10 (21.47%) subjects. (Table 4)

Table 4: Distribution of pre- malignant lesion.

Pre-Malignant lesion	Count	%
Keratosis without dysplasia	9	19.57%
Keratosis with mild dysplasia	13	28.26%
Keratosis with moderate dysplasia	4	8.70%
Keratosis with severe dysplasia	5	10.87%
Oral submucous fibrosis	10	21.74%
HPV related lesion	5	10.87%
Total	46	100%

In non-malignant group there were 26 patients, out of that 8 had mucous retention cyst, 9 had extravasation cyst, 4 had squamous papilloma and 5 were suffered from pyogenic granuloma.

4. Discussion

Majority of the oral lesions are asymptomatic and with overlapping clinical presentations thereby difficult to diagnose clinically and need histopathology for fining the malignancy.[6]

As part of this study we studied the oral cavity lesion of the patients and recorded lesion entails along with the demographic details of the patients.

In present study out of 124 patients of oral lesion 30.65% were in the age group of 46 to 60 and 19% were in 31 to 45 year age group, similar observations were made by Khan Y et al who noted most of patients with oral lesions that in their third and fourth decade of age.[7] Another study by Bhalekar S et al. recorded maximum cases in the age group of 31- 45 years.[8]

Present study witnessed Male to Female ratio was 2.5:1 i.e. male preponderance, in incidences of oral cavity pre-malignant and malignant lesions. Similar study by Palve et al. recorded out of all oral lesion patients 60% were males and 40% were females (male to female ratio of 3: 2).[9] Another study by Pudasaini et al. also observed that the incidence of oral lesion re more among male patients.[10]

Most common site lesion that we observed is buccal mucosa in 54(43.55%) patients which is supported by the result of the study conducted by Modi et al. in their study site of lesion was buccal mucosa in (26.8%).[11]

We observed squamous cell carcinoma in 50 patients as the most common malignant lesion, which is similar to the results of Brandizzi D et al. study.[12]

On further classification moderately differentiated squamous cell carcinoma in 67.31% was the most common in the malignant patient group, than the well differentiated squamous cell carcinoma in 28.85% subjects of malignant group. Our results are in accordance to the results of Shah PY et al. study which recorded 57.35% cases of moderately differentiated squamous cell carcinoma followed by 30.88% cases of well differentiated squamous cell carcinoma.[13]

This study observed that Keratosis with mild dysplasia in 28.26% patients of pre-malignant group as the most common lesions than the by Oral submucous fibrosis in 21.83%, similar study by Kosam S et al. recorded 5.71% cases of Keratosis with mild dysplasia and 14.28% cases of Keratosis without dysplasia, his difference is attributed to the sample selection and study setup variations.[14]

5. Conclusion

Oral cavity lesions are often asymptomatic and confused with other clinical representations and therefore missed in clinical examinations. Most of lesion are detected at the pre-malignant or malignant stags hence the timely and accurate identification of various oral lesions is vital fotr the prevention of morbidity and mortality. Awareness about oral health and hygiene is necessary to prevent the oral health complications. Early detection of pre-malignant lesion id helpful in prevention of malignant cancer and complications. Along with clinical examination histopathological investigation should be done for lesions of oral cavity

6. Source of Funding

7. Conflict of Interest

The authors declare that they have no conflict of interest.

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