

Prevalence of Squamous Cell Carcinoma in Tertiary Care Hospital (Allied Hospital) Faisalabad

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ABSTRACT

Objective: Squamous Cell Carcinoma (SCC) has the highest prevalence in head and neck cancers. This study aimed to find out the frequency and site-wise distribution of SCC in tertiary care hospitals of Faisalabad, Pakistan.

Materials and Methods: This retrospective study was conducted in the Department of Oral and Maxillofacial Surgery and Oncology Department of Allied Hospital Faisalabad from June 2017 to May 2018. Data of 1050 cases of oral cancers were retrieved during the study period and confirmed cases of SCC of head and neck were included in the study. An evaluation was done based on gender and site of cancer and the results were formulated.

Results: There was a total of 260 confirmed cases of SCC. The mean age in both the genders were 52±14.29. The peak prevalence was seen at 60 years of age. When seen gender-wise distribution out of 260 cases of head and neck cancers, 175 (67%) were male and 85 (32%) were female. All age groups demonstrated male predominance. The tongue has the highest prevalence followed by buccal mucosa, salivary gland and alveolus.

Conclusion: This study concludes that head and neck cancers are squamous cell in origin. SCC is a growing malignancy in Pakistan. There is a dire need to take steps that can decrease the percentage of cases developing day by day, especially in underdeveloped countries. Adequate knowledge should be provided to people to be aware of SCC. The findings of this study will be a valuable addition to the local cancer archives.

Keywords: Squamous Cell Carcinoma, Head and Neck Cancers, Oropharyngeal Cancer, Metastasis, Pakistan

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INTRODUCTION

A large group of human diseases include malignancies and their prevalence is increasing day by day. Despite vast developments in the field of oncology, Squamous cell carcinoma of the head and neck remains a deadly lesion and one of the ten leading causes of death.¹ It is the 8th most common cancer in developing countries like Southeast Asia.² This is attributed to social habits like tobacco, alcohol, betel quid, pan chewing & smokeless tobacco and other deleterious habits. It is mostly seen in males and aged people.³⁻⁵ The incidence and anatomical distribution of squamous cell carcinoma is widely based on geographical variations. The frequency and site-wise distribution of squamous cell carcinoma may vary according to the causative agent and environmental effects.⁶

Oral squamous cell carcinoma is the most common in men and 3rd most common malignancy in women in high-risk countries (Pakistan, Bangladesh, India). The researchers have also shown that there is a slight decline in the incidence of head and neck cancer in developed countries with decreasing usage of tobacco.⁷ The oropharynx and oral cavity are considered separate regions yet oral and oropharyngeal cancers are difficult to distinguish because of anatomical closeness. According to the 10th revision of the International Classification of Diseases (ICD-10), head and neck cancers, categories C00-C14 (cancer of the lip, oral cavity and pharynx) and C32 (larynx) are categorized amongst the top ten malignancies globally.⁸

Different factors involved in the etiopathogenesis of oral cancer are the utilization of tobacco in its various forms, alcohol, various forms of smoking habits (cigarettes, cigars, pipe, sheesha, reverse smoking etc.), lack of awareness among masses and lack of proper nutrition.⁹ The radiations, oncogenic viruses like Epstein Bar virus (EBV), Human Papillomavirus (HPV), Human Immunodeficiency Virus (HIV), Human T-cell Lymphoma Virus (HTLV), Human Herpes 8 (HHV-8) etc. have also been implicated in the development of oral cancer.¹⁰ As Head and Neck cancers (HNC) have lymphogenic metastatic tendency therefore they present with a high recurrence rate and an increased propensity to cause secondary tumours. All the technological advances have failed to improve the 5-year survival which is reported to be around 30-50%.¹¹

Squamous cell carcinomas of head and neck origin mostly arise from the epithelial/ mucosal surfaces of the oral cavity. Squamous epithelium covers significant portions of the head and neck region explaining the reason for the dominance of squamous cell carcinoma in this region. Most head and neck cancers arise as ulcerated lesions or growth at the primary site with later involvement of the cervical lymph nodes presenting as swelling in the neck region. Early detection of the tumour should be the top priority as early detection significantly improves prognosis as compared to that in advanced stages. The lesion is diagnosed by acquiring a histopathological sample either through biopsy from the primary site and/or by fine-needle aspiration of any enlarged lymph nodes.¹²

Oral squamous cell carcinoma is a significant disease of the Indo-Pak region with over 50% mortality in the 5-years of diagnosis, yet our local databases are not well developed and still, we have to resort to epidemiological data from the western world which may not be a true representation of our local population. Even the data that is available is from cities like Karachi, Lahore, Rawalpindi or Peshawar. This study aimed to find out the frequency and site-wise distribution of oral squamous cell carcinoma in a tertiary care hospital of Faisalabad, Pakistan. The data acquired through this study will form part of our local epidemiological database and will help in its strengthening as not many studies on the prevalence of oral squamous cell carcinoma have been done so far from the Faisalabad region, which is the third-largest city of Pakistan.

MATERIALS AND METHODS

This is a retrospective study, conducted in the Department of Oral and Maxillofacial Surgery and Oncology Departments of Allied Hospital Faisalabad. After acquiring permission to conduct the study from the Institutional Ethical Review Committee [Ref. No. IRB006912/1035], hospital data was retrieved for all the cases which presented with squamous cell carcinoma of the head and neck region for the study period between June 2017 to May 2018. Demographic variables like age, gender, social habits, and site of the primary tumour along with its TNM staging were noted on a specially designed proforma for data collection. Cases with incomplete records were discarded. Since it was a retrospective study, all the cases that presented during the study period who had complete records

available were included in the study. Evaluation of the data was done and frequency, percentages and mean values with standard deviation were calculated for variables like age, genders, site of primary tumour etc. using the SPSS version 22.

RESULTS

The data of a total of 1050 diagnosed cases of cancer were retrieved from the hospital database. Out of these 1050 cases, 260 patients had Squamous cell carcinoma of the head and neck region. The mean age was found to be 52±14.29 years. The peak prevalence was seen at 60

years of age. There was a male predominance. Total males in the study were 175 (67%) and females were 85 (32%) with an overall male to female ratio of 2:1. The tongue was the most involved site with a frequency of 35% followed by buccal mucosa 27%. The least commonly involved site was the nasal cavity (2.3%). A detailed description is presented in Table 1. The distribution of TNM staging that was seen in these patients was T1 in 30% patients, T2 in 38% T3 in 10%, T4a in 20% and T4b in 3% patients. Lymph nodes was not palpable in 62.5% patients while N1 in 23%, N2b in 5%, N2c in 9.5% patients.

Table 1. Location and site-wise distribution of cancer in head and neck region

Site	Frequency	Percentages
Tongue	93	35.8%
Buccal mucosa	72	27.7%
Lip	14	5.4%
Salivary gland	28	10.8%
Vocal cords	18	6.9%
Alveolus	29	11.2%
Nasal cavity	6	2.3%
Total	260	100.0%

DISCUSSION

Oral squamous cell carcinoma is the 8th most common cancer in the World. Oral Squamous cell carcinoma is more prevalent in males than females i.e., 2:1. Morbidity and mortality are also higher in males than females. The reported survival rate is 40%-50% for 5 years. Most oral squamous cell carcinomas are moderately differentiated or well-differentiated with good prognosis and poorly differentiated with low prognosis. The oral squamous cell carcinoma is rapidly progressive and invades into adjacent structures making an overall poor prognosis of the lesion. The lymph nodes involvement is also seen with patients with poor prognostic signs.

This study showed a clear male predominance. This is consistent with certain European studies which reported a male predominance in patients of OSCC.¹³ Most local studies from Pakistan also exhibited the same male predominance.^{14,15} A morphological study of OSCC carried out in Pakistan by Ayaz et al reported a 1.5:1 male to female ratio with a mean age of incidence to be 53±15.16 years.¹⁶ On the contrary to our gender-related findings, is a study from Lahore which reported a female predominance with a male to female ratio of 1:1.5.¹⁷

Another study carried out in India on 80 cases of OSCC reported a prevalence of 61.25% in males and Yazdi et al in their study in Iran of 48 cases of OSCC of tongue reported male prevalence of 60.4%.^{18,19}

Oral squamous cell carcinoma usually presents as asymptomatic red or white or as ulcerated and keratotic masses. On the floor of the mouth, it may present as painless, nonhealing, indurated swelling. Based on the interpretation of current study results, head and neck cancers are squamous cell in origin. A significant proportion of head and neck cancers is caused by the Human Papillomavirus in developed countries.

This study also reported tongue being the most frequent site involved. A recent study by Gul and colleagues reported similar results where the tongue was involved in more than 50 per cent of cases diagnosed with SCC.²⁰ Another study conducted by Olaleye et al showed that the tongue is involved in 33.1% of squamous cell cancers of the head and neck region.²¹ The second most common site involved in HNC is the buccal mucosa that is involved in 27.7% of the cases and this has been mentioned in the study conducted by Tandon et al that buccal mucosa is involved in 31% of the cases.²² The gums, palate, retromolar area and the buccal and labial

mucosa are the least frequently affected sites in the oral cavity.²³

The lip involved in 5.4% of cases of squamous cell carcinoma in this study which is also reported in the study conducted by Olaleye et al that in 5.5% of cases lip was the primary site.²¹ The salivary glands that are responsible for salivary secretions could also be involved in the squamous cell carcinoma and 10.8% cases were reported that has origin from salivary glands and this is also reinforced in the study conducted by Jiang Xioge et al that salivary gland was involved in 7.1% of the cases.²⁴ The vocal cords were involved in 6.9% of the cases, the least involved site in the head and neck region is the nasal cavity that is involved only in 2.3% which is also given in the study conducted by Lin et al that vocal cords were involved in 7.1% of the cases.²⁵

This study gives information about the site-wise distribution of squamous cell carcinoma in the head and neck region. The limitation of this study is that it gives information only about the site distribution of squamous cell carcinoma in the head and neck region. No other information like staging and prognosis of cancer can be obtained.

CONCLUSION

It has been concluded from the study that along with other emerging cancers head and neck cancers are the ones that need to be managed with high priority. The number of cases is increasing day by day, but we have few Maxillofacial centres to deal with these pathologies. There should be a ban on the usage of carcinogenic materials like tobacco etc.

DISCLAIMER

None.

CONFLICT OF INTEREST

No conflict of interest was declared by the authors.

ETHICAL STATEMENT

Ethical approval was taken from the institute's ethical review committee before data collection [Ref. No. IRB006912/1035].

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