Demographic,Histopathological Patterns and Clinical profile of Oral Squamous Cell Carcinoma (OSCC) at a tertiary level referral Hospital in Vidarbha (Central India) : A 7-year Retrospective Study.

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Abstract: *Oral cancers are one of the leading cancers in the world.However ,in India,it is one of the most common cancer and a major public health problem.The purpose of this study was to evaluate retrospectively the demographics,histopathological and clinical profile of patients with oral cancer reported at a tertiary level referral hospital in Central India.A total of 908 biopsy proven OSCC cases were retrospectively analyzed and data was collected for a period of 7 years from January 2007 to December 2013 with reference to age,sex,site involved,habits,TNM staging and final diagnosis based on histopathological findings and the results were formulated to chart the trends in central India population.Male to female ratio was 2.54 : 1. Most of the patients of OSCC were in the age group of 51-60 years (28.52%) .The most common site of presentation of primary tumor was mandibular alveolus region.Tobacco chewing along with smoking was the major cause for the development of OSCC(25.66%).Majority of the patients were presented in Stage IV (45.94%) and histopathologically well differentiated squamous cell carcinoma(54.95%) was the most common presentation.This study showed that OSCC is wide spread in the patients of this region and most of the cases report at advanced stages of the disease due to lack of awareness among the common masses.To decrease the morbidity and mortality associated with OSCC ,early detection of localized lesions combined with appropriate treatment is required.*
Keywords*: Biopsy,Mandibular Alveolus, Oral Cancer ,Squamous cell Carcinoma,Tobacco,.*

I. Introduction

Globally,Oral cancer is the sixth most common cancer with an incidence of more than 300,000 cases yearly,of which 62% occur in developing countries.[1] In India, oral cancer is one of the most common cancer and constitutes a major public health problem. Of all the oropharyngeal malignancies reported to the SEER (Surveillance, Epidemiology, and End Results program of the National Cancer Institute of the United States Public Health Service) registries in the USA between 1973 and 1987, apart from lesions of the salivary glands, gingivae, nasopharynx, nasal cavity, and sinuses, more than 95% were squamous cell carcinomas.[2] Upper aerodigestive tract alcohol- and tobacco-related oral squamous cell carcinomas are thus the major head and neck cancers.[3]

Oral cancers have a multifaceted etiology.[4] A plethora of lifestyle and environmental factors has been identified as the risk factor for oral cancers. However, smoking, tobacco chewing, and alcohol consumption are widely considered to be major preventable risk factors. In addition, the synergistic effects of tobacco and alcohol compounds the risk.

In view of the relative common presentation, delay in diagnosis is also frequent which could be correlated to patient delay (in looking for professional care), professional delay (in reading the diagnosis), or both. Thus, knowledge of the varied presentation and an experienced eye can go a long way in preventing the high morbidity and mortality associated with oral cancers.[5]

However,the spectrum of oral malignancy varies from place to place within a country.The prevalence rate of oral cancer is high in Vidarbha region of Central India and patients from surrounding areas come here to the tertiary level referral hospital.This study was planned to study the demographics,histopathological patterns and clinical profile of patients with oral squamous cell carcinoma retrospectively.

II. Materials And Methods

A retrospective study of 908 patients with a histological confirmed diagnosis of oral squamous cell carcinoma was carried out in the Department of Oral And Maxillofacial Surgery,Sharad Pawar Dental College,Sawangi(Meghe),Wardha,Maharashtra,India,from January 2007 to December 2013.The institutional ethics committee cleared the protocol and data pertaining to these patients was collected from the detailed case history performa of these patients.Data was collected in the context of age,sex,site invoved,habits,TNM staging and final diagnosis given based on histopathological features.

III. Results

There were 908 cases squamous cell carcinoma of the oral cavity confirmed by biopsy from January 2007 to December 2013.652 patients(71.80%) were males and 256 (28.20%) were females with male:female of 2.54:1[Table 1].According to age wise distribution,majority of the patients were reported in the age group of 51 to 60 years [Table 2].On the basis of primary site of involvement mandibular alveolus(42.62%) was most frequently involved followed by buccal mucosa(23.01%) [Table 3].On the basis of histopathological pattern well differentiated squamous cell carcinoma was the most frequent finding(54.95%) [Table 4].On the basis of personal habits patients with a habit of tobacco chewing along with smoking constitute the majority of the patients(25.66%) and patients with no reported habit were also reported(2.54%) [Table 5]. On the basis of TNM staging majority of the patients were in the stage IV (45.94%) [Table 6].

IV. Discussion

Oral cancer is the cancer of the oral mucosa,alveolus and lip (excluding the skin).Consumption of tobacco as smoking of bidis and cigarettes or as smokeless forms like tobacco chewing or mishri (tobacco used as tooth cleanser) is the main etiological agent of oral cancer.[6] Studies have shown that the usage of tobacco in various forms is mounting at the rate of 2 to 3% yearly,and it is expected to cause about 13% of deaths in India by 2020.[7] Understanding the epidemiology and the risk factors for oral cancers can help early identification and prompt treatment of patients with oral cancers. Early diagnosis of oral cancer is important as it leads to early institution of therapy that translates in a better prognosis. Late detection and diagnosis is directly proportional to increased morbidity and mortality.

The male-to-female distribution in our study (2.54:1) was similar to that reported in most studies, except for the study in a Greek population [8] that found a ratio of (9.2:1),Iype et al reported a ratio of (2.3:1)[9],Agrawal et al reported a ratio of (3.57:1).[10]

Majority of the patients with OSCC were in the age group of 51 to 60 years in our study which corresponds with the study of Gangane et al (2007), who have reported majority of the patients with OSCC in the age group of 50 to 59 years in there study.[11]

Epidemiological studies have shown that the sites of occurrence for oral cancer differ widely. Tongue, lip, and floor of the mouth are the most frequent sites of lesions of squamous cell carcinoma in the oral cavity.[12] A study in western UP, reported that the most common site was buccal mucosa, followed by the retro molar area, floor of moth, lateral border of tongue, labial mucosa, and palate. [13] In this study, mandibular alveolus was the most frequent site because most of the patients tend to keep the tobacco in the form of quid in the buccal sulcus with close proximity to alveolus.

Various classification systems for grading and staging OSCC like Broder's(1920) classification,TNM staging system and recent AJCC TNM system.We followed Broder's classification for histopathological grading and TNM staging system for staging.In our study out of 908 cases of OSCC, Well differentiated carcinoma constituted 499 cases(54.95%),moderately differentiated carcinoma constituted 252 cases(27.75%),poorly differentiated carcinoma constituted 121 cases(13.32%) and carcinoma in situ was reported in 36 cases(3.98%).The more number of cases being well differentiated carcinoma might be due to increasing awareness of oral cancer among people of this region coupled with cancer awareness programs by the government and various other agencies.Our findings were similar to that of Iype et al (2001) who reported that 52.6 % of there patients had well differentiated tumors.[9]

A total of 885 patients were associated with habits of tobacco, alcohol consumption, and smoking. Only 23 out of 908 patients did not report any habit. Tobacco is easily available in India and current marketing of tobacco and gutka in one-rupee pouches has been extremely accessible to all people. Andre *et al.*[14] observed a deleterious effect of the consumption of alcohol even with nonsmokers or casual smokers. In our study, 154 patients reported with combined habituation with alcohol, smoking and tobacco. The effect of consuming tobacco and alcohol leads to a dangerous synergy of expression of the disease. Sanghvi et al.[15] observed that the risk ratio for oral cancers were four-fold in chewers, two-fold in smokers, and four-fold in chewers and smokers both.

The delay in diagnosis of oral squamous cell carcinoma could be correlated to patient delay (in looking for professional care), professional delay (in reading a diagnosis), or both and presumably has some bearing on

the size of the tumor presented. This can be attributed to the fact that because of poverty, illiteracy, and possibly resorting to home remedies, all leading to delay by the patients. Most of the patients have to earn their living by daily wages and the loss of working day's means a loss of wages. Hence, these patients refer late as compared to western data. [16] In our study majority of the patients reported with Stage IV malignancy(45.94 %),Stage III (31.05%),Stage II (18.94%) and Stage I(4.07%).

V.   Conclusion

A demographic, histopathological and clinical profile of the population of Vidharba Region (Central In dia) for the patients diagnosed of oral squamous cell carcinoma has beenpresented here. The commonest age of presentation was in the sixth decade of life with male predominance (71.80%). Mandibular alveolus was the most commonly affected site. Most of the patients had associated habits of tobacco chewing,smoking and alcohol consumption. Majority of the cases were reported at the advanced stage that depicts the negligence of the health care among the population.

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. Much work is required to understand the caveats related to global demography, risk factors and their diagnostic and prognostic markers for this disease. Therefore, it is recommended that prevention of oral SCC with early detection, early treatment intervention, and withdrawal from risk habits are important factors for improving the well being of the people.

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Tables

Sex	No.of patients	Percentage(%)
Males	652	71.80
Females	256	28.20
Total	908	100

Table 1: Gender Distribution

Age Group (in years)	No.of patients	Percentage(%)
0-10	0	0
11-20	3	0.33
21-30	73	8.04
31-40	90	9.91
41-50	197	21.69
51-60	259	28.52
61-70	204	22.47
More than 70	82	9.04
Total	908	100

Table 2: Age Distribution

Primary Site	No.of patients	Percentage(%)
Buccal Mucosa	209	23.01
Mandibular Alveolus	387	42.62
Maxillary Alveolus	89	9.80
Tongue	142	15.63
Lips	43	4.73
Floor of Mouth	24	2.64
Palate	14	1.57
Total	908	100

Table 3: Primary Site

Category	No.of patients	Percentage(%)
WDSCC	499	54.95
MDSCC	252	27.75
PDSCC	121	13.32
Carcinoma in situ	36	3.98
Total	908	100

Table 4: Distribution according to histopathological diagnosis

Habits	No.of patients	Percentage(%)
Tobacco chewing alone	153	16.85
Smoking alone	117	12.89
Alcohol alone	79	8.70
Tobacco chewing+smoking	233	25.66
Tobacco chewing+alcohol	149	16.40
Tobacco chewing+smoking+alcohol	154	16.96
No Habit	23	2.54
Total	908	100

Table 5: Personal Habits

Staging	No.of patients	Percentage(%)
I	37	4.07
II	172	18.94
III	282	31.05
IV	417	45.94
Total	908	100

Table 6 : Staging