HISTOPATHOLOGICAL SPECTRUM OF ORAL CAVITY LESIONS

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ABSTRACT

BACKGROUND

Oral cancer is a common problem in the Indian region, and it is one of top three cancers in our country. Many epidemiological studies have concluded that excess intake of alcohol and tobacco leads to increased risk of oral cavity cancers. In addition to this, in India there is a high prevalence of chewing tobacco mixtures. The oral cavity represents the entrance to the upper aerodigestive tract, which begins at the lips and ends at the anterior surface of the faucial arch. It is lined by squamous epithelium with interspersed minor salivary glands. The oral cavity is continuously exposed to inhaled and consumed carcinogens and thus it is the most common site for the origin of malignant epithelial neoplasms in the head and neck region. Known carcinogens in the oral cavity include those present in tobacco, alcohol, and betel nuts. The association of human papilloma virus with oral cancer is not as well established as in oropharyngeal cancers. Primary tumours of oral cavity may arise from the surface epithelium, minor salivary glands, or submucosal soft tissues. More than 90% of malignant tumours in oral cavity are squamous cell carcinomas, and the remainder are minor salivary gland carcinomas and other rare tumours. Most patients with cancer in oral cavity are men, although the incidence of tongue cancer in women in the United States has progressively increased from 15% in the years 1927-1934 to 4% in the years 1988-1997. In the western world, the tongue and the floor of the mouth are the most common sites of origin for primary squamous cell carcinoma in the oral cavity. However, the retromolar trigone and buccal mucosa are the most frequently encountered primary sites in the area of world where chewing of tobacco and betel nuts is common.¹ We wanted to study the different types of oral cavity lesions.

METHODS

This is a prospective study performed in pathology department of GMC Jammu, a tertiary care hospital in Jammu for a duration of one year, from January 2018 to January 2019. A total of 114 cases were studied.

RESULTS

A total of 103 cases were studied. Age of patients varied from 6 to 75 years, out of which males were affected more often than females with M: F ratio of 4:1. The most common site involved was buccal mucosa (30.1%), followed by tongue (28%). Out of 103 cases 77 cases (74.7%) were malignant and 26 cases (25.2%) were benign. Squamous cell carcinoma is the most common lesion accounting for 67.9% cases of all the lesions studied.

CONCLUSIONS

Oral cavity lesions have a vast spectrum of lesions ranging from tumour like lesions to benign and malignant tumours. Our study concluded that squamous cell carcinoma was the most common malignant lesion of oral cavity. Histopathology is an important tool in the diagnosis and management.

KEY WORDS

Oral Cavity, Buccal Mucosa, Squamous Cell Carcinoma

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The oral cavity represents the entrance to the upper aerodigestive tract, which begins at the lips and ends at the anterior surface of the faucial arch. It is lined by squamous epithelium with interspersed minor salivary glands. The oral cavity is continuously exposed to inhaled and consumed carcinogens and thus it is the most common site for the origin of malignant epithelial neoplasms in the head and neck region.

Known carcinogens in the oral cavity include those present in tobacco, alcohol, and betel nuts. The association of human papilloma virus with oral cancer is not as well established as in oropharyngeal cancers. Primary tumours of oral cavity may arise from the surface epithelium, minor salivary glands, or submucosal soft tissues. More than 90% of malignant tumours in oral cavity are squamous cell carcinomas, and the remainder are minor salivary gland carcinomas and other rare tumours. Most patients with cancer in oral cavity are men, although the incidence of tongue cancer in women in the United States has progressively increased from 15% in the years 1927-1934 to 4% in the years 1988-1997. In the western world, the tongue and the floor of the mouth are the most common sites of origin for primary squamous cell carcinoma in the oral cavity. However, the retromolar trigone and buccal mucosa are the most frequently encountered primary sites in the area of

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world where the chewing of tobacco and betel nuts is common.¹

Oral cancer is a major health problem in the Indian region and it is one of the top three cancers of the country.² Many epidemiological studies have concluded that excess intake of alcohol and tobacco can lead increased risk of developing oral and pharyngeal tumours.³ Also in India there is high prevalence of chewing tobacco mixtures.⁴

Oral cavity lesions are usually common but ignored. They may be benign or malignant. Common benign lesions are lymphoid hyperplasia, retention cyst, inflammation, haemangioma, fibroma etc. And among malignant lesions Squamous cell carcinoma is the most common. Oral cancer ranks 8th most common cancer worldwide and 3rd most common cancer in India. Age standardized incidence rate of oral cancer is 12.6 per 100,000 population.⁵

In spite of easy reach to oral cavity lesions for direct examination these malignancies still remain undetected for a long time, until a late stage and the survival rate for oral cancer has remained essentially unchanged over the past three decades. Proper management of the patient with the premalignant and malignant oral lesions starts with an accurate diagnosis. Histopathologic assessment of a tissue biopsy of the lesion is a standard method for diagnosis of suspicious lesion.⁶

Aim of The Study

The present study was undertaken to study the different types of oral cavity lesions.

METHODS

This study included 103 specimens of lesions of oral cavity which were sent to department of pathology of GMC Jammu, a tertiary care hospital of Jammu region for histopathology from January 2018 to January 2019. Sample size was taken based on the convenience of the study. Our study was a prospective study in which data like age of patient, sex and site of lesion were noted from the clinical data of the patients. Got approval from IEC and consent was taken from all patients.

Statistical Analysis

The data was collected and analysed using standard statistical chi-square test, $P < 0.05$ statistically significant. Data was entered in Microsoft excel and analysis was done using SPSS version 22.

RESULTS

A total of 103 cases of oral cavity lesions were studied. The age varied from 6 years to 75 years. A six-year-old male child with chronic tonsillitis was the youngest patient and the 75 years old male with Squamous cell carcinoma of buccal mucosa was the oldest one. Majority of patients were in the age range of 20-40 years followed by 40-60 years. Among 103 cases 77 (74.7 %) cases were malignant and 26 (25.2 %) cases were benign. Out of total 103 cases, 84 (81.5%) were males and 20 (19.4%) were females with a Male: Female ratio of 4:1. Commonest clinical presentation of oral lesion were ulcero-proliferative growth, ulcers, nodular growth and proliferative growth.

Sl. No.	Sex	Number	Percentage
1.	Male	84	81.5 %
2.	Female	20	19.4 %

Table 1. Sex Distribution

In our study out of 103 cases, there were 81.5% males and 19.4% females.

Sl. No.	Site	Number	Percentage
1.	Buccal mucosa	31	30.1 %
2.	Tongue	29	28 %
3.	Tonsil	15	14.5 %
4.	Palate	13	12.6 %
5.	Gingiva	05	4.8%
6.	Lip	04	3.8 %
7.	Alveolus	02	1.9 %
8.	Mandible	02	1.9 %
9.	Angle of mouth	01	0.9 %
10.	Maxilla	01	0.9 %
	Total	103	100 %

Table 2. Number of Cases According to Sites

The sites of involvement of various lesions included buccal mucosa 31 (30.1 %), tongue 29 (28 %), tonsil 15 (14.5 %), palate 13 (12.6 %), gingiva 05 (4.8 %), lip 04 (3.8 %), alveolus and mandible 02 (1.9 %) cases each, maxilla and angle of mouth 01 (0.9 %) cases each.

Sl. No.	Diagnosis	Number	Percentage
1.	Squamous cell carcinoma	70	67.9 %
2.	Haemangioma	06	5.8 %
3.	Chronic tonsillitis	05	4.8 %
4.	Chronic inflammation	02	1.9 %
5.	Squamous papilloma	03	2.9 %
6.	Verrucous carcinoma	02	1.9 %
7.	Fibrolipoma	02	1.9 %
8.	Ameloblastic carcinoma	02	1.9 %
9.	Epulis	02	1.9 %
10.	Lichen planus	02	1.9 %
11.	Pleomorphic adenoma	01	0.9 %
12.	Adenoid cystic carcinoma	01	0.9 %
13.	Lymphangioma	01	0.9 %
14.	Basal cell carcinoma	01	0.9 %
15.	Angiofibroma	01	0.9 %
16.	Fibrous histiocytoma	01	0.9 %
17.	NHL	01	0.9 %
	Total	103	100 %

Table 3. Types of Neoplastic and Non-Neoplastic Lesions of Oral Cavity

The various lesions have been depicted in table 3.

In our study majority of cases were of Squamous cell carcinoma constituting 67.9% cases, Haemangioma 5.8% cases, chronic tonsillitis 4.8% cases, chronic inflammation 1.9% cases, squamous papilloma 2.9% cases, verrucous carcinoma, fibrolipoma, ameloblastic carcinoma, epulis and lichen planus constituting 1.9% cases each respectively and pleomorphic adenoma, adenoid cystic carcinoma, lymphangioma, basal cell carcinoma, angiofibroma, fibrous histiocytoma and NHL constituting 0.9% cases each respectively.

Figure 1. Squamous Papilloma

Figure 2. Squamous Cell Carcinoma

Figure 3. Adenoid Cystic Carcinoma

Figure 4. Verrucous Carcinoma

Figure 5. Basal Cell Carcinoma

DISCUSSION

In our study of total 103 cases, male to female ratio was 4:1. This indicates that premalignant and malignant lesions are more common in males than females, the reason for this is excess intake of alcohol and tobacco by males than females in India. In study by Palve et al.⁷ 60% cases were males and females were 40% out of total 50 cases with M: F ratio of 3:2, which is similar to our finding. Male preponderance also reported in studies by Sengun et al.⁸ and Pudasaini et al.⁹

Buccal mucosa (30.1%) was the most common site involved in our study, followed by tongue (28%), tonsil (14.5%), palate (12.6%), gingiva (4.8%) and lip (3.8%). Modi et al.¹⁰ also reported similar findings where buccal mucosa constituted (26.8%), tongue (26.1%), hard palate (12.6%) gingiva (2%) and lip (6.7%). Findings by Mehta et al.¹¹ were buccal mucosa (32%), tongue (19%), gingiva (3%), lip (22%), and hard palate (2%). Buccal mucosa was the most frequently

involved site followed by tongue of benign and premalignant lesions in study by Mehrotra et al.¹²

Most lesions of squamous cell origin have a varying degree of histological progression from in situ to invasive carcinoma. The histological grade of the lesion generally reflects the aggressiveness of the tumour. Squamous cell carcinoma may range from well differentiated to poorly differentiated as well as undifferentiated and sarcomatoid, as defined by the extent to which tumour differentiates nuclear pleomorphism, cytological atypia, and morphological resemblance to benign squamous mucosa. The histological grade reflects the aggressiveness of the tumour. Tumours that are undifferentiated or sarcomatoid are the most aggressive. The most important histological feature of the primary tumour that affects selection of treatment and eventual prognosis is its depth of infiltration.¹

In our study squamous cell carcinoma (67.9%) was the most common lesion. The most common site was buccal mucosa followed by tongue. Similar results were seen in studies by Misra et al.¹³ and Hassawi et al.¹⁴ who reported 60.12 % and 58.9 % respectively.

In our study, haemangioma was observed was in 5.8 % cases, similar result was seen in study by Sharma et al.¹⁵ with 5.3% cases.

Squamous papilloma was reported in 2.9 % cases in our study, similarly Sharma et al.¹⁵ reported 3.3 % and Mehta et al.¹¹ 2 % cases.

Lichen planus was reported in 1.9 % cases, but Sharma et al.¹⁵ reported a slightly low incidence with 0.6 % cases.

In our study chronic inflammation was observed in 1.9% cases, which is similar to results of Kosam et al.¹⁶ 2 % and Sharma et al.¹⁵ with 0.6 % cases.

Verrucous carcinoma is a variant of Squamous cell carcinoma. It appears as a white plaque over the mucosa. In our study there were 2 cases (1.9 %), these results are in accordance with Kosam et al.¹⁶ 1.4%, Durazzo et al.¹⁷ 1.1 %, Bhattacharjee et al.¹⁸ 0.62 %, and Bal et al.¹⁹ 1.9 %.

Adenoid cystic carcinoma was reported in 0.9% cases, similar findings were seen in studies by Bhattacharjee et al.¹⁸ 0.93%, Bal et al.¹⁹ 1%, Manjari et al.²⁰ 1.71% and Shah et al.²¹ with 1.33% cases.

One case of non-Hodgkin lymphoma (0.9%) was seen in our study, similar result seen in study by Manjari et al.²⁰ 0.38% and shah et al.²¹ 2.67% cases.

In our study one case (0.9%) of pleomorphic adenoma was seen similar results seen in study by Sharma et al.¹⁵ with 0.6%.

One case (0.9%) of lymphangioma was observed in our study, similar results of 1.3% cases were seen in study by Sharma et al.¹⁵

CONCLUSIONS

Oral cavity lesions include a wide spectrum of lesions ranging from tumour like lesions to benign and malignant tumours. Our study concluded that squamous cell carcinoma was the most common malignant lesion of oral cavity. Histopathology is an important tool in the diagnosis and management.

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