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A Clinico-Pathological Study of 200 Cases of Oral Cavity Lesions.

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ABSTRACT

Lesions involving oral cavity are very common in India especially in areas where tobacco, paan and related products are extensively used. Tongue, lips, floor of mouth, hard & soft palate, gingiva and buccal mucosa are usually involved. The aim and objective of study is to determine the frequency of these lesions and categorize them based on biopsies of such lesions. Oral cancer is 8th most common in men and ranks 14th among women worldwide. Two- third of the burden is borne by developing countries and 30% by India alone. 200 Biopsies of oral lesions were included in the study. Paraffin sections and routine H & E staining were done. Out of the total number of 200 patients with oral cavity lesions, neoplastic lesions (51%) were more common than non-neoplastic (38%) and pre-neoplastic lesions (11%). Neoplastic lesions were more common in males (86.3%), uneducated people (66%) and older age group. Among malignant lesions, Squamous Cell Carcinoma was the single most common entity constituting 95.1%. Two cases of verrucous carcinoma and one case each of small cell carcinoma, adenoid cystic carcinoma and acinic cell carcinoma were reported. Tongue was the most common site for malignant lesions (67.6% cases). Categorizing the oral cavity lesions according to histopathological features into various types helped us to know the clinical presentation, treatment and prognosis of the disease. Low socio economic status, smoking and un-education are the major risk factors.

Keywords: Oral cavity, neoplastic lesions, Squamous cell carcinoma.

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INTRODUCTION

Oral Cavity lesions are one of the most common lesions found in our day to day life. Oral cancer among all other lesions is a major problem in the Indian subcontinent where it ranks among the top three types of cancer in the country [1].

Age- adjusted rate 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 [2]. The variation in incidence and pattern of the disease can be attributed to the combined effect of ageing of the population, as well as regional differences in the prevalence of disease-specific risk factors [3].

Oral cancer is of significant public health importance to India. Firstly, it is diagnosed at later stages which result in low treatment outcomes and considerable costs to the patients who typically cannot afford this type of treatment [4].

Secondly, rural areas in middle- and low-income areas also have inadequate access to trained doctors and limited health services. As a result, delay has also been largely associated with advanced stages of oral cancer [5]. Earlier detection of oral cancer offers the best chance for long term survival and has the potential to improve treatment outcomes and make healthcare affordable [6].

Thirdly, oral cancer affects those from the lower socioeconomic groups, that is, people from the lower socio economic strata of society due to a higher exposure to risk factors such as the use of tobacco [7]. There is a significant difference in the incidence of oral cancer in different regions of the world, with the age-adjusted rates varying from over 20 per 100,000 populations in India, to 10 per 100,000 in the U.S.A, and less than 2 per 100,000 in the Middle East [8]. In comparison with the U.S. population, where oral cavity cancer represents only about 3% of malignancies, it accounts for over 30% of all cancers in India. The variation in incidence and pattern of oral cancer is due to regional differences in the prevalence of risk factors [9].

Oral cancers are the 8th most common in men and ranks 14th among women worldwide. These cancers represent 4% of total body cancers in males whereas in females it makes 2% of all the cancers. There were 2, 74,300 new cases and 1, 45,500 deaths worldwide in 2002[10]. Tobacco use and alcohol are known risk factors for cancers of the oral cavity. In India 57% of all men and 11% of women between 15-49 years of age use some form of tobacco. Besides smoking, use of smokeless tobacco is widely prevalent. The use of Betel quid (pan) - consisting of pieces of areca nut, processed or unprocessed tobacco, aqueous calcium hydroxide (slaked lime) and some spices wrapped in the leaf of piper betel vine leaf - is very common and is accepted socially and culturally in many parts of India. Additionally, Gutka, Zarda, Kharra, Mawa and Khainni are all dry mixtures of lime. Areca nut flakes and powdered tobacco custom mixed by vendors. In recent years, commercially available sachets of premixed areca nut, lime, and catechu, condiments with or without powdered tobacco have become very popular, particularly among younger Indians. Typically, the pan or Gutka is kept in the cheek and chewed or sucked for 10-15 minutes, with some users keeping it in overnight. Acquisition of the tobacco habit typically occurs early in life through imitation of a family member or peers. Various studies carried out across the country report that at least a third of school students less than 15 years of age have used one form or another of tobacco. However, with improved public health education, the prevalence of these risk factors is decreasing around the globe, including in India [11].

Hence it becomes an important responsibility on the part of pathologist to accurately diagnose these tumours.

The present study is designed to classify these lesions and tumours for clinicopathological spectrum.

MATERIALS AND METHODS

We carried out a study on 200 surgically resected specimens of oral cavity lesions received in our institution. The biopsy specimens (fixed in 10% formalin) were first grossly examined and then paraffin sections of 3-5 micron thickness were cut using leica microtome and stained with H & E⁽¹²⁾. These stained sections were examined under light microscope.



OBSERVATIONS

We have examined a total of 200 cases of oral cavity lesions in 2 years, of which 76 cases were non-neoplastic and 124 cases were neoplastic. Out of 124 neoplastic, 22 cases were diagnosed as benign or pre-neoplastic and 102 were malignant. Among all the malignant lesions, squamous cell carcinoma was the most common lesion with well differentiated grade being the most common.

Among these 200 cases, 141 (70.5%) patients were males and 59 (29.5%) were females.

Male: Female : : 2.4 :1

According to the age group, 80% of the total cases were observed in adult population [maximum cases were seen in age group of 51-60] and very low in pediatric population. An increase in incidence was also seen with advancing age.

50% of cases presented with the lesions of tongue. Next common sites were buccal mucosa and palate.

Non-neoplastic: According to the age group, incidence was highest in people of 3rd decade and similar in 4th and 5th decade and decreased thereafter.

Preneoplastic: Incidence seen above the age of 40 and very low in young people.

Neoplastic: Incidence of malignant lesions increased as the age advanced, low in young adults, and zero in pediatric group.

DISCUSSION

Lesions of oral cavity are very common. In most of the people it presents as an aphthous ulcer or mild focal inflammation. But among those people, only a minority goes for biopsy when the lesion becomes non-healing or of long duration.

Based on the histopathological studies, 200 cases have been differentiated into neoplastic as well as non-neoplastic lesions (ratio of neoplastic to non-neoplastic was 1.6:1). Although it is difficult to find out the exact incidence of various lesions, but few studies which were found for comparison have shown that benign lesions are more common than malignant ones.

All other factors like age, sex, education status, standard of living etc. were being taken into consideration in relation to the study of these oral cavity lesions.

Out of non-neoplastic lesions, pyogenic granuloma was found to be the most common. Out of 76 non-neoplastic lesions, 22 were diagnosed as having pyogenic granuloma. Non neoplastic lesions were more common in young adults, educated people (64.5%). The incidence was similar in both sexes, but slightly higher in females representing 51.3% of the cases. Tongue was found to be the most common site for non neoplastic lesions (36.8%).

Among 22 cases of pre-neoplastic lesions dysplasia was the most common entity (54.5%). Pre-neoplastic lesions were more common in older age group, uneducated people (72.7%) and males (72.7%).

Out of the malignant lesions, carcinoma of oral cavity was the most frequently encountered lesion. Most common cancer among malignant lesions was squamous cell Ca. Malignant lesions were more common in older (more than 40 years of age), uneducated people (66%) and males (86.3%). Tongue was the most common site (67.6%) for malignant lesions.

Histological Grade of SCC

In our study well differentiated SCC have been found to be the most common histological grade among all SCC cases. Results were compared with that of Mehotra et al and Fronie et al.

Next common in frequency were moderately and poorly differentiated SCC. 3 cases of poorly differentiated SCC have been reported. All the 3 cases were males, above 45 years of age and uneducated. 2 of them were smokers while one was having the habit of both smoking and drinking alcohol. 2 cases of verrucous carcinoma, 1 case each of small cell carcinoma, adenoid cystic carcinoma and acinic cell carcinoma have been reported. Thus, these lesions are rare.

Table 1: Show the types of Oral Cavity Lesions (Neoplastic and Non-neoplastic) n=200

| Type No. | No. of Patients | %age |
|-----------------------|-----------------|------|
| Non-neoplastic | 76 | 38 |
| Pre-neoplastic | 22 | 11 |
| Neoplastic –Malignant | 102 | 51 |
| Total | 200 | 100 |

Table 2: Showing the distribution of patients in Non-neo plastic lesions (n=200)

| Histological Diagnosis | No. of Patients | %age |
|-----------------------------------|-----------------|------|
| Hemangioma | 04 | 5.3 |
| Pyogenic Granuloma | 22 | 29.0 |
| Fibrous epulis | 11 | 14.5 |
| Non-specific chronic Inflammation | 13 | 17.1 |
| Retention Cyst | 10 | 13.2 |
| Hyperplasia | 9 | 11.8 |
| Ulcer | 5 | 6.5 |
| Lichen Planus | 1 | 1.3 |
| Cysticercus Cellulosae | 1 | 1.3 |
| Total | 76 | 100 |

Table 3: Showing distribution of patients in Preneoplastic Lesions (n=220)

| Histological Diagnosis | No. of Patients | %age |
|------------------------|-----------------|------|
| Dysplasia | 12 | 54.5 |
| Papilloma | 4 | 18.3 |
| Leukoplakia | 5 | 22.7 |
| Neuroma | 1 | 4.5 |
| Total | 22 | 100 |

Table 4: Showing distribution of patients in Neoplastic (Malignant) Lesions(n=102)

| Histological Diagnosis | No. of Patients | %age |
|------------------------|-----------------|------|
| Squamous Cell Ca | 97 | 95.1 |
| Adenoid Cystic Ca | 1 | 1.0 |
| Acinic Cell Ca | 1 | 1.0 |
| Verrucous Ca | 2 | 1.9 |
| Small Cell Ca | 1 | 1.0 |
| Total | 102 | 100 |

Table 5: Showing histological Grade of Squamous Cell Carcinoma

| Study | Well Differentiated | Mod. Differentiated | Poorly Differentiated |
|-------------------------------------|---------------------|---------------------|-----------------------|
| Mehotra et al(2003) ⁽¹³⁾ | 56.00% | 42.00% | 1.30% |
| Fronie et al (2013) ⁽¹⁴⁾ | 53.00% | 31.30% | 15.60% |
| Present Study (2013) | 57.70% | 39.20% | 3.10% |

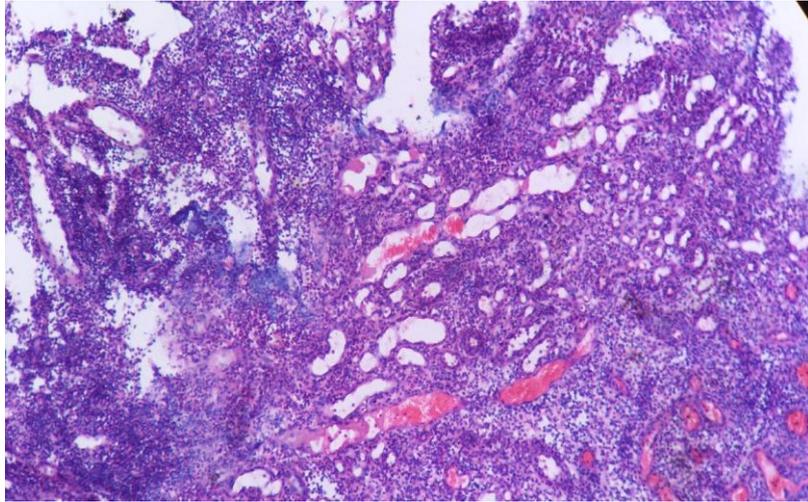


Figure 1: Photomicrograph of Pyogenic Granuloma showing proliferating capillaries separated by inflammatory infiltrate and edema (H and E x 100)

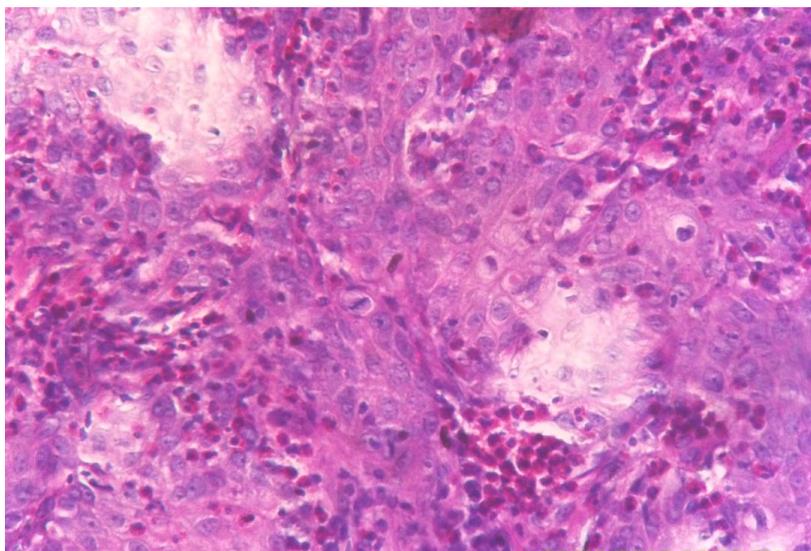


Figure 2: Photomicrograph showing Squamous cell carcinoma (H and E x 400)

SUMMARY AND CONCLUSION

In conclusion, oral cavity lesions were frequently occurring in adults who may display various histopathological patterns and a pathologist needs to be familiar with these lesions. Correct identification of the lesions is important and awareness among the people for harmful effects of smoking and tobacco especially in developing countries like ours is a dire need of time.

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