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# Oral Squamous Cell Carcinoma Pattern in Manipal Teaching Hospital, Nepal

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**Abstract** Squamous cell Carcinoma of oral cavity is amongst the first ten commonest carcinoma in world. This article shows the squamous cell carcinoma of oral cavity reported in this hospital over a period of 3 years. This descriptive hospital based study consists of cases of oral squamous cell carcinoma of oral cavity presented at the Dentistry department of Manipal Teaching Hospital, Pokhara, Nepal from September 2012 to August 2015. All cases were clinically examined and provisionally diagnosed and histopathological examination done to confirm the diagnosis. There were 58 oral squamous cell carcinoma cases, 27 (46.6%) males and 31 (53.4%) females. The age of squamous cell carcinoma cases was above 40 years. The maximum number of squamous cell carcinomas (39.7%) affected tongue. The other common sites were buccal mucosa (13.8%) and alveolus (13.8%).Histological pattern of oral Squamous cell carcinoma shows 60.5% is well differentiated, 32.8% moderately differentiated and 6.9%is poorly differentiated oral squamous cell carcinoma. The results of this study shows females were more affected due lack of education and early access to medical attention. Tongue was the most affected site due to presence of sharp tooth edges.

***Keywords:*** *squamous cell carcinoma, female, nicotine*

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## 1. Introduction

Cancer is one of the major problems to public health in the developed countries and increasingly in the developing countries. According to WHO in the developed countries cancer is the second common cause of death [1]. Oral carcinoma is a neoplasm which includes oral cavity, and that starts from the lips and ends at the anterior pillar of fauces [2]. The oral cancer is more common in the developing countries [3,4]. Oral cancer is the first ten commonest malignancies in the world [5,6]. Incidence varies from one country to another country and one from region to another region within the country. The highest incidence of oral squamous cell carcinoma are found in the countries of South -East Asia [6]. The oral cancer is more prevalent in males.

The incidence of Oral squamous cell carcinoma is more in India and Indian subcontinent. A number of etiologic factors are responsible for the occurrence of oral squamous cell carcinoma. The most important etiological factors are tobacco use, alcohol consumption, chronic trauma, radiations, viruses, presence of sharp tooth edges and ill fitted dentures[5,7]. Most of the carcinoma of the oral cavity has been associated with the habit of chewing various forms of smokeless tobacco which include betal quid with tobacco [5,8]. Various studies done in Nepal have also shown that the use of tobacco is the most important factor for carcinoma of the oral cavity [5].

Smoking tobacco and chewing betel quid, habits are the main factors responsible for high incidence in huge in south East Asian population [5]. Carcinoma of oral cavity is seen in various forms. They may seen in the forms of white plaques, ulcers, fungating mass or invasive lesions.

The most common type of oral cancer is squamous cell carcinoma which is histologically confirmed and constitute 90%-95% to 88.72% [6]. The buccal mucosa is the most common site for Squamous cell carcinoma followed by anterior 2/3rd of tongue, gingival, lip, hard palate, floor of mouth and retromolar region.6 Similarly, chronic smoker have high incidence of oral squamous cell carcinoma involving posterolateral surface of tongue and floor of mouth [7].

Oral Squamous cell carcinoma is a malignant neoplasm of epithelial cells showing squamous differentiation and characterized by the formation of keratin and intercellular bridges [8].

## 2. Aim of The Study

Aim of the study was to evaluate the pattern of oral carcinoma in the population of Western Region of Nepal reporting to Manipal Teaching Hospital.

## 3. Material and Methods

This hospital based descriptive study consists of 58 cases of carcinoma of oral cavity who had reported to the

Dentistry department of Manipal Teaching Hospital from September 2012 to August2015. All cases were clinically examined and provisionally diagnosed. Biopsy was taken from the lesions and the tissues were fixed in 10% formalin and submitted to histopathology department of Manipal Teaching Hospital for histological confirmation. The clinical data provided with each biopsy sample included age and sex of the patient, type of the lesion and site of the lesion.

### 3.1. Sample Size Calculation

In trial study done prior to original study shows percentage of well differentiated squamous cell carcinoma was 60% with precision 13% is desired, confidence interval 95%requied sample size was taken from 55 patients [9].

## 4. Results

There were 58 oral squamous cell carcinoma cases in the study, including 27 (46.6%) males and 31 (53.4%) females. 13(22.4%) out of 58 cases were in the age group of 40 to 49 years. Similarly 16(27.6%) were in 50-59 and 60-69 age groups.11 (19%) in age group 70-80 and 2(3.4%) are above 80 years of age. The maximum number of the patients were illiterate 29(50%) and only 8(13.8%) were educated. (Table 1).

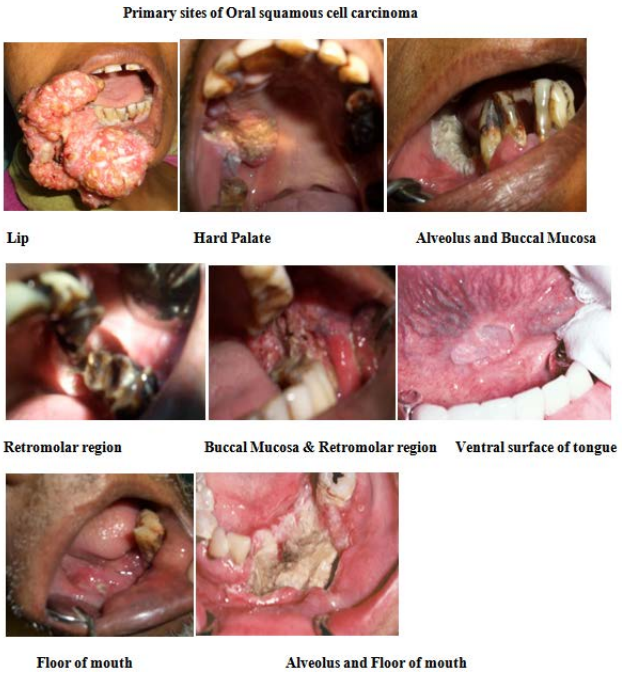
**Table 1. Age, Sex and Educational Status-wise Distribution of Oral Squamous Cell Carcinoma**

| Sex | No. | Percentage | Confidence Interval (CI) |
|---|---|---|---|
| Male | 27 | 46.6 | 33.3%,60.1% |
| Female | 31 | 53.4 | 39.9%,66.7% |
| Total | 58 | 100 | |
| Age Group (Years) | | | |
| 40-49 | 13 | 22.4 | 12.5%,35.3% |
| 50-59 | 16 | 27.6 | 16.7%, 40.9% |
| 60-69 | 16 | 27.6 | 16.7%, 40.9% |
| 70-79 | 11 | 19.0 | 9.9%, 31.4% |
| Above 80 | 2 | 3.4 | 0.4% , 11.9% |
| Total | 58 | 100 | |
| Educational Status | | | |
| Illiterate | 29 | 50.0 | 24.0%,49.9% |
| Literate | 21 | 36.2 | 36.6%,63.4% |
| Educated | 8 | 13.8 | 6.1%,25.4% |
| Total | 58 | 100 | |

The maximum number of oral squamous cell carcinomas 23(39.7%) effected tongue. The other common sites were buccal mucosa and alveolus 8(13.8%) (Table 2).

**Table 2. Sites of Oral Squamous Cell Carcinoma**

| Sites | No. | Percentage | Confidence Interval (CI) |
|---|---|---|---|
| Buccal Mucosa | 8 | 13.8 | 6.1%, 25.4% |
| Retro Molar Region | 2 | 3.4 | 10.4%, 11.9% |
| Tongue | 23 | 39.7 | 227.0%, 53.4% |
| Floor Of Mouth | 3 | 5.2 | 31.1%, 14.4% |
| Alveolus | 8 | 13.8 | 46.1%, 25.4% |
| Soft Palate | 3 | 5.2 | 51.1%, 14.4% |
| Lower Lip | 3 | 5.2 | 61.1% , 19.0% |
| Angle Of Mouth | 3 | 5.2 | 71.1%, 14.4% |
| Gingival | 5 | 8.6 | 82.9%, 19.0% |
| Total | 58 | 100 | |




Among these, 35 (60.3%) were diagnosed as well differentiated, 19(32.8%) moderately differentiated and 4(6.9%) poorly differentiated squamous cell carcinomas. (Table 3).

**Table 3. Histological Pattern of Oral Squamous Cell Carcinoma**

| Pattern | No. | Percentage | Confidence Interval (CI) |
|---|---|---|---|
| Well Differentiated | 35 | 60.3 | 46.6%73.0% |
| Moderately Differentiated | 19 | 32.8 | 21.0%46.3% |
| Poorly Differentiated | 4 | 6.9 | 1.9%16.7% |
| Total | 58 | 100 | |

Table 4 shows the number of patients who use nicotine and alcohol are more likely to have oral squamous cell carcinoma38 (65.5%) and 30(51.7%) respectively.

**Table 4. Nicotine and Alcohol User among The Patients of Oral Squamous Cell Carcinoma**

| | Nicotine | Percentage | Alcohol | Percentage |
|---|---|---|---|---|
| User | 38 | 65.5 | 30 | 51.7 |
| Non-user | 20 | 34.5 | 28 | 48.3 |
| Total | 58 | 100 | 58 | 100 |

## 5. Discussions

Oral cancer is a common problem of South and South East Asian countries [1-10]. It is among the ten commonest cancers of the world

The most common age group affected by oral cancer as reported in the literature is 50-59 and 60-69 with percentage of 27.6% each which is similar to a study conducted at Shuakat Khanum Memorial Hospital from the period of 2003-2008 in which the mean age of the patient was 53 years [11]. A variety of histologic pattern of oral carcinoma with variable site distribution have been reported. The most common of these is well differentiated squamous cell carcinoma 35(60.3%) Almost maximum number of study has shown the incidence of oral squamous cell carcinoma in male is morebut, study done by Zulfiqar et al [12] at Mayo Hospital, Lahore, Pakistan observed equal prevalence of oral squamous cell

carcinoma in both genders.In very few studies have shown high tendency in females which may be due to illiteracy, neglected oral hygiene,poor socioeconomic condition, changing habits in high socioeconomic group and cultural habits in some rural area [13]. Similar types of studies in India reported a higher M:F ratio of 2.2:1 and 4.2:1 respectively [14]. The analysis of histologic pattern in most of the study reveals well differentiated squamous cell carcinoma predominated with spindle cell type, that is similar to a study conducted at Shuakat Khanum Memorial Hospital, and research done in Zimbabwean population [15]. It is seen that maximum number of oral squamous cell carcinoma was present in the older age group, in a study conducted by Mathur et al [16]. But in this study the incidence is high in female 31(53.4%) as compare to male 27 (46.6%). The reasons for this may be due to illiteracy. As our study shows most of them are illiterate 29(50%).

Again unlike other study the commonest site for oral squamous cell carcinoma is tongue 23(39.7%). In other study the most commonest site is buccal mucosa [12]. In this study it occupies second commonest site 8(13.8%). This might be due to presence of sharp tooth edges and use of alcohol and nicotine. Data taken from a single institution has many limitations. In present study, the information regarding tobacco and alcohol consumption is high. However, the data presented in this study is important for many reasons including the age groups, sex and extent of problem in population which are at the highest and lowest risk. This data reflects the specific population reporting to this hospital and but not the whole population of the community. Further such studies done over longer period of time at different levels of referral centers may help to identify the prevalence and histological patterns of oral squamous cell carcinoma, so planning for prevention activities can be carried out to minimize the incidence and mortality rates.

## 6. Conclusion

Oral squamous cell carcinoma is more common in older age group. Females are more affected due to lack of education and awareness.Tongue is the commonest site due to presence of sharp tooth edge resulting into chronic traumatic ulcer and neglected oral hygiene

## Declaration of Conflicting Interests

The authors declare that there is no potential conflicts of interest with respect to the research, authorship and /or publication of this article.

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