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# RESEARCH ARTICLE

## HISTOPATHOLOGICAL SPECTRUM OF ORAL CAVITY LESIONS-A HOSPITAL BASED STUDY

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**ABSTRACT**

***Background:*** A wide variety of lesions both neoplastic and non-neoplastic are seen in the oral cavity. Benign lesions are the most predominant histopathologic diagnosis. ***Objectives:*** The present study was undertaken to study the clinical and histopathological pattern of oral cavity lesions diagnosed in our department. ***Methods:*** A retrospective one year study was carried out in the Department of Pathology, GMC Srinagar and the all oral cavity biopsies received by the department were included in the study. ***Results:*** A total of 283 oral cavity lesions were diagnosed in the department. Non-neoplastic lesions were predominant category accounting for 72.4% of cases. Malignant lesions comprised of 9.54%of cases. Squamous cell carcinoma was the most common malignant tumor accounting for (4.59%). The buccal mucosa was the most affected site (41.34%). ***Conclusion:*** Non-neoplastic lesions were most predominant pathology affecting oral cavity in our study. Malignant lesions can mimic benign pathology clinically so histopathology is mandatory for exact diagnosis and patient management.



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# INTRODUCTION

India ranks second in the consumption of tobacco and the third largest producer in the world as per Global Adult Tobacco Survey Report 2009-2010[(1)]. It has been proved that there is relationship between ill-fitting dentures, tobacco chewing and cigarette smoking with pathological lesions, both benign and malignant [(2, 3)]. The oral cavity is a very common site for various tumor and tumor like lesions. Benign lesions are the most common of between lesions oral cavity [(4-6)]. Among the malignant lesions, squamous cell carcinoma is the most common type [(7, 8)]. Majority of oral lesions are usually silent and asymptomatic, however, overlapping presentations are noted with various systemic disorders thereby causing difficulty in clinical diagnosis [(9, 10)]. In addition, malignant lesions can mimic benign process in early stages so accurate diagnosis is important for patient management. Histopathology is the gold standard for diagnosis. The present study was undertaken to assess the pattern of oral cavity lesions at our institute.

# MATERIALS AND METHODS

This was a retrospective study carried in the Department of Pathology, Government Medical College Srinagar over a period of one year. All the biopsy specimens from oral cavity lesions received in the department were included in the study.

Relevant clinical details were obtained from histopathology requisition forms and hematoxylin and eosin stained slides were reviewed. The parameters included in the study were patient's age, gender, location and histopathological diagnosis. Inadequate biopsies and biopsies with non-diagnostic features were excluded from the study

# RESULTS

A total of 283 cases were included in the study with age range from 2.5 to 95years. The youngest patient (2.5 years male) presented with cellular infiltrative angiolipoma and the oldest patient (95 years female) was diagnosed with squamous cell carcinoma. The mean age of the patients was 39.08 years. The cases were almost equally distributed among males (138 cases, 48.76%) and females (145 cases, 51.23%) with a male to female ratio of 1:1.05. The age wise distribution of cases is given in Table 1. The lesions occurred most commonly in 4th to 6th decade. The most common site of involvement was buccal mucosa (117 cases, 41.34%) followed by tongue (106 cases, 37.45%). Out of 283 cases 205(72.43%) were non-neoplastic, 51(18.02%) were benign and were 27(9.54%) malignant (Table 2). Among non-neoplastic lesions chronic nonspecific inflammatory lesions (43 cases, 15.19%) were most common followed by pyogenic granuloma (37 cases, 13.07%) and Radicular cyst (20 cases7.06). In the non-neoplastic category hemangioma (7 cases, 2.47%) was the

most common diagnosis. Squamous cell carcinoma was the most common malignant lesion account for a total of 13(4.59%) cases.

**Table 1. Age distribution of oral cavity lesions.**

| Age Group (in Years) | Number Of Cases |
|---|---|
| < 10 | 2 |
| 10-19 | 39 |
| 20-29 | 50 |
| 30-39 | 54 |
| 40-49 | 41 |
| 50-59 | 54 |
| 60-69 | 25 |
| ≥70 | 18 |

**Table 2. Major Category Of Oral Cavity Lesions**

| Nature of Lesion | Number of Cases (%) |
|---|---|
| Non-neoplastic | 205(72.43%) |
| Benign | 51(18.02%) |
| Malignant | 27(9.54%) |

**Table 3. Histopathological diagnosis of oral cavity lesions**

| Nature of Lesion | Histopathological Diagnosis | Number of cases(%) |
|---|---|---|
| Non-Neoplastic Lesions | Chronic inflammatory | 43(15.19%) |
| | Pyogenic Granuloma | 37(13.07%) |
| | Radicular Cyst | 24(8.48%) |
| | Inflammatory Papillary Hyperplasia | 20(7.06%) |
| | Central Giant Cell Granuloma | 18(6.36%) |
| | Irritation Fibroma | 14(4.94%) |
| | Lichen Planus | 12(4.24%) |
| | Fibroepithelial polyp | 9(3.18%) |
| | Dentigerous Cyst | 8(2.82%) |
| | Chronic Sialadenitis | 5(1.76%) |
| | Mucocele | 5(1.76%) |
| | AV Malformation | 3(1.06%) |
| | Others* | 8(2.82%) |
| Benign Lesions | Hemangioma | 7(2.47%) |
| | Squamous Papilloma | 6(2.12%) |
| | Osteoma | 4(1.41%) |
| | Pleomorphic Adenoma | 4(1.41%) |
| | Cemento-ossifying Fibroma | 3(1.06%) |
| | Adenomatoid Odontogenic Tumor | 2(0.7%) |
| | Ameloblastoma | 2(0.7%) |
| | Lymphangioma | 2(0.7%) |
| | Ossifying fibroma | 2(0.7%) |
| | Others | 19(6.7%) |
| Malignant Tumors | Squamous Cell Carcinoma | 13(4.59%) |
| | Mucoepidermoid Carcinoma | 3(1.06%) |
| | Polymorphous low Grade Adenocarcinoma | 3(1.06%) |
| | Small Round Cell Tumor | 2(0.7%) |
| | Adenoid Cystic Carcinoma | 1(0.35%) |
| | Verrucous Carcinoma | 1(0.35%) |
| | Melanoma | 1(0.35%) |
| | Lymphoma | 1(0.35%) |
| | Leiomyosarcoma | 1(0.35%) |
| | Osteosarcoma | 1(0.35%) |

*Others- Chronic granulomatous inflammation (n=2), retention cyst(n=1), antibioma(1), verrucous wart(1), odentogenic keratocyst(1), brown tumor(1)

Mucoepidermoid carcinoma was second most common malignancy accounting for 1.06% of cases. The mean age of patients diagnosed with malignancy was 55.7 years. The histopathological diagnosis of oral cavity lesions is given in Table 3. Malignant lesions occurred more commonly in males (19 cases, 70.37%) than females (8 cases 29.62%) with a male to female ratio of 2.37:1(Chart 1).

# DISCUSSION

The oral cavity is a site for multitude of pathological lesions which may be non-neoplastic, benign or malignant. The present study was undertaken to assess the histopathologial pattern of oral cavity lesions. In the present study the mean age of patients was 39.08 years with age range from 2.5 to 95 years.

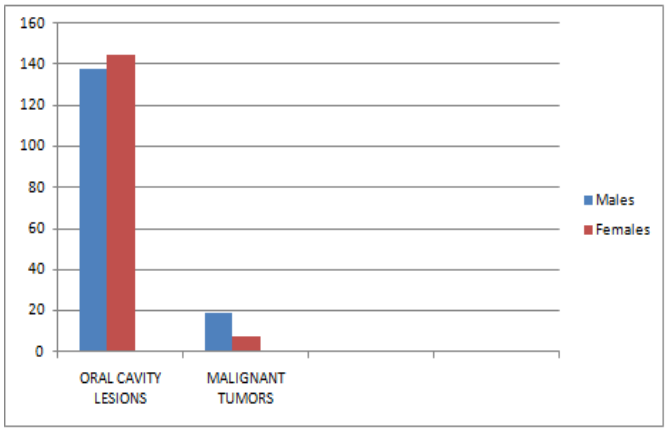


**Chart 1. Demontrating sex distribution of oral cavity lesions and in malignant tumors of oral cavity**

Similar observations were made by Rajan A et al[11] and Nikunj VM et al[6]. In our study the peak incidence was seen in 4th to 6th decade which was comparable with the observations made by Swati P et al[12] and Nadia Z et al[13] while Nikunj VM al [6]and Al-Khateeb TH[4] observed a peak incidence in 2nd to 4th decade. In our study females were slightly more affected than males with a male to female ratio of 1:1.05 which was similar to the observations made by Nadia Z *et al* [13]. In contrast Rajan A et al[11] and Swati P et al[12] reported preponderance of males in their studies. However, the malignant lesions were more common in males than females with a ratio of 2.37:1. Oral cavity lesions can affect any site and different observations have been made by different authors We observed that buccal mucosa was the most common site of involvement(41.34%) followed by tongue (cases37.45%), similar observations were made by Swati P et al[12] and Mehta VN et al[6]. Nadia Z *et al* [13] et observed that mandible was the most common site and tongue was the most common site of involvement in the observation made by Rajan A et al[11]. In our study non-neoplastic lesions were most common followed by benign lesions and the malignant lesions were the least common. The data from different authors show wide variation regarding the prevalence of benign and malignant lesions. Nikunj VM *et al* [6] reported 75% lesions as benign and Shamim *et al* [3] observed that non-neoplastic lesions(75.5%) were more common than neoplastic lesions. These observations were comparable with our results. Swati P *et al* [12] observed that malignant tumors were the dominant histopathologic diagnosis, similar observations were made by Nadia Z *et al* [13]. Rajan A *et al* [11] reported 47.36% cases as malignant. Mohit *et al* [14] also reported malignant lesions as predominant histopathology type. The lower percentage of malignant tumors in our study could be attributable to less consumption of chewable tobacco in general population, however, large scale epidemiological studies are needed to validate it. Oral Squamous cell carcinoma was the most common malignancy reported in our study which was similar to the observations made by Nikunj VM *et al* [6], Swati P *et al* [12], Prabhakar P *et al* [10] and others.

***Conflict of Interest***: None

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