

# EVALUATING THE CORRELATION BETWEEN HISTOPATHOLOGICAL PATTERNS OF ORAL SQUAMOUS CELL CARCINOMA, AGE & SITE

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## ABSTRACT

*The objective of this study was to provide a baseline data on the pattern of oral squamous cell carcinoma in Karachi and to find a correlation between the clinical patterns of oral squamous cell carcinoma with age and site.*

*The retrospective cross sectional study was conducted. The patients of oral squamous cell carcinoma were examined from January 2007- December 2010 at oral maxillofacial department, Darul Sehat Hospital Karachi. All retrievable case files were obtained and necessary data were extracted regarding age, gender, site and histological type. All cases were clinically examined and provisionally diagnosed. Biopsy was taken from the lesions and tissues were fixed in 10% buffered formalin and submitted to histopathologic department for histological confirmation. 62% of males and 38% females were diagnosed with squamous cell carcinoma. 30% were observed in age group of 41-50 years old. 45 % of squamous cell carcinoma were on buccal mucosa. Correlation between the 2 variables i.e., site to histological type and age to histological type was found to be statistically significant. Level of significance was set at 0.05. However, the strength of association was weak between the selected variables*

*OSCC was most common of all oral malignancies of which most were in the older age group. Serious thought should be given to prevention and early detection.*

**Key Words:** Oral Squamous Cell Carcinoma, Biopsy, Gender.

## INTRODUCTION

Carcinoma of oral cavity is amongst the commonest malignancies in many countries of the world and is one of the major threats to public health in the developed world and increasingly in the developing world. According to (WHO perspective) cancer is the second common cause of death in developed countries.<sup>1</sup> Oral cancer is a neoplasm which involves oral cavity that is the first portion of the alimentary tract that receives food, which begins at the lips and ends at the anterior pillar of fauces.<sup>2</sup> The oropharyngeal cancer is more common in developing countries as compared to developed world.<sup>3,4</sup> The prevalence of oral cancer is particularly high among men, the eighth most common cancer worldwide.<sup>3,4</sup> Incidence rates for oral cancer vary in men from 1 to 10 cases per 100 000 population in

many countries.<sup>3,4</sup> In south-central Asia, cancer of the oral cavity ranks among the three most common types of cancer.<sup>3,4</sup>

The incidence of squamous cell carcinoma is higher in Pakistan and other south East Asian countries. Smoking, betel quid, and tobacco chewing habits are the factors which cause high incidence in vast population of south East Asia.<sup>5</sup> The most common form of oral cancer is squamous cell carcinoma which is the histological form and constitute 88.72% to 95%.<sup>6</sup> The Buccal mucosa is the most common site for SCC followed by anterior 2/3rd of tongue, lower gum, lip, hard palate, floor of mouth and upper gum.<sup>6</sup> Similarly, strong evidence exist which shows the association between carcinoma and history of smoking involving posterolateral surface of tongue and floor of the mouth.<sup>7</sup>

Squamous cell carcinoma (SCC) is a malignant neoplasm of epithelial cells exhibiting squamous differentiation as characterized by the formation of keratin and the presence of intercellular bridges.<sup>8</sup> The cell of origin of oral squamous cell carcinoma is the oral keratinocyte.<sup>9</sup> The intracellular cause of oral squamous cell carcinoma is DNA mutation, often spontaneous but increased by exposure to any of a range of mutagens,

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chemicals, physical or microbial.<sup>9</sup> Histologically, oral squamous cell carcinoma is of different types which are conventional type, basaloid type, spindle cell type, verrucous type, papillary and Mucoepidermoid, adenosquamous, acantholytic and cuniculatum.<sup>10</sup> The Verrucous type is lesser aggressive form of SSC compare to more aggressive basaloid form.<sup>10</sup>

The objective of present study was to find a correlation between the clinical patterns of oral squamous cell carcinoma with age and site.

**METHODOLOGY**

The retrospective cross sectional study was conducted. The patients of oral squamous cell carcinoma were examined from January 2007 to December 2010 at oral & maxillofacial department, Darul Sehat Hospital, Karachi. All retrievable case files were obtained and necessary data were extracted regarding age, gender, site and histological type.

The attributes of the subjects that were essential for the selection include histologically proven cases of oral squamous cell carcinoma, lesions visible in oral cavity, patients of age above 30 were included. The lesion that were not proved histologically as a oral squamous cell carcinoma or those who below 30 or those who had recurrence were not included.

**RESULTS**

The 62% of males and 38% females were diagnosed with squamous cell carcinoma as shown in Tab 1. Distribution of squamous cell carcinoma patients by age is

TABLE 1: AGE AND GENDER DISTRIBUTION OF SQUAMOUS CELL CARCINOMA

Gender	20-39	40-59	60+	Percent
Male	10	47	5	62%
Female	6	30	2	38%
Total	16	77	7	100%

also shown in Table 1. 45% of squamous cell carcinoma was observed on the site of buccal mucosa as shown in Table 2. Correlation between the 2 variables i.e., site to histological type and age to histological type was found to be statistically significant. Level of significance was set at 0.05. However, the strength of association was weak between the selected variables as shown in Table 3. The SPSS version 17 was used to perform statistical analysis.

**DISCUSSION**

Squamous cell carcinoma of the oral cavity is characterized by marked geographical differences in frequency, age and site distribution as well as histopathological patterns. In this study a significant number (39%) of squamous cell carcinoma cases were in between 51-60 years, which was similar to a study conducted at Shuakat Khanum Memorial Hospital from 2003-2008 in which the mean age of the patient was 53 years.<sup>11</sup> However, the results of that study differs from the present study as far as site is concerned. According to the current study the most common site of for carcinoma was buccal mucosa, where as study conducted at Shuakat Khanum Memorial Hospital shows that the most common site of carcinoma was anterior tongue followed by buccal mucosa, lower gingiva and alveolus.

Similar study conducted at Ayub Medical College Abbotabad showed that (38%) of cases were in age group of 41-50 years and 22% of cases were between 51-60 years. the reason which can contribute the presentation of squamous cell carcinoma in early age compared to the current study may be due to the use of chewing tobacco at an early age in Khyber Pakhtunkhwa province. In addition, the commonest site for the occurrence of oral squamous cell carcinoma in our study was buccal mucosa was (45%) which is similar to the study conducted at Ayub Medical College, Abbotabad.<sup>12</sup>

The gender distribution in this study shows that more male (62%) participants had SSC compared to

TABLE 2: TOPOGRAPHIC DISTRIBUTION OF HISTOPATHOLOGIC PATTERNS OF ORAL SQUAMOUS CELL CARCINOMA

Site	Spndle Cell Form	Verrucous	Pappillay	Basaloid	Muoepidermoi	Percent
Buccal Mucosa	33	11	0	1	0	45%
Lower Gingiva	17	2	1	2	0	22%
Alveolus Retromolar	6	9	0	3	0	18%
Trigone	4	2	0	0	1	7%
Tongue	4	0	0	0	0	4%
Hard Palate	1	0	2	0	0	3%
Tongue Floor of Mouth	0	1	0	0	0	1%
Total	65	25	3	6	1	100%

TABLE 3: CORRELATION TEST

Variables	N	r <sub>s</sub>	P
Site to Histologic Patterns	100	.236	.01
Age to Histologic Patterns	100	.219	.02

females (38%). However, study conducted by Zulfiqar et al.<sup>13</sup> at Mayo Hospital, Lahore observed equal prevalence of SSC in both genders. Some studies have shown high tendency in females which may be due to changing habits in high socioeconomic group and cultural habits in some rural area.<sup>14</sup> Similarly, two studies carried out in India reported a higher male: female ratio of 2.2:1 and 4.2:1 respectively.<sup>15,16</sup> The analysis of histologic profile in this study reveals that well differentiated lesions predominated with spindle cell type, which is similar to a study conducted at Shaukat Khanum Memorial Hospital, and in a study conducted in Zimbabwean population.<sup>17</sup> Maximum cases of oral squamous cell carcinoma were observed in older age group in a study conducted by Mathur et al.<sup>18</sup>

Data obtained and interpreted from a single institution has obvious limitations. In present study, the information regarding tobacco and alcohol consumption is very limited. However, the descriptive data presented in this study is important for many reasons including the extent of problem, determining which groups in population is at the highest and lowest risk.

This study has limited number of data and does not represent the community as a whole. Further such studies over longer time periods at different levels of referral centers are recommended.

**CONCLUSION**

Oral Squamous Cell Carcinoma was most common of oral malignancies, of which most were in the older age group. Widely spread educational campaigns against determinant factors of oral cancer, such as high consumption of tobacco, length of tobacco exposure, associated early establishment of such habit, are urgent in order to reduce oral cancer incidence rates. Attention should be given to prevention and early detection. Whenever a dentist or a physician suspects any ulcer, growth or a white patch in the oral cavity to be malignant, lesion should be immediately biopsied to confirm the diagnosis.

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