Clinico-Pathological Study of Oral Cancers

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Abstract:

Background: *Oral cancer is one of the most common malignancies in India. This study investigates the clinico-pathological features of oral cancers. Methods The study was conducted in the Dept. Of Oto-rhino-laryngology, Govt. Medical College, Calicut during the period January 2007 to December 2007. Those patients with newly diagnosed malignancies of oral cavity were included in the study. On the first visit, informed consent was taken. Proforma was filled. It included – patients details, I.P./ O.P. no., presenting complaints, history of present illness, history of previous illnesses. Personal habits like smoking, alcohol intake,tobacco chewing, were analysed in depth. Detailed examination was done about the primary lesion, nodal status and about the systemic involvement. Routine blood investigations were done including – Haemoglobin, total count, differential count, E.S.R., random blood sugar, blood grouping and Rh typing. Radiological investigations were done including Orthopantomogram, X-Ray soft tissue neck lateral view, chest X-ray. C.T. scan of paranasal sinuses and neck, X-ray paranasal sinuses were taken in indicated cases.Biopsy was taken from the lesion and it was examined for the type of malignancy, differentiation. F.N.A.C. of clinically palpable cervical lymph nodes was done to know the nodal status.*

Results: *Most common pathological type was squamous cell carcinoma well differentiated (54%). Male to female ratio was 2.5:1.Palpable lymphadenopathy was present in 23% of patients. Most common site was tongue (36%). Most common age group affected was 61-70yrs (33%) .67% of patients had history of smoking, 44% alcohol consumption, 46% had both together and 19% pan chewing.*

Conclusion: *Tobacco use and alcohol consumption are important risk factors in carcinogenesis. As a part of primary prevention, awareness must be created amongst the general population regarding the hazards of tobacco use and alcohol consumption.Clinical and histological screening of at risk population will be a better way for early detection.*

Keywords: *Oral cancer, squamous cell carcinoma, risk factors, smoking*

I. Introduction

Oral cancer is a major problem in the Indian subcontinent where it ranks among the top three types of cancer in the country [1.] Age-adjusted rates of oral cancer in India is high, that is, 20 per 100,000 population and accounts for over 30% of all cancers in the country [2.] The variation in incidence and pattern of the disease can be attributed to the combined effect of ageing of the population, as well as regional differences in the prevalence of disease-specific risk factors [3.]

The most important risk factors for oral SCC are use of tobacco or betel quid and the regular drinking of alcoholic beverages. However, infection with high-risk human papillomavirus (HPV) geno-types, and a diet low in fresh fruits and vegetables have also recently been implicated in the aetiopathogenesis of oral SCC [4,6.] The highest incidence and prevalence of oral SCC is found in the Indian subcontinent where the risk of developing oral SCC is increased by the very prevalent habits of chewing tobacco, betel quid and areca-nut [5.] The mutagenic effects of tobacco, alcohol, betel quid or areca-nut are dependent upon dose, upon frequency and upon duration of use, and are accelerated and exaggerated by the concurrent use of two or more of these agents [4.]

A number of conditions have been associated with an elevated risk of developing oral SCC including Li Fraumeni syndrome, Plummer-Vinson syndrome, Fanconi anemia, chemotherapy induced immunosuppression of organ transplantation, dyskeratosis congenita, xeroderma pigmentosum and discoid lupus erythematosus [7.]While socioeconomic status, educational level, cultural influences and limited access to health care services do not play any direct role in the development of oral SCC, they do indirectly influence the higher morbidity and mortality from oral SCC in persons from disadvantaged backgrounds [8.]Available literature shows that there are no published studies from north Kerala regarding epidemiology of oral cancer.

Aims and objectives:
1. To study the clinical features and risk factors of cancers of oral cavity in patients attending the Dept. of Oto-rhino-laryngology, Govt. Medical College , Calicut, during the study period.
2. To study the pathological findings of the lesions from the same patients.

II. Patients And Methods

This was a Cross Sectional Study approved by the Research Ethics Committee of the institution. The study was conducted in the Dept. Of Oto-rhino-laryngology, Govt. Medical College, Calicut during the period January 2007 to December 2007. Those patients with newly diagnosed malignancies of oral cavity were included in the study. Exclusion Criteria – Those patients who were undergoing treatment and who had completed treatment. On the first visit, informed consent was taken. Proforma was filled. It included – patients details, I.P./ O.P. no., presenting complaints, history of present illness, history of previous illnesses. Personal habits like smoking, alcohol intake,tobacco chewing,were analysed in depth. Detailed examination was done about the primary lesion,nodal status and about the systemic involvement. Routine blood investigations were done including – Haemoglobin, total count, differential count, E.S.R., random blood sugar, blood grouping and Rh typing. Radiological investigations were done including Orthopantomogram, X-Ray soft tissue neck lateral view, chest X-ray. C.T. scan of paranasal sinuses and neck, X-ray paranasal sinuses were taken in indicated cases. Biopsy was taken from the lesion and it was examined for the type of malignancy, differentiation. F.N.A.C. of clinically palpable cervical lymph nodes was done to know the nodal status. The following variables were analysed – History of addictions like smoking , alcohol intake and pan chewing. Histopathological classification of the lesion and its relation to lymph node status were also recorded.

Statistical Analysis

The results were analysed using SPSS-16 software.Analysis included calculation of percentages and proportions.

III. Results

52 patients with newly diagnosed malignancies of oral cavity attending the Dept. Of Oto-rhino-laryngology, Govt. Medical College, Calicut during the period January 2007 to December 2007 were included in the study. Most common age group affected was 61-70yrs(33%).The mean age was 62.75yrs.Minimum age was 31yrs and maximum was 90yrs(TABLE 1). Out of 52 patients, 37(71%) were males and 15(29%) females. Male to female ratio was 2.5:1.(Fig 1) Clinically positive neck nodes were present in 23% of patients. Palpable lymphadenopathy was more common with moderately differentiated lesions(35%) . Most common sites with positive neck nodes were tongue and floor of mouth(9.6% each of total patients). Most common site was tongue(36%). 67% of patients had history of smoking, 44% alcohol consumption, 46% had both together and 19% pan chewing. Among the 15 female patients 7 had the habit of pan chewing. None of them had the habits of smoking and alcohol consumption.49 (94.2%)(TABLE 2) patients belonged to lower socio-economic group. Most common pathological type was squamous cell carcinoma well differentiated(54%).(TABLE 3).

Table 1   Demographic characteristics of study population   n = 52

Age Group	Males	Females	Total(%)
31-40	2	Nil	2 (3.8)
41-50	4	1	5 (9.6)
51-60	8	6	14 (26.9)
61-70	12	6	18 (34.6)
71-80	10	2	12 (23.1)
81-90	1	Nil	1 (1.9)

Fig.1 Gender distribution
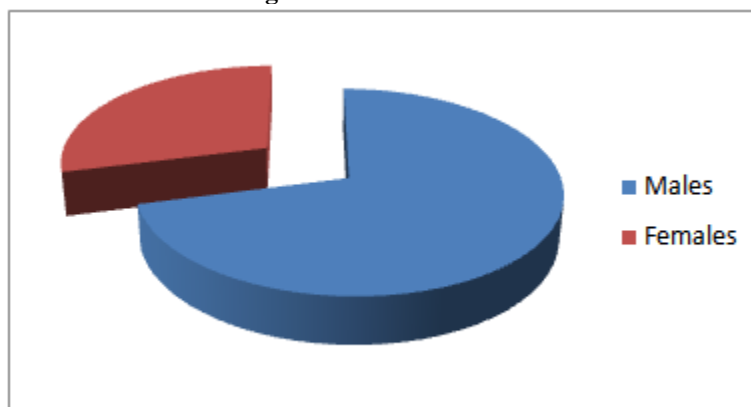
Table 2. Personal Habits of the study population.   n = 52

Personal Habits	Number (%)
None	6 (11.5)
Smoking only	12(23)
Alcohol only	Nil
Pan chewing only	10(19)
Smoking and Alcohol	23(44)
Smoking and Pan chewing	Nil
Alcohol and Pan chewing	Nil
Smoking ,Alcohol and Pan chewing	Nil
Tobacco in all forms and Alcohol	46(88.5)

Table 3. Clinico-pathological characteristics of study population.   n=52

Staging (TNM)	Number (%)
Stage I	2
Stage II	38
Stage III	8
Stage IV	4
Histopathology	
Well differentiated squamous cell carcinoma	28(53.8)
Moderately differentiated squamous cell carcinoma	17(32.7)
Poorly differentiated squamous cell carcinoma	6(11.5)
Basaloid	1(1.9)
Total	52

IV.   Discussion

Oral cancers are one of the most frequent cancers in males in India [9].Oral cancers are known to show geographical variation with respect to the age, site, sex and habits of the population.[10]. The present study shows a male predominance in the occurrence of oral malignancy(2.5:1). This is similar to that obtained in the studies of Preeti Sharma et al 2.2:1 [10] ,Agrawal et al 3.5:1[9] and Khandekar et al [11]. The high proportion of oral cancers in males may be due to the increased incidence of tobacco use in many forms. When compared to males , use of tobacco products and alcohol is less in females, but a rising trend is seen recently. Most of the patients belonged to lower socio-economic group.This may be due to patients seeking health care to our institution mainly belong to poor socioeconomic group.Regarding the age group of patients majority were in the age of 61-70yrs (mean age was 62.75),as in the study done by Dhar et al [12].Their mean age was 62 years .More than 40 age group patients were affected in most of the studies [9,13,14].

Majority of patients consumed tobacco in some form which correlates with the fact that tobacco use is a known risk factor in the development of oral cancer . In a case control study done by Loyha et al [15] There were significant associations between oral cancer and tobacco smoking (OR=4.47; 95%CI=2.00 to 9.99), alcohol use among women (OR=4.16; 95%CI=1.70 to 10.69), and betel chewing (OR=9.01; 95%CI=3.83 to 21.22), and all three showed dose-response effects. In the study of Khandekar SP et al [11], 71.3% of patients were chewing tobacco. 63.3% were smoking tobacco in the form of cigarettes or bidis. In the study of Balaram et al[16] risk factor were smoking(53%) alcohol cosumption (32%)and pan chewing (59% men and 90% of women)

In our study the most common site was tongue followed by cheek and floor of mouth and this finding is similar to that obtained in a retrospective study conducted by S. Manuel and co-workers, [14] in 2003, at the Regional Cancer Centre (RCC), Thiruvananthapuram, Kerala who analysed one of the largest series of young patients under the age of 45 years having lesions of the oral tongue. This is in contrast to the study by Preeti et al where buccal mucosa and retromolar pad were the most common sites of oral cancer[10]. Tobacco and pan chewing has been practiced from ancient time itself in India. Mostly these are kept under lips from where it is gradually absorbed after dilution with saliva. Thus the tongue particularly the side of the tongue (farthest back in the mouth) the floor of the mouth (that area beneath the tongue) and alveolus are the site of maximum insult and thus are maximally affected.

The histopathological examination of our patients showed that the most common type was squamous cell carcinoma. This finding is the same as that in the Hospital Based Cancer Registries across India. This is similar to the reports of Kalyani et al [18] and Syam et al [19] We had one case of basaloid squamous cell carcinoma. Basaloid squamous cell carcinoma is a rare aggressive variant of squamous cell carcinoma. The incidence of lymph node metastasis in our study was 23%, which is less compared to the study by Harald Essig et al(66.7%)[20]   and Doshi Nina et al(54.4%)[21].Those patients who presented with lymphadenopathy had advanced stage of the disease.

V. Conclusion

Because of the magnitude of the oral cancer problem and the trends reported, serious thought should be given to plans for prevention and early detection of premalignant and malignant oral diseases. The burden is more among the lower socioeconomic strata because of higher exposure to the risk factor—tobacco—which complicates the situation further. They have the most limited access to education,health care facilities. The greatest impact to reduce the burden of cancer comes from primary prevention . As a part of primary prevention, awareness must be created amongst the general population regarding the hazards of tobacco use and alcohol consumption.Clinical and histological screening of at risk population will be a better way for early detection.

Abbreviations: SCC-squamous cell carcinoma

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