

Original Research

“Study Of Oral Cancer In Our Population”

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ABSTRACT

Introduction: Cancers are the commonest cause of death in adults. Oral cancer is any malignant neoplasm which is found on the lip, floor of the mouth, cheek lining, gingiva, palate or in the tongue. Oral cancer is among the top three types of cancers in India. Severe alcoholism, use of tobacco like cigarettes, smokeless tobacco, betel nut chewing and human papilloma virus(HPV) are the most common risk factors for oral cancer

Aim and Objective of the study: The objective of this study is to find out the prevalence of oral cancer and to evaluate clinicopathological spectrum of oral cavity lesions at our tertiary care hospital.

Materials and Methods: A detailed history-taking including age, sex, complaints and duration of symptoms, site, side etc. and with thorough clinical examination relevant investigations for consistency, diagnosis, benign or malignant was done and appropriate management has been done for these patients. All relevant investigations were done. Biopsy were taken, detailed histopathological features were noted. The tissue sections were stained with H and E stain.

Results: In the present study, we included a total of 400 subjects based on inclusion and exclusion criteria presenting to our OPD with oral cavity lesions, out of which 75.5% were males and 24.5% were females. We evaluated all the subjects for oral cavity lesions with diagnostic biopsy and subjected for HPE. Among these subjects 33.5% had non-neoplastic lesion, 23% had benign lesion, 15.5% had pre-malignant and 28 % had malignant lesions.

Discussion and Conclusion: In our cross-sectional study, we included a total of 400 subjects based on inclusion and exclusion criteria presenting to our OPD with oral cavity lesions, out of which 75.5% were males and 24.5% were females. We evaluated all the subjects for oral cavity lesions with diagnostic biopsy and subjected for HPE. Among these subjects 33.5% had non-neoplastic lesion, 23% had benign lesion, 15.5% had pre-malignant and 28 % had malignant lesions. Preventive measures must be taken to reduce the incidence and mortality of oral cancer and for better survival. Because of the high population in India, cancer control activities should be prioritized to make maximum use from the limited resources. People less than 40 years who are habitual cigarette smokers, alcohol consumers, and betel quid chewers must undergo oral mucosa screening regularly so that oral cancer can be identified as early as possible.

Key-words: pre-malignant lesions, malignant lesions, leucoplakia, squamous cell carcinoma, tobacco chewing and smoking.

INTRODUCTION

Oral cancer is major public health problem in the Indian subcontinent, where it ranks among the top three types of cancer in the country. [1] The difference in incidence and pattern of oral cancer can be due to an overall effect of ageing of population as well as some regional differences in the prevalence of specific risk factor.[2] The low-income groups in India are affected most due to a wide exposure to risk factors such as tobacco chewing and insufficient exposure to newly diagnostic aids, resulting in a delay in reporting of oral cancer.[3,4]

The oral cavity includes the lips, buccal mucosa, teeth, gingiva, anterior two-third of tongue, floor of the mouth and hard palate. Oral cancer is defined as the cancer of lips, mouth and tongue. This case definition is adopted and conforms to definition of oral cavity cancers by International Classification of Diseases (ICD) coding scheme, World Health Organization case definition and International Agency for Research and Cancer.[5] Since there are wide variations in pathologies of intraoral tumors, all cancers related to oral cavity and other associated sites such as cancers of lip, tongue, mouth, tonsils, salivary gland and oropharynx have been included from 29 PCBRs in India (2012–2014). Majority of the cancers that occur in the oral cavity are oral squamous cell carcinomas (OSCC) arising from the squamous epithelial lining of buccal mucosa, tongue, the floor of mouth, palate and lip. We have taken up this study to present the clinicopathological spectrum of oral cavity lesions.

AIM AND OBJECTIVES OF THE STUDY:

The objective of this study is to find out the prevalence of oral cancer and to evaluate clinicopathological spectrum of oral cavity lesions at our tertiary care hospital.

MATERIALS AND METHODS

Source of data: This study was conducted at Dept. of ENT at Institute of Medical Sciences & SUM Hospital, Odisha

Study population: We included the subjects in the age group of >1 year and <80 years presenting with oral lesions to OPD of ENT at our hospital.

Study Design: It is a cross-sectional observational study.

Inclusion criteria: We included the subjects presented to our OPD with oral lesions who has undergone diagnostic biopsy.

Exclusion Criteria: We excluded the patients with non-diagnostic biopsy, those with incomplete information.

Data Collection: A detailed history-taking including age, sex, complaints and duration of symptoms, site, side etc. and with thorough clinical examination relevant investigations for consistency, diagnosis, benign or malignant was done and appropriate management has been done for these patients. All relevant investigations were done. Biopsy were taken, detailed histopathological features were noted. The tissue sections were stained with H and E stain.

Statistical Analysis: All the data was entered into Microsoft excel sheet and SPSS version 17 was used. Descriptive statistics were presented as frequency, percentage, mean, standard deviation using tables.

RESULTS:

We included a total of 400 subjects based on inclusion and exclusion criteria in the age group >1 year and <80 years, who presented oral lesions to our OPD.

Table 1: Baseline Characteristics of Subjects

VARIABLES	Number 400	Percentage
GENDER		
Male	302	75.5
Female	98	24.5
AGE GROUP		
1 – 10 yrs.	8	2
11 – 20 yrs.	28	7
21 – 30 yrs.	32	8
31 – 40 yrs.	68	17
41 – 50 yrs.	112	28
51 – 60 yrs.	94	23.5
61-80 yrs	58	14.5

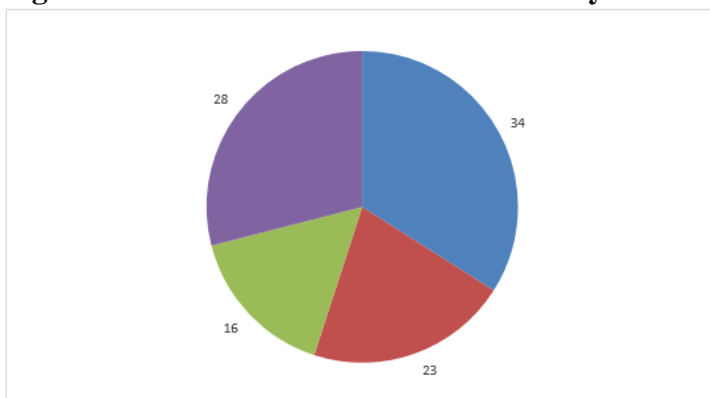
It is evident from the table 1 75.5% were males and 24.5% were females and majority of the subjects (28%) belong to the age group of 41-50 years followed by 51-60 years.

Table 2: Shows Distribution of Oral Cavity lesions based on FNAC and HPE

Type of Oral Cavity lesion	Number of Subjects	Percentage
Non-neoplastic	134	33.5
Benign	92	23
Pre-malignant	62	15.5
Malignant	112	28

It is evident from the above table that 33.5% had non-neoplastic lesion, 23% had benign lesion, 15.5% had pre-malignant and 28 % had malignant lesions.

Figure 1: Shows Distribution of Oral Cavity lesions based on FNAC and HPE



DISCUSSION

In our cross-sectional study, we included a total of 400 subjects based on inclusion and exclusion criteria presenting to our OPD with oral cavity lesions, out of which 75.5% were males and 24.5% were females and majority of the subjects (28%) belong to the age group of 41-60 years. The study by Mehrotra R et al, in 2006 showed maximum number of cases were in 6th decade. The male predominance was noted by Dietrich T, et al. Present study showed male predominance with 65.78% while in female 34.21%.⁶⁻⁷

We evaluated all the subjects for oral cavity lesions with diagnostic biopsy and subjected for HPE. Among these subjects 33.5% had non-neoplastic lesion, 23% had benign lesion, 15.5% had pre-malignant and 28 % had malignant lesions.

The most common pre-malignant lesion was leucoplakia, followed by oral lichen planus, oral sub mucous fibrosis, actinic cheilitis respectively and none had erythoplakia.

Leucoplakia defined by the WHO working group as keratotic white patch or plaque that cannot be scrubbed off and cannot be characterized clinically or pathologically as any other disease. The leucoplakia remains the most common premalignant lesion having prevalence of 2.6% globally. The various etiological factors implicated are tobacco, alcohol, chronic irritation, human papilloma virus infection, ultraviolet radiation, hot spicy foods etc. It has the strongest association with the use of tobacco in various forms like chewing tobacco (as in paan, paan masala, gutka, zarda), heavy smokers etc. There is risk factor leads to hyperplastic or dysplastic squamous epithelial lesions which progress to carcinoma in situ to invasive squamous cell carcinoma.⁸⁻¹¹ On clinical examination, various types of leucoplakia were described as homogenous and non-homogenous. They appear as flat, thin, nodular, proliferative verrucous types. Lesions are mostly unifocal but can be multifocal. These lesions can be found in any part of oral mucosa with most frequent site is buccal mucosa. Out of 48.4% malignant lesions 94.7% of the subjects had squamous cell carcinoma followed by other cancers as mentioned in the table.

Factors considered to be associated with oral cancer are tobacco smoking, alcoholic consumption, betel quid chewing, poor oral health, and human papillomavirus infection. Distinct cultural practices such as betel-quid chewing and varying tobacco and alcohol use patterns among Asian Populations are considered to be predisposing factors for alarming increasing incidence rates. Alcohol can act as a local and systemic risk factor by increasing the oral mucosa's permeability, dissolving lipid components of the epithelium, causing epithelial atrophy and interference in DNA synthesis and repair; it has genotoxicity and mutagenic effects and also affects the liver's ability to clear chemical carcinogens.¹²⁻¹⁶

Tobacco use: Estimates indicate 57% of men and 11% of women between 15- 49 years of age use some form of tobacco. More than 90% of OC cases report using tobacco products. The forms of tobacco are use of smokeless tobacco, use of betel liquid, pan (pieces of Areca nut), processed or unprocessed tobacco, aqueous calcium hydroxide (slaked lime) and some pieces of are a nut wrapped in the leaf of piper betel vine leaf. Additionally gutka, panparak, zarda, mawa, kharra and khainni. These are dry mixture of powdered tobacco, lime and Areca nut flakes which are chewed or sucked orally. Women chewing tobacco 10 or more times a day have risk 9.2 times that of non-tobacco chewers irrespective of age of initiation of tobacco chewing. Univariate analysis revealed that, in terms of oral dipping products, the risk was 7.3 for consumption of gutka, 5.3 for consumption of chewing tobacco and 4 for consumption of supari (pure areca nut. However, the lower risk was found for mishiri. [17-19]

Smoking: Smoking includes use of cigarettes, bidi and hookah. These tobacco products are commercially available in sachets or packets and it is very popular among Young adults which leads to oral cancer in young age. Bidi smokers are 4 times at risk of developing oral cancer compared to non- smokers. This could be due to poor combustibility as well as the nicotine and tar content of bidi which exceeds that of cigarette. This could be due to poor combustibility as well as the nicotine and tar content of bidi which exceeds that of cigarette. The number of bidis smoked per day, a longer duration of smoking and a younger age at starting to smoke was associated with oral cancer. [17, 18]

Oral Hygiene: Poor oral hygiene also causes oral cancer. In one study, more than 85% of oral cancer patients had poor oral hygiene. Poor oral hygiene related attributable risk is around 32% for men and 64% for women in India. Patients wearing dentures for more than 15 years and not visiting a dentist regularly was highly associated with Oral cancer.

Oral cancer will remain a major health problem and the incidence will increase by 2020 and 2030 in both sexes, however early detection and prevention will reduce this burden. Oral cavity is accessible for visual examination, and oral cancers and premalignant lesions have well- defined clinical diagnostic features but oral cancers are typically detected in their advanced stages. Oral cancer can be diagnosed earlier by self-mouth examination, increase awareness in high-risk communities. Early detection has better curing rates and it will also reduce the cost for the treatment. In India, the incidence of oral cavity cancers, is still one of the highest in the world because tobacco products are easily available and the lack of awareness in the community. Oral cancer can be prevented by action against risk factors, especially tobacco which is the key factor. The enforcement of laws on youth access to tobacco and alcohol; the prohibition of all advertising and promotional activities by the tobacco industry the prominent inclusion of strong pictorial warnings in existing written warnings on the labels of tobacco and alcohol products, More multi centre randomized controlled trials of dietary supplementation for persons with precancerous lesions are required to assess the efficacy of vitamins, retinoids and carotenoids, The role of HPV should be tackled in culturally acceptable health programmes promoting safe sexual practices, Education campaigns are needed to raise public awareness about oral cancer and its links with tobacco and alcohol consumption. Facilities for accurate staging, including advanced imaging, and experienced multidisciplinary teams can improve long term survival and quality of life.

CONCLUSION

In our cross-sectional study, we included a total of 400 subjects based on inclusion and exclusion criteria presenting to our OPD with oral cavity lesions, out of which 75.5% were males and 24.5% were females. We evaluated all the subjects for oral cavity lesions with diagnostic biopsy and subjected for HPE. Among these subjects 33.5% had non-neoplastic lesion, 23% had benign lesion, 15.5% had pre-malignant and 28 % had malignant lesions. Preventive measures must be taken to reduce the incidence and mortality of oral cancer and for better survival. Because of the high population in India, cancer control activities should be prioritized to make maximum use from the limited resources. People less than 40 years who are habitual cigarette smokers, alcohol consumers, and betel quid chewers must undergo oral mucosa screening regularly so that oral cancer can be identified as early as possible.

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