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# Histopathological spectrum of lesions of oral cavity and oropharynx in a tertiary care center

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ABSTRACT

**Background:** Oral cavity and oropharynx are involved by a variety of non neoplastic and neoplastic lesions. Among these, oral cancer is a major malignancy with higher incidence in developing countries.
**Aims and Objectives:** To assess the histopathological patterns of oral cavity and oropharyngeal lesions.
**Materials and Methods:** A one year observational study was undertaken in the Department of Pathology of our institution. Biopsies and resection specimens from oral cavity and oropharyngeal lesions received were fixed, grossed, processed and stained with Hematoxylin and Eosin (H&E) stain. The histological features were studied under light microscope and diagnosis was made.
**Results:** A total of 107 cases were studied. Of these, 71 (66 %) were males and 36 (34%) were females. The neoplastic lesions (68 cases, 64 %) were more than non-neoplastic lesions (39 cases, 36%). Squamous cell carcinoma was the most common malignancy and also the most frequently diagnosed lesion (43 cases, 40.2%). The commonest site involved was tongue (36, 33.6%) followed by buccal mucosa (29, 27.1%).
**Conclusion:** Histopathological examination remains the gold standard for confirming the exact nature of these lesions. Clinical examination combined with histopathological examination is essential for accurate diagnosis and management.



## 1. Introduction

Oral cavity and oropharynx are involved by a variety of non neoplastic and neoplastic lesions. Many benign, precancerous lesions and malignant tumors arise commonly in the oral cavity.[1] In India, oral cancer is the $3^{rd}$ commonest cancer. It is also the 8th most common cancer worldwide. Its age standardized incidence rate is 12.6 per 100,000 population.[2] Most of these cancers are squamous cell carcinomas.

Among the malignant lesions arising from oral cavity and oropharynx, squamous cell carcinoma is the commonest.[3,4] The risk factors that have strong association with oral cavity squamous cell carcinoma include tobacco smoking and alcohol. Betel quid chewing and paan are other important predisposing factors in Asians including India. The role of high-risk human papillomaviruses (HPV) as causative agent of squamous cell carcinoma of the oropharynx is also being implicated.[1,5–7]

The clinical features of many of these lesions overlap with the oral presentations of systemic disorders; thus, making it difficult to diagnose these lesions clinically. Some lesions can be diagnosed based on history and clinical examination. However, some early-stage malignant lesions can mimic benign lesions clinically and therefore require further investigation for confirming the diagnosis. Histopathological examination of biopsies from these suspicious lesions remains the gold standard for diagnosis.[8,9]

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**Table 1:** Age wise distribution of lesions.

| Age (years) | Non-neoplastic | Benign | Premalignant | Malignant | Total (%) |
|---|---|---|---|---|---|
| 0-20 | 15 | 02 | - | - | 17 (16) |
| 21-40 | 09 | 06 | 01 | 11 | 27(25.2) |
| 41-60 | 12 | 08 | 02 | 21 | 43 (40.1) |
| 61-80 | 03 | 01 | - | 16 | 20 (18.7) |
| Total | 39 | 17 | 03 | 48 | 107 (100.0) |

**Table 2:** Histopathological spectrum of various oral and oropharyngeal lesions

| Histopathology diagnosis | Number of cases | Percentage (%) |
|---|---|---|
| **Non neoplastic** | | |
| Chronic inflammation | 23 | 21.5 |
| Chronic tonsilitis | 10 | 9.3 |
| Fibroma | 2 | 1.9 |
| Mucocele | 4 | 3.7 |
| **Benign** | | |
| Pyogenic granuloma | 4 | 3.7 |
| Hemangioma | 5 | 4.7 |
| Squamous papilloma | 5 | 4.7 |
| Pleomorphic adenoma | 3 | 2.8 |
| **Premalignant** | | |
| Severe dysplasia | 3 | 2.8 |
| **Malignant** | | |
| Squamous cell carcinoma | 43 | 40.2 |
| Verrucous carcinoma | 3 | 2.8 |
| Basal cell carcinoma | 2 | 1.9 |
| Total | 107 | 100.0 |

**Table 3:** Distribution of lesions according to site

| Site | Non neoplastic | Benign | Premalignant | Malignant | Total (%) |
|---|---|---|---|---|---|
| Buccal mucosa | 13 | 3 | 2 | 11 | 29 (27.1) |
| Tongue | 8 | 7 | - | 21 | 36 (33.6) |
| Tonsil | 10 | 1 | - | 3 | 14 (13.1) |
| Hard palate | 3 | 2 | - | - | 05 (4.7) |
| Retromolar area | 1 | - | 1 | 1 | 03 (2.8) |
| Lip | 4 | 3 | - | 2 | 09 (8.4) |
| Gingivobuccal sulcus | - | - | - | 7 | 07 (6.5) |
| Soft palate | - | 1 | - | 2 | 03 (2.8) |
| Floor of mouth | - | - | - | 1 | 01 (1.0) |
| Total | 39 | 17 | 3 | 48 | 107 (100.0) |

Accurate diagnosis is essential for proper management. Early detection and treatment helps to prevent disease progression. The present study was conducted to assess the patterns of various oral cavity and oropharyngeal lesions by histopathological examination.

## 2. Materials and Methods

A one year observational, retrospective study was undertaken in the Department of Pathology of our institution w.e.f. July 2022 to June 2023. Biopsies and resection specimens from oral cavity and oropharyngeal lesions received in the histopathology section of the department during this period were included.

The specimens received in 10% formalin were fixed, grossed and processed. Embedding was done in paraffin wax and sections were cut from the block. The sections were stained with Hematoxylin and Eosin (H&E) stain and examined under light microscope. The histological features were studied and the various lesions were diagnosed. Biopsies that were inadequate for opinion were excluded from the study. Relevant clinical details were obtained from histopathology requisition forms. The findings were noted, the data was analysed and presented in the form of tables.

## 3. Results

In the present study, a total of 107 cases were evaluated. Of these, 71 (66 %) were males and 36 (34%) were females. The male to female ratio was 1.9:1. The age range of patients was from 5 to 75 years with mean age of 43 years. The maximum cases involved 41-60 years age group as shown in Table 1.

The various non-neoplastic, benign, premalignant and malignant lesions diagnosed are as shown in Table 2. The neoplastic lesions constituted 64% (68) cases while the non-neoplastic lesions were 36% (39 cases). Squamous cell carcinoma was the most common malignant lesion. It also accounted for maximum number of cases in our study (43,40.2%).

Table 3 shows site wise distribution of the various lesions. Tongue was involved in maximum cases (36, 33.6%) followed by buccal mucosa (29, 27.1%). Inflammatory lesions were more commonly seen in the buccal mucosa while tongue was the most common site for malignancy.

## 4. Discussion

The oral cavity is a site for a variety of pathological lesions which may be non-neoplastic, benign, pre malignant or malignant. The present study was undertaken to assess the histopathological patterns of oral cavity and oropharyngeal lesions.

A total of 107 cases were studied. There were 71 males (66 %) and 36 females (34%) with male to female ratio of 1.9:1. This male preponderance is in accordance with many other studies.[10–15] The age range of patients was from 5 to 75 years with mean age of 43 years, comparable to studies by Kak et al.[2] and Gothami et al.[5] Maximum patients were in 41-60 years age group, similar to studies by Patro et al.[6] and Modi et al.[8]

The neoplastic lesions accounted for 64% (68) cases, greater than the non-neoplastic lesions (39, 36%). This is similar to studies by Patro et al.,[6] Modi et al.[8] and many other studies.[11,14,15] Chronic inflammatory lesions constituted highest number of cases among the non-neoplastic lesions (23, 21.5%). This was also seen in studies by Modi et al.,[8] Quyoom et al.[9] and Baruah et al.[14] Squamous cell carcinoma was the most common malignant lesion and also overall the most frequently diagnosed lesion. This is similar to studies by Modi et al.,[8] Agrawal et al.[10] and many others.[12–15]

Tongue was the most frequently involved site (36, 33.6%) similar to studies by Hossain et al.[7] and Agrawal et al.[10] Inflammatory lesions were more commonly seen in buccal mucosa while tongue was the most common site for malignancy. This was also observed in studies by Modi et al.[8] and Agrawal et al.[10]

## 5. Conclusion

A variety of lesions involving the oral cavity and oropharynx were included in our study. Histopathological examination remains the gold standard for confirming the exact nature of these lesions. Clinical examination combined with histopathological examination is essential for accurate diagnosis and management.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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