

Oral Squamous Cell Cancer Scenario in a Tertiary Hospital in Western Region of Nepal

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ABSTRACT

Introduction: Oral squamous cell cancer involves oral subsites namely lip, buccal mucosa, gingivobuccal sulcus, mandible, retromolar trigone, tongue, floor of the mouth, maxilla and hard palate. It has multifactorial etiologies. Alcohol, tobacco chewing, smoking, betel quid chewing, trauma and HPV viruses are implicated as the predisposing factors of oral squamous cell carcinoma. If detected early, oral cavity cancer is easily preventable and curable. **Aims:** To evaluate oral squamous cell cancer demographics, as well as risk factors, site, grades, and stages. **Methods:** This prospective cross-sectional descriptive type of study was done in patients attending dental outdoor patient department of Nepalgunj medical college from July 2018 to August 2020. 46 patients selected by enumerative sampling method in the study after they were histopathologically confirmed with oral squamous cell carcinoma by biopsy. All included patients were having primary oral cancer, single, unilateral and untreated. After data collection current oral squamous cell cancer demographics, as well as risk factors, site, grades, and stages were established. **Results:** Out of 46 patients ranging from 32 to 79 years 28(60.8%) were males and 18(39.1%) were females with mean age range of 55.41 ± 10.84 years. 26(56.5%) of total displayed oral squamous cell carcinoma at buccal mucosa. 25(54.3%) of total consumed gutkha and paan with betel nut plus tobacco. 30(65.2%) of total were exposed to carcinogen for a period of 21-40 years. 32(69.5%) of total had well differentiated oral squamous cancer. 32(69.5%) of total were at stage III at the time of presentation. **Conclusion:** Oral cancer occurred more in males, at buccal mucosa and in people above 51 years, and in those who consumed gutka and paan, betel nut plus tobacco. It was also more in people with longer history of exposure to carcinogens.

Keywords: Carcinogens, Occurrence, Oral squamous cell Carcinoma

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INTRODUCTION

Oral cancer ranks 6th most common cancer worldwide and involves oral subsites namely lip, buccal mucosa, gingivobuccal sulcus, mandible, retromolar trigone, tongue, floor of the mouth, maxilla and hard palate.^{1,2} It is more prevalent in southeast Asian countries and in western countries.³ It is common among head and neck malignancies and contributes 85% prevalence worldwide.⁴ In context to Nepal it ranks sixth in most common cancers and also the sixth among cancer deaths.¹ In 2018, the number of new cases of oral cavity cancer in Nepal was projected to be 1207, corresponding to a risk of 4.9 new cases per 100,000 men, while the number of fatalities and risk were 845 and 3.4 per 100,000, respectively.¹ Oral Squamous cell carcinoma (OSCC) accounts for 85% to 95% of all mouth cancers.⁵

Alcohol, tobacco chewing, smoking, betel quid chewing, trauma and HPV viruses are implicated as the predisposing factors of

OSCC.⁶ If detected early, oral cavity cancer is easily prevented and curable.⁷ However, the majority of patients are not diagnosed until late in the disease's progression, and just half of those who get the disease survive after five years.⁸ The therapy of choice for OSCC is surgical resection. In locoregionally advanced cancers, adjuvant radiation \pm chemotherapy are employed for specific purposes.⁹ A multidisciplinary team is vital to have a better outcome.¹⁰ The aim of this study was to evaluate current oral squamous cell cancer demographics, as well as risk factors, site, grades, and TNM (Tumor, Node, Metastasis) stages.

METHODS

This prospective cross-sectional descriptive type of study was done in patients attending dental outdoor patient department of Nepalgunj medical college from July 2018 to August 2020. 46 patients selected by enumerative sampling method in the study after they were histopathologically confirmed with oral

squamous cell carcinoma by biopsy. All included patients were having primary oral cancer at a single site, unilateral and non-treated previously. Metastatic, previously treated, recurrent and multiple site or bilateral oral cancer patients were excluded from study. Informed consent was taken before study and ethical clearance was taken from concerned institutional review committee. The goal of this study was to evaluate current oral squamous cell cancer demographics, as well as risk factors, site, grades, and TNM (Tumor, Node, Metastasis) stages. Data was collected using a standardized data collection sheet. Statistical Package for the Social Sciences (SPSS) Version 24.0 was used to summarize and analyze the data collected, and the results were presented in the form of tables.

RESULTS

Sex	Male		Female	
		28 (60.8%)	18 (39.1%)	
Age	≤ 50 years		>50 years	
	Male	Female	Male	Female
	11 (23.9%)	5 (10.8%)	17 (36.9%)	13 (28.2%)
Laterality	Right sided		Left sided	
	16 (34.7%)	30 (65.2%)		

Table I: Demography (n=46)

Our study included 46 patients of ages from 32 to 79 years with primary, single, unilateral and previously non-treated histopathologically confirmed oral squamous cell cancer. The mean age range of all patients was 55.41 ± 10.84 years. Out of total patients, 28(60.8%) were males and 18(39.1%) were females; with the male female ratio of 1.5:1. 30(65.2%) of the total patients were older than 50 years whereas 16(34.7%) were equal or below 50 years of age. More than two-thirds (65.2%) had cancer at left side of the oral cavity. (Table I)

Characteristics	n=46		
Sites	Buccal mucosa	26 (56.5%)	
	Upper alveolus	1 (2.1%)	
	Lower alveolus	3 (6.5%)	
	Gingivobuccal sulcus	5 (10.8%)	
	Retromolar trigone	8 (17.3%)	
	Tongue	2 (4.3%)	
	Floor of mouth	1 (2.1%)	
	Habits	Smokers only	2 (4.3%)
		Gutkha and paan betel nut chewers	2 (4.3%)
Gutkha and paan betel nut chewers + tobacco chewers		25 (54.3%)	
Gutkha and paan betel nut chewers + smokers		15 (32.6%)	
Duration of exposure	Gutkha and paan betel nut chewers + smokers + tobacco chewers	2 (4.3%)	
	5-20 years	16 (34.7%)	
	21-40 years	30 (65.2%)	
Tumor grading	Well differentiated	32 (69.5%)	
	Moderately differentiated	9 (19.56%)	
	Poorly differentiated	6 (13.0%)	
Staging	Stage I	2 (4.3%)	
	Stage II	5 (10.8%)	
	Stage III	32 (69.5%)	
	Stage IV	12 (26.08%)	

Table II: Oral squamous cell carcinoma occurrence in relation to sites, habits, duration of exposure, grade and TNM staging (n=46)

Table II shows occurrence of oral squamous cell carcinoma in relation to sites, habits, duration of exposure, grades and TNM staging. In more than half (56.5%) of the patients SCC was present in buccal mucosa, while it was found in lowest (2.1%) at upper alveolus and floor of mouth each. Second highest site of occurrence was at retromolar trigone (17.3%). More than half of the patients (54.3%) who developed OSCC were Gutkha and paan betel nut chewers plus tobacco chewers. Second highest occurrence was found in those who were gutkha and paan betel nut chewers plus smokers (32.6%). Almost two third of the total patients (65.2%) who developed OSCC had a history of exposure to carcinogen of 21 to 40 years. Remaining patients (34.7%) had a history of less than 21 years exposure. Well differentiated histopathological status of OSCC was present in 32(69.5%) of total patients. Most of the patients (58.6%) had TNM staging III at the presentation.

Characteristics	n=46
Surgically Intervened	17 (36.9%)
Referred	14 (30.4%)
Cases that did not report	15 (32.6%)

Table III: Intervention Summary

Table III shows interventions instituted to OSCC diagnosed patients. 17(36.9%) were surgically treated in our center by wide surgical excision of cancer and functional neck dissection, among which 16(34.7%) were referred for postoperative radiotherapy. 14(30.4%) were referred to higher center in need of neoadjuvant radio/chemotherapy and/or complex facial reconstructive requirements. 15(32.6%) did not report to our center after they were diagnosed and counselled for treatment.

DISCUSSION

In our study out of 46 patients with primary, unilateral, single, previously untreated histologically confirmed primary oral squamous cell carcinoma patients, 28(60.8%) were males and 18(39.1%) females with the male to female ratio being 1.5:1. This M: F ratio is similar to Rahman, et al (2014) who demonstrated the ratio to be 1.5:1 in oral SCC patients attending a tertiary hospital in Bangladesh.¹¹ This similarity might be due to similar predisposing factors or tobacco consumption habits among people in south Asian countries. Our patients ranged from age 32 to 79 years with mean of all patients was 55.41 ± 10.84 years. Two thirds of the patients (65.2%) to whom OSCC occurred were greater than 50 years. These findings suggest that oral squamous cell carcinoma is a disease of increasing age. OSCC was seen more on the left side (65.2%) of oral cavity, which is partly in consistent to findings of a study by Selvamani et al (2015) in India who found oral cancer at left side of tongue in 51.9% of patients.¹²

Among all oral subsites where oral cancer occurred, buccal mucosa showed highest occurrence (56.5%) followed by retromolar trigone (17.3%). Our study findings are similar to the retrospective study done in Nepal by Sharma S. (2019) in oral cancer patients where most commonly affected site by oral cancer was buccal mucosa (66.06 %) followed by retromolar trigone (19%).¹³ Mostly gutkha and paan betel nut plus tobacco chewing habituated patients exhibited OSCC in our study which was similar to the findings from the same study of Sharma S. (2019) where oral cancer patients were mostly consuming smokeless tobacco.¹³

The longer the patients got exposed to carcinogens, the more chances of occurrence of carcinoma as evidenced by 30(65.2%) occurrences in exposure group of 21-40 years and 16(34.7%) in the age group 5-20 years. In a prospective research Llewellyn et al after analyzing risk factors for oral cancer discovered that higher than or equal to 21 years of tobacco use pose the highest risk factor for oral cancer.¹⁴ In our analysis, the majority of the cancer patients exhibited well-differentiated OSCC at the time of presentation, with clinical TNM staging of stage III which are similar to findings of study by Sah et al (2020) done in multiple centers of Bangladesh to assess oral cancer scenario.¹⁵

LIMITATION

The limitation of this study was small sample size.

CONCLUSION

Oral cancer occurred more in males, at buccal mucosa and in people above 51 years, and in those who consumed gutka and paan, betel nut plus tobacco. It was also more in people with longer history of exposure to carcinogens.

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