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A Prospective Study to Assess the Clinicopathological and Histological Grade of Oral Malignancy and Its Effect on the Prognosis of the Patients

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Abstract
Background: Oral cancer is the sixth most common malignancy worldwide. It has long been accepted that tobacco consumption including smokeless tobacco and heavy alcohol consumption are the principal etiologic factors for the development of oral cancer. The aim of this study is to assess the clinicopathological and histological grade of oral malignancy and its effect on the prognosis of the patients. **Material & Methods:** A prospective study done on 50 patients with oral cavity cancer with or without secondary whose histopathology showing only squamous cell carcinoma in department of ENT at Government Medical College, Pali, Rajasthan, India. The patients age, sex, Habits, socio economic status, premalignant conditions, clinical features, site of oral cavity, staging, histopathology were recorded. Sites of the lesion were subdivided into lip, tongue, floor of the mouth, gingiva, alveolar mucosa, palate, buccal/labial mucosa, maxilla and mandible. Data were analyzed by descriptive statistics using SPSS software version 24.0. **Results:** The present study showed that most patients both male and female belongs to 45-65 years of age groups (80%). Male preponderance and majority of patients belongs to lower socio-economic status (60%). Out of 50, 35 patients are pan masala chewers, 40 patients are betel nut chewers and 22 patients are smokers in our study. Majority of patients in this groups present with ulceroproliferative growth of oral malignancy covering 88% of patients. Well differentiated squamous cell carcinoma was the major histopathological type. Majority of the patient in this study groups are in Grade G1 (well differentiated squamous cell carcinoma). Buccal mucosa was the most common site of oral cancer reported in 64% and Tongue was the next common site 26%. **Conclusion:** This study highlights some anatomical locations where oral cancers are frequently encountered. As a result, clinicians should pay attention to not only teeth, but oral mucosa especially in the high prevalence area as well since early detection of precancerous lesions or cancers in the early stage increase the chance of patient being cured and greatly reduce the mortality and morbidity.
Keywords: Oral cancer, Squamous cell carcinoma, Tobacco, Gutkha, Histopathological

Introduction

Oral malignancy is one of the commonest cancer in Asian countries and India (40%). Incidence of oral cancer in India 28/1,00,000 population, commonest oral cancer in India is of buccal mucosa (more than 70%).Incidence of oral cavity in India 1 million new cases/year and 1 lakh 24 thousand deaths/year Incidence rate in men exceeded 30/1,00,000 world wide and 10/1,00,000 women in India[1].

Combined abuse of alcohol and tobacco is not additive in terms of the odds ratio but multiplicative and the causative agent smoking, quid of chewing pan are important causes, tobacco, betel nut, alcohol, human papilloma virus (present in 80% of oral cancer and present in 40% of normal individuals) EB virus, vitamin A deficiency, plummer-vinson syndrome, bad dental hygiene, denture irritation – are etiologies Risk of malignancy is 8 times in tobacco chewers and 10 times with quid users and 30 times with night quid users[1].

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Oral cavity in India it is common in cheek (50%), tongue (25%), floor (15%), palate and lips (10%), and in western countries most common is tongue[2].Leukoplakia (commonest), Erythroplakia, chronic hyperplastic candidiasis are pre cancerous conditions, oral lichen planus, discoid lupus, dyskeratosis congenita are doubtfully associated lesion, precancerous condition is one where there is increased risk of cancer[3].Most common malignancy of the oral cavity is squamous cell carcinoma and second most is minor salivary gland tumours[3].

Surgical wide excision and radiotherapy are main modalities of treatment, chemotherapy is used as an adjuvant curative treatment in early growth with preservation of function like swallowing, speech, cosmetics but with adequate oncological clearance is the principle of surgical approach, radiotherapy is also used as curative therapy[4]. The aim of this study to assessed the clinicopathological and histological grade of oral malignancy and its effect on the prognosis of the patients.

Materials & methods

A prospective study done on 50 patients with oral cavity cancer with or without secondary whose histopathology showing only squamous cell carcinoma in department of ENT at Government Medical College, Pali, Rajasthan, India.

Exclusion criteria
Patient with oral malignancy outside oral cavity (Nasalcavity, Nasopharynx, Oropharynx, Hypopharynx, Larynx,Paranasal sinus)

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and salivary gland tumour and HPE showing non squamous cell carcinoma are not included.

Methods

The patients age, sex, Habits, socio economic status, premalignant conditions, clinical features, site of oral cavity, staging, histopathology were recorded.Sites of the lesion were subdivided into lip, tongue, floor of the mouth, gingiva, alveolar mucosa, palate, buccal/labial mucosa, maxilla and mandible. Oral cancer was subdivided into 7 categories: epithelial tumors, salivary gland tumors, hematologic tumors, bone tumors, mesenchymal tumors, odontogenic tumors, and others.

Statistical analysis

Data were analyzed by descriptive statistics using SPSS software version 24.0.

Results

The present study showed that most patients both male and female belongs to 45-65 years of age groups (80%). Male preponderance and majority of patients belongs to lower socio-economic status (60%) (table 1).

Table 1: Demographic profile of patients

Demographic profile	No. of patients (N=50)	Percentage
Age groups		
Up to 45 yrs	5	10%
46-55 yrs	20	40%
56-65 yrs	20	40%
Above 65 yrs	5	10%
Sex		
Male	30	60%
Female	20	40%
Socio-economic status		
Lower class	30	60%
Lower middle class	10	20%
Middle middle class	6	12%
Upper middle class	3	6%
Upper class	1	2%

Out of 50 patients in this study groups 30 are male and 20 are females and all the males are alcoholic. 35 patients are pan masala chewers, 40 patients are betel nut chewers and 22 patients are smokers in our study. Majority of patients in this groups present with ulceroproliferative growth of oral malignancy covering 88% of patients (table 2).

Table 2: Predisposing factors & clinical presentation for oral cancer patients

Predisposing factors	No. of patients (N=50)	Percentage
Alcohol		
Yes	30	60%
No	20	40%
Pan Masala		
Yes	35	70%
No	15	30%
Betel Nut Chewer		
Yes	40	80%
No	10	20%
Smoker		
Yes	22	44%
No	28	56%
Clinical presentation		
Ulceroproliferative	44	88%
Ulcer	6	12%

Majority of the patient in this study groups presenting in the T2 stage size of 2 to 4cm that is 20 of 50 patient with 40 % of the patients, Out of 50 patient, 20 patient 40% presents with N0 no significant cervical lymphnode stage and 18 patient 36% presents with N1 level 1b node. Majority of the patient reported to us were in stageII, lll and lV (table 3).

Table 3: Distribution of patients according to TNM staging

TNM staging	No. of patients (N=50)	Percentage
T stage		
T1	3	6%
T2	20	40%
T3	9	18%
T4	3	6%
T4a	7	14%
T4b	8	16%
Nodal stage		
No	20	40%
N1	18	36%
N2a	10	20%
N3	2	4%
TNM stage		
I	3	6%
II	13	26%

III	13	26%
IVA	13	26%
IVB	8	16%

Well differentiated squamous cell carcinoma was the major histopathological type. Majority of the patient in this study groups are in Grade G1 (welldifferentiated squamous cell carcinoma) (table 4).

Table 4: Distribution of patients according to Histopathological type (SCC)

Squamous cell carcinoma (SCC)	No. of patients (N=50)	Percentage
Histopathological type		
Moderate differentiated	10	20%
Poor differentiated	2	4%
Well differentiated	38	76%
	Histopathological grade	
G1	40	80%
G2	8	16%
G3	2	4%

Buccal mucosa was the most common site of oral cancer reportedin 64% and Tongue was the next common site 26% (table 4).
Out of 50 patient 8 died which is 16% of the patients within 6 months follow up all came in stage lV advanced oral malignancy (table 5).

Table 5: Distribution of patients according to site of oral cavity

Site of oral cavity	No. of patients (N=50)	Percentage
Ca Buccal	32	64%
Ca floor	2	4%
Ca hard palate	1	2%
Ca lip	2	4%
Ca tongue	13	26%

Table 6: Distribution of patients according to outcome

Outcome	No. of patients (N=50)	Percentage
Alive	42	84%
Dead	8	16%

Discussion

According to the National Cancer Registry Programme (NCRP)[5] - ICMR Survey shows that Oral Cavity cancer occupies the most common carcinoma in male (19.4%), is followed by hypopharynx and esophagus. In females Cervix Uterus is followed by Breast and oral cancer (38.7%).The reference in Indian Medical Literature regarding the preponderance of oral cancer in India suggests its strong association with habit of chewing betel nut, tobacco, slacked lime and smoking habit.

Our study showed that peak incidence of oral cavity cancer is between45 and 65 Years. According to the National Cancer Institute Programme – USA[6], themean age of diagnosis is 65 years and more than 50% occurs above the age of 60 Years. The disparity in age incidence is mainly due to the early tobacco and betel leaf chewing habit in Indian patients.

Our study reveals that chewing tobacco and betel nut present in 70%, and of them 80% have started it before the age of 25 Years. Young age chewing habit and the number of years of usage are thereasons for oral cancer at earlier ages.

Recently, it has been found out that increased incidence of oral cavity cancers detected at earlier ages probably due to the habit of chewing and smoking among the students evidenced by oral Cavity Cancer under the age of 35 Years. According to the centers for disease control and prevention 2015, U.S.A.[6] - Tobacco usage was increased among middle and high school students.

Male to female ratio was 1.5:1. It is believed that male sex incidence increase is due to the greater use of Tobacco chewing, betel nut in rural and increase alcohol intake in rural and urban by male in India.

In present study majority of patients with oral cancers (80%) are from low socio-economic status. Because majority of population reside in rural areas & dependent mostly in farming in India, so majority of cause poor nutrition supply, bad oral hygiene and addiction to tobacco chewing, betel nut chewing & dependent on alcohol.

Major etiological factor is chewing betel nut and tobacco in more than a decade either continuously (or) intermittently. Information from the patients regarding the duration of addiction for chewing shows that about 70% of patients have been chewing tobacco for more than a decade either continuously (or) Intermittently. Tobaccos which is smoked as beedi, cigarette (or) pipe has been found in 44% of

patients.In our study alcohol usage is found in 60% Alcohol has been incriminated as one of the causes for oral cancer. Alcohol has indirect role. Almost all heavy drinkers are also heavy smokers. Alcohol in turn increases the absorption of tobacco and increases nutritional deficiency. These factors make squamous cells more susceptible for conversion into cancer cells.Dental lesions such as sharp tooth and artificial denture produce constant trauma has been associated with Carcinoma of buccal mucosa.

In our study showed that buccal mucosa involve 64% of oral cavity cancer. Tongue is the 2nd most common site (26%), next to buccal mucosa, Disparity in this involvement is mainly due to the habitual tobacco and betal chewers to keep the Quid in bucco gingival sulcus. The reasons why the tongue and the cheek are the predilection sites for oral cancer are that the carcinogens in the oral cavity mixing with saliva have the tendency to pool at the bottom of the mouth and these sites are covered by thin and non-keratinized mucosa. As a consequence, they provide less protection against the carcinogen[7]. However, Chidzonza[8] reported that gingiva was the most common site for oral cancer followed by the tongue.

Reverse smoking (Chutta inside the mouth) is associated with cancer of the palate found in Andhra Pradesh. Next to tongue, palate, floor Lip, occupies about 2% in this study.

Lower Lip exposure to radiation is more when compared to upper lip is the reason for higher incidence of Lower lip cancer than upper lip. Khan et al.[9] revealed that oral mucosa was the most common site for oral cancer followed by the tongue. Howell et al.[10] reported that the site of predilection for oral cancer was the lip followed by the tongue.

Out of 50 patients majority of them reported with ulcer or ulcero proliferative growth in the mouth. Tumors of the oral cavity often ulcerate; this is probably due to friction of the mucous membrane during eating and partly due to Infection. Initially the lesions are painless, but once disease advances patientsreported with pain. Other symptoms such as excessive salivation, difficulty in chewing, dysphonia, dysphagia and ankyloglossia are present. Trismus is a bad sign as it signifies extensive infiltration by an endophytic lesion.

Squamous cell carcinoma of oral malignancy and which is the most common variety in our study. Out of the squamous cell carcinoma HP

GRADING reported in this study 80% are G1 well differentiated, 16% are G2 moderately differentiated, and 4% are G3 poorly differentiated.

Conclusion

This study highlights some anatomical locations where oral cancers are frequently encountered. As a result, clinicians should pay attention to not only teeth, but oral mucosa especially in the high prevalence area as well since early detection of precancerous lesions or cancers in the early stage increase the chance of patient being cured and greatly reduce the mortality and morbidity.

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Conflict of Interest: Nil   Source of support: Nil