(RESEARCH ARTICLE)

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A clinicopathological study of oral carcinoma in a tertiary care hospital: Our experience

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Abstract

Background: The prevalence of oral cancer is particularly high among men, the eighth most common cancer worldwide. Incidence rates for oral cancer vary in men from 1 to 10 cases per 100 000 populations in many countries. Early diagnosis and timely intervention can change the natural history of the tumour. The aim of this study is identify and analyze the Clinico-pathological aspects of oral malignancies by a prospective case series study has been chosen.

Methods: This is a prospective study conducted at Department of General Surgery from December 2015 to November 2017. Patients having malignant neoplasm of lip, cheek, alveolus, tongue, floor of mouth and hard palate were included. Thorough examination of oral cavity was done and site of growth was noted.

Results: Squamous cell carcinoma was more common in 50 – 59 years (n=19) and Adenoid cystic carcinoma was also more common in 40 – 49 years (n=2). All the lesion present in age of above 50 years were of squamous cell carcinoma. Among male patients, most common type of lesion was Ulcerative (63.9%) followed by infiltrating (27.8%) but among females, most common type of lesion was ulcerative (78.6%) followed by infiltrating (14.3%) and papillary (7.1%) and this association of gender with type of lesion is found to be statistically not significant.

Conclusions: Clinical presentation varied according to the age group, whereas Lymph node status varied significantly according to size and depth of infiltration of lesion.

Keywords: Oral Malignancy; Infiltration; Smokeless Tobacco; Neck Lymph Nodes

1. Introduction

Oropharyngeal cancer is more common in developing than developed countries.[1,2] The prevalence of oral cancer is particularly high among men, the eighth most common cancer worldwide. Incidence rates for oral cancer vary in men from 1 to 10 cases per 100 000 populations in many countries. In south-central Asia, cancer of the oral cavity ranks among the three most common types of cancer. In India, the age standardized incidence rate of oral cancer is 12.6 per 100 000 populations. It has been estimated that 43% of cancer deaths worldwide are due to tobacco, unhealthy diet, physical inactivity and infections[1]. Tobacco use and excessive alcohol consumption have been estimated to account for about 90% of cancers in the oral cavity; the oral cancer risk increases when tobacco is used in combination with alcohol or arecanut[3]. The evidence that smokeless tobacco causes oral cancer was confirmed recently by the International Agency for Research on Cancer[4]. A thorough physical examination of the oral cavity, as an integral component of any physical examination, provides valuable insight into a person's overall state of health, though it often receives minimal attention in routine practice. Cancer, and even pre-malignant lesions, in the mouth can be seen and diagnosed by

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experienced examiners. Identification of precursor lesions is important, because they may regress if tobacco use ceases. If oral cancer is diagnosed at an early stage, treatment is generally very effective[5]. Early diagnosis and timely intervention can change the natural history of the tumour. Oral cancer invites the most interest due to their high incidence, limited surgical safety margins, early local metastasis due to higher vascularity and lymphatic rich area and high cosmetic importance.

There are an estimated 529,000 new cases of cancers of the oral cavity and pharynx each year, and more than 300,000 deaths. Oral cancers include the main sub sites of lip, oral cavity, nasopharynx, and pharynx and have a particularly high burden in South Central Asia due to risk factor exposures. A comprehensive approach is needed for oral cancer to include health education and literacy, risk factor reduction and early diagnosis. In select regions with high incidence, oral cancer screening in high-risk individuals has been trialed[5].

The advanced stage when they present to hospital is a challenge to the surgeon, surgical team and hospital when attempts are made to treat them although there is significant improvement in chemotherapy, radiotherapy and surgical technique. Local control of disease at the primary site and the management of neck disease has improved, yet despite this cure rates and survival rates have not improved during the last 40 years, 5-year survival remaining approximately 55%.

The aim of this study is identify and analyze the Clinico-pathological aspects of oral malignancies by a prospective case series study has been chosen.

2. Material and methods

This is a prospective study conducted at Department of General Surgery from December 2015 to November 2017. Patients having malignant neoplasm of lip, cheek, alveolus, tongue, floor of mouth and hard palate were included.

No specific criteria were used among the oral cancers. Detailed history was recorded in a proforma, regarding age, sex, presenting complaints, habits of chewing tobacco, pan and gutkha, habit of smoking and consumption of alcohol. Thorough examination of oral cavity was done and site of growth was noted. A thorough clinical examination of the neck and other parts of the body was also done and staged in TNM staging.

All patients underwent routine baseline investigations like urine for albumin and sugar, complete hemogram, blood for urea and sugar, serum for creatinine and bilirubin, chest x ray and ECG. All the patients were subjected to wedge biopsy of the lesion and histopathological examination of the specimen was carried out to assess the native and histological grading of the tumour.

2.1. Inclusion Criteria

Patients with histopathologically diagnosed oral malignant lesion.

2.2. Exclusion Criteria

Patients with histopathologically diagnosed benign lesion.

2.3. Statistical Analysis

Data entry and statistical analysis was performed with the help of Microsoft Excel 2010 and SPSS version 21.0, while categorical variables are presented as number and percentages. Chi-square test is used to compare differences in categorical variables. The statistical significance level was fixed at $p<0.05$.

3. Results

Totally 50 patients with oral cancer were studied and it was observed that oral cancer was more commonly found in the age group of 50 – 59 years (38%), followed by 40 – 49 years (30%), 30 – 39 years (14%), 60 - 69 years (8%)and 70 – 79 years (4%). More interestingly 6% of oral cancer was found in the younger age group of 20 – 29 years.Patients comprised of both males and females. Males were 72% and females were 28% of total study subjects. History of substance abuse revealed that 92% of patients were using smokeless tobacco, 52% were using betel nut,22% were smokers and 14% were alcoholics.

In this study, the most common type of lesion of oral cavity was Ulcerative (68%) followed by infiltrating (24%) and papillary (8%).
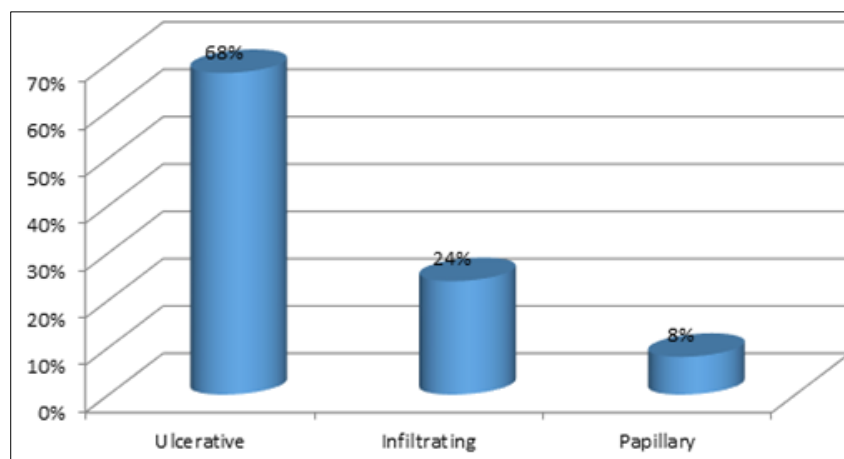

Figure 1 Distribution of Lesion in Oral Cavity

This study found that left buccal mucosa is the most common site of oral cancer (26%) followed by right lateralborder of tongue (14%), left lateral border of tongue (14%), left lower GBS (12%), right buccal mucosa (12%) and left retro molar trigone (10%). Among 2% of patients each, floor of mouth, hard palate and left angle of lip were common site. Majority of patients had a history of duration of cancer of 6 months i.e 76% and 24% of patients had a history of duration of cancer between 7 – 24 months at presentation.

Majority of patients had squamous cell carcinoma (94%) and only 3 patients had a variety of adenoid cystic carcinoma (6%).

Considering the largest diameter of oral cavity lesion, 30% of patients had a size of 2 cms lesion, 20% had a lesion of size 5 cms, 14% of patient had a lesion of 3 cms, and 14% of patients had a lesion of 4 cms. Only two patients had lesion of size 10 cms.

The above table depicts on Lymph node status and found that 36% of patients had a status of N2B followed byN0 (30%), N1 (18%), N2A (10%) and N2C (6%).
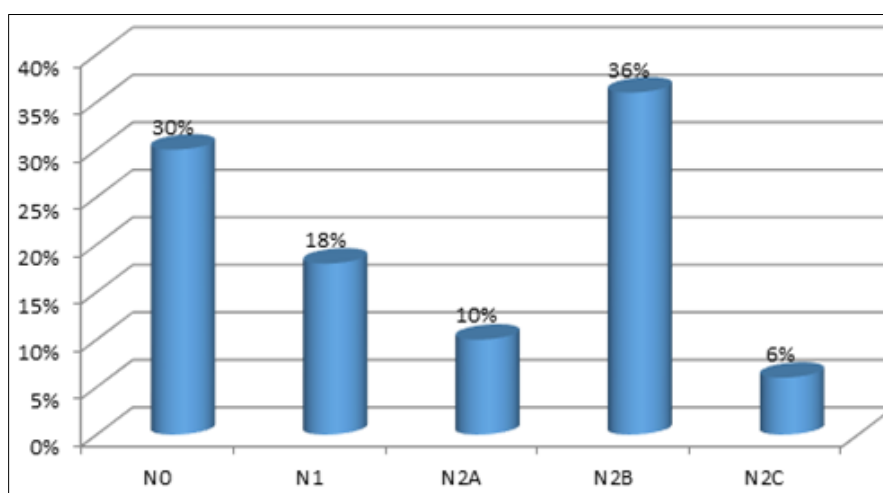

Figure 2 Distribution of Nodal Status amongst the Patients

TNM staging revealed that 30% of patients had moderately advanced local disease (T4a). T3 constitutes 30%,T2 in 14 % and T1 in 26% patients.

**Table 1** Distribution Based on Classification of Staging

Staging	Frequency	Percentage
I	6	12%
III	16	32%
IV A	28	56%
Total	50	100%

Classification of TNM staging found that 56% of patients were in a stage of IVA, 32% were in stage III and remaining 12% were in stage I.
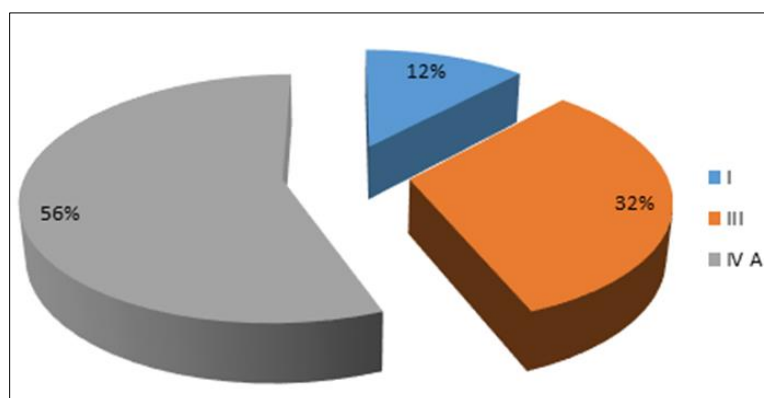
Figure 3 Stages of Oral Malignancy

Histopathological grading of oral cavity lesions classified 46% of cases as well differentiated, 38% of cases as moderately differentiated and 16% as poorly differentiated.
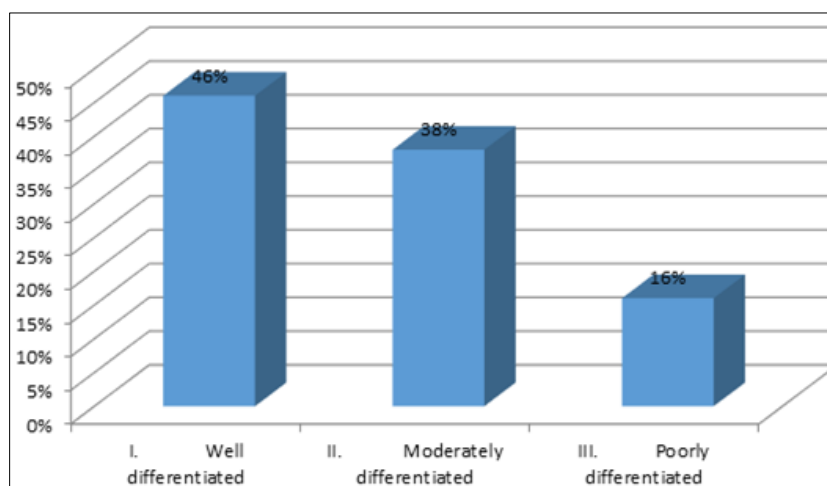
Figure 4 Distribution of the Differentiation of the Oral Carcinoma

In this study depth of infiltration range from 2 mm to 8 mm. Depth of infiltration of 3 – 5 mm was observed in 60% of cases, 6 – 7 mm in 28% of cases, <2 mm in 8% of cases and >8 mm in 4% of cases.

Squamous cell carcinoma was more common in 50 – 59 years (n=19) and Adenoid cystic carcinoma was also more common in 40 – 49 years (n=2). All the lesion present in age of above 50 years were of squamous cell carcinoma. This relation between age and type of cancer is found to be statistically not significant.

In the age group of 20 -29 years, all the lesions were well differentiated (100%). In the age group of 30 -39 years, 57.1% of lesions were well differentiated and 42.9% were moderately differentiated. In the age group of 40 -49 years, 53.3% of lesions were well differentiated, 33.3% were moderately differentiated and 13.3% were poorly differentiated. In the age group of 50 -59 years, 15.8%% of lesions were well differentiated, 52.6% were moderately differentiated and 31.6% were poorly differentiated. In the age group of 60 -69 years, 75% of lesions were well differentiated and 25% were moderately differentiated. In the age group of 70 -79 years, all the lesions were well differentiated (100%). The relation between age and histopathological grading is found to be statistically not significant.

Among male patients, most common type of lesion was Ulcerative (63.9%) followed by infiltrating (27.8%) but among females, most common type of lesion was ulcerative (78.6%) followed by infiltrating (14.3%) and papillary

(7.1%) and this association of gender with type of lesion is found to be statistically not significant.

4. Discussion

In this study, oral cancer was more commonly found in the age group of 50 – 59 years (38%). A study by Patel MM et al[6] reported 12.9% of oral and oropharyngeal malignancies below 35 years age, 23.8% between 35 and 45, and 63.3% cases over 45 years of age. In a study by Mehrotra Ravi et al,[7] the maximum incidence was in 50-59 years age range.

Patients comprised of both males and females. Males were 72% and females were 28% of total study subjects. In a study by Patel MM et al[6] 75% of patients were males; Mehrotra Ravi et al[7] from Allahabad, India reported a male: female ratio of 3.27:1.

The above mentioned studies show a male preponderance of oral and oropharyngeal malignances. The fact that oral cancer affects many more men than women may be observed in all of the studies conducted in India as well as other countries.

In this study, 92% of patients were using smokeless tobacco, 52 % were using betel nut, 22% were smokers and 14% were alcoholics. In the study done by Khandekar SP et al,[8] 71.3% of patients were chewing tobacco. 63.3% were smoking tobacco in the form of cigarettes or bidis. In the study done by Durazzo MD et al[9] tobacco smoking was identified in 80.8% patients. Alcohol consumption history was retrieved in 56.6% patients.

This study found that left buccal mucosa is the most common site of oral cancer (26%) followed by right lateral border of tongue (14%), left lateral border of tongue (14%), left lower GBS (12%), right buccal mucosa (12%) and left retro molar trigone (10%). Among 2% of patients each, floor of mouth, hard palate and left angle of lip were common site.

In a study done by Bhattacharjee et al[10] oropharyngeal cancer was the commonest site comprising 15.56% of total body malignancy and oral cavity comprising 8.87%. Tongue was the commonest site of malignancy in oral cavity accounting for 32.67% of oral cavity malignancy. Ahluwalia et al[11] from Allahabad found a major share (55.6%) of carcinoma Cheek among lesions of oral cavity.

In our study, 94% of cases had Squamous cell carcinoma and 6% Adenoid cystic carcinoma. In the study of Patel et al,[6] all the 504 patients in the study had Squamous cell carcinoma. Mehrotra and colleagues also found squamous cell carcinoma as the commonest histological variety, comprising of 85.12% of oral and 97.5% of oropharyngeal malignancies. The current TNM classification is the widely used system for predicting the clinical result of oral SCC. In our study, TNM staging revealed that 30% of patients had moderately advanced local disease (T4a), Bundgaard et al demonstrated that up to 25% of patients with T1 could show poor prognosis at follow-up[12]. Thus, the TNM system includes acceptable prognostic parameters but the biological properties of the tumor cannot be predicted.

In our study 46% of tumours were well differentiated. 38% were moderately differentiated and 16% were poorly differentiated. In the study by Patel MM[6], 60.12% of the tumours were well differentiated. 38.7% were moderately differentiated and 1.18% were poorly differentiated. Mehrotra R et al[7] also observed maximum number of well differentiated Squamous cell carcinoma.

Limitations

In the absence of many studies for reference in this area, reviewing of literature could not be done extensively.

5. Conclusion

Oral cavity cancer more commonly affects age more than forty years but younger age group are not completely spared. Tobacco, Betel nut and alcohol consumption are important etiological factor for oral cancer. Clinical presentation varied according to the age group, whereas Lymph node status varied significantly according to size and depth of infiltration of lesion.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to disclosed.

Statement of ethical approval

Appropriate ethical committee clearance sought.

Statement of informed consent

Informed written sought from all individuals.

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