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ANALYSIS

Prevalence of Oropharyngeal Cancers in Biopsies Received in CIMS, Bilaspur: "A Retrospective-Tertiary Hospital Based Study"

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ABSTRACT

This hospital based study which is a tertiary centre seeks to find out the incidence and prevalence of oral and oropharyngeal cancers amongst the patients attending Chhattisgarh Institute of Medical Sciences (CIMS) and undergone for surgery and biopsy. The CIMS is situated in Bilaspur Chhattisgarh which is the central east part of India and has inadequate health care facilities, low socio-economic status and also people are in habit of chewing tobacco. In our study which is exclusively non gynecological, 3199 cases reported in the pathology department from 2003 to 2013 & amongst which 21.70% cases were malignant. Amongst malignant lesions, contribution of oral and oropharyngeal cancer was 15.99%. Majority of the cases presented as squamous cell carcinoma and were in advanced stages of the disease.

Key Words: oral cancer, tobacco, smoking, oropharyngeal, CIMS.

1. INTRODUCTION

Cancer, which is defined as an abnormal growth of cell, can affect any tissue or organ of the body. Oral and oropharyngeal canceris very common in men in developing countries, and is the most common form of cancer and cancer related deaths in men in India [Ferlay J et al. 2004, Parkin DM et al. 2004]. Its high risk in the Indian subcontinent is related to the popularity of pan-tobacco [a combination of betel leaf, lime, and canutandsuncured tobacco] chewing in the region [IARC Press 2004].Oral cavity is the most common cancer site observed by Indian

registries [National cancer registry programme. Biannual report 1987-1989. New Delhi: 1992]. Epidemiological studies have shown that incidence of oral cancer varies significantly in different continents and also in developing countries like India [Jovanovic A et al 1993].

World is heading towards various types of non-communicable diseases, which are also known as modern epidemics. Among these modern epidemics cancer is the second commonest cause of mortality in developed countries**.** In developing countries, cancer is amongst the ten commonest causes of mortality [Park K, 1994]. According to WHO, 40% of the oral cancers which were diagnosed worldwide belong to India, Pakistan, Bangladesh and Srilanka, furthermore, oral cancer incidence and mortality rates in South Asia are almost twice than those of global rates [Ferlay J et al. 2004].

Oral and oropharyngeal cancer is major health problem, especially in developing countries. It is the largest group of malignancies in India with rising prevalence and mortality rates. It is a very big challenge to health services, both preventive and diagnostic.Data from the National Cancer Registry Program of the Indian Council of Medical Research has confirmed the fact that oral cancer is indeed a common form of cancer in India [National cancer registry program, Biannual report 1992]. It is the most prevalent cancer in males as well as third most common in females [Sankaranarayanan R, 1990].

Though many studies have been carried out in the different parts of the country, only few studies have been carried out in the Central east India. The present study was carried out to study the prevalence of oral cancer cases attending a tertiary health centre of central India and to study the association of tobacco in its causation.

2. MATERIAL AND METHODS

This hospital based study seeks to find out the prevalence of oral and oropharyngeal cancers amongst the patients attending CIMS, situated in Bilaspur, Chhattisgarh.The catchment area was in and around Bilaspur, which is central eastern district of Chhattisgarh. Total non-gynecological cases studied in pathology department from 2003 to 2013 were 3199, in which malignant cases were 694 (21.70%), and benign cases were 2505 (78.30%). Out of 694 malignant cases, 400 (57.63%) were males and 294 (42.37%) were females, in which 111 (11.6%) cases were oral and oropharyngeal malignancies. Data of these 111 cases were collected year-wise in the context of age, sex& site involved with history of addiction. Male and female distribution of oral and oropharyngeal cancers out of 111 cases was 85 (76.57%) and 26 (23.42%) respectively. Total percentage of oral and oropharyngeal cancers in males out of 400 was 21.25% and in females out of 294 was 8.84%. Thus overall distribution in males is quite higher as compared to females.

Table 1

Distribution of Study Subjects as Benign & Malignant

Benign	Malignant
2505 (78.30%)	694 (21.70%)

Table 2

Distribution of Study Subjects according to sex, Oral & Oropharyngeal and other malignancies

Sex	No. of subjects = 694
Male	400(57.63%)
Female	294 (42.37%)
Oral & Oropharyngeal	**111(15.99%)**
Others	**583(84.01%)**

Table 3

Distribution of Malignant Lesions as Oral &Oropharyngeal cancers

Age Interval	No. of Subjects (%)
< 30 years	12(10.81%)
31 years-40 years	20(18.02%)

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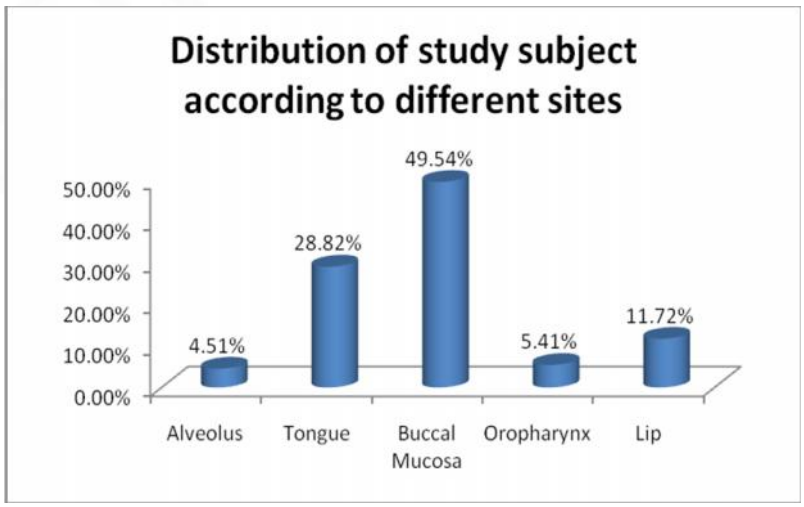
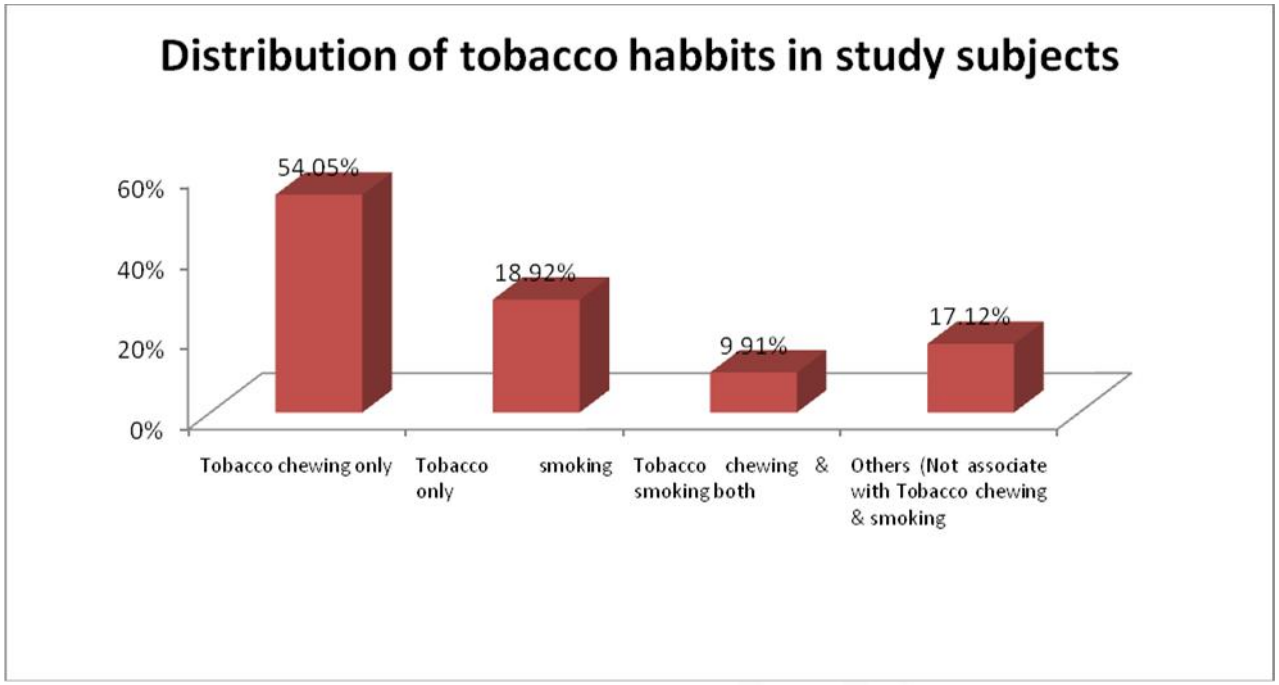
41 years-50 years	31(27.92%)
51 years-60 years	25(22.52%)
61 years-70 years	16(14.42%)
>70 years	7(6.31%)
Total	**111 (100%)**
Sex	
Male	85(76.57%)
Female	26(23.43%)
Total	**111 (100%)**
Tobacco Habits	
Tobacco chewing only	60(54.05%)
Tobacco smoking only	21 (18.92%)
Tobacco smoking &Chewing	11 (9.91%)
Others (Not associated with Tobacco & smoking)	19 (17.12%)
Total	**111(100%)**
Different Sites	
Alveolus	5(4.51%)
Tongue	32 (28.82%)
Buccal Mucosa	55(49.54%)
Oropharynx	6(5.41%)
Lip	13(11.72%)
Total	**111(100%)**
HistopathologicalTypes	
Verrucous Carcinoma	7(6.30%)
SCC(Grade1/2/3)	102 (91.90%)
Other	2(1.80%)
Total	**111(100%)**



Graph1

Showing distribution of Malignancy according to sites



Graph 2

Above graph showing distribution of study subject according to Tobacco Habits

3. RESULTS

In this study out of 694 malignant lesions, 111 cases reported as oral and oropharyngeal cancers, in which tobacco related cancers were found predominanti.e. 82.88%.Most patients reported were belonging to low socioeconomic status and presented at advanced stages. Majority of the subjects included in study were from 31-60 years age group i.e. 76 (68.46%). Out of 111 oral and oropharyngeal cancer cases, 85 (76.57%) of the subjects were male and 26(23.43%) were females. As this is tribal zone health care facilities are not optimum and people's socioeconomicstatus is low, therefore most of the cases reported were in advanced stage.

Buccal mucosawas the commonest site of involvement, found to be 45.94% of total cases.Histopathologically, 98 cases were diagnosed as squamous cell carcinoma(including well/moderately/poorly differentiated), 7 were diagnosed as verrucous carcinoma, 4 were micro- invasive squamous cell carcinoma, and two were belonging to other categories (Adenoid cystic carcinoma and Polymorphous low grade adenocarcinoma). Benign lesions of oral and oropharyngeal sites found in present study were only 91, which is less then malignant lesions of same sites, probably due to attending the tertiary centre in late stage, low socioeconomic status, lack of awareness, and to seek the modern treatment as last resort being a tribal belt.

Most of the cases were tobacco smokers (in form of bidi and cigarette) or tobacco chewers (in the form of betel quid or khaini) along with history of alcohol consumption in fair number of subjects. Amongst tobacco chewers, majority were having this habit for >15 years.

4. DISCUSSION

Oral cancer is the commonest cancer in our country. It accounts for about 50-70% of total cancer related mortality [Park K, 1994]. Primary epithelial cancer accounts for 96% of all oral cancers of which squamous cancer is the most common type [Silverman S Jr, editor; oral cancer, ed 3, Atlanta, 1990]. The present study also shows 109 cases of primary epithelial cancer which is approximately 98%, and maximum number of cases wasfound amongst males due to habit of tobacco consumption. Tobacco is consumed in two forms, chewing and smoking. In our society, females are generally not indulged in tobacco smoking [Mehta FS et al 1982, Mathew Ipe E et al. 2001]. In our study, percentage of females is also quite low as compared to males. The low socio-economic status may be a risk factor for poor oral hygiene, which further increases risk in tobacco chewers. Similar finding have also been shown by Balaram et al. among the cases of oral cancer [Balaram. P et al. 2002]. In our study also most of the subjects were belonging to lower socio-economic strata of the society.

Oral cancer occurs at sites which are clinically accessible and approachable to early diagnosis by current diagnostic tools, but majority of the cases reported late to the health care facilities as evident from the finding of present and other studies [Balaram. P et al. 2002, Gupta PC et al. 1980]. The late presentation of cases reduce the chances of survival because the studies have shown that detecting oral cancer in early stage, when these are treatable to single modalities of therapies, offer the best chance of long term survival [Yeole BB et al 2003].

Modern tools should also be included for early diagnosis like genetic study. Deletion of chromosomes 3p and 18q, non-random deletions and rearrangements of other chromosomes, p53 mutations, amplification and over expression of the epidermal growth factor and amplification of oncogenes have been described [Vokes EE et al. 1993]. Although the genetic basis for oral and oropharyngeal carcinomas has not been as thoroughly worked out as that for colon and breast carcinomas but information is beginning to develop.

Amongst all the factors believed to cause oral and oropharyngeal cancer, tobacco use and alcohol consumption, alone or in combination, are the major offenders [Grahm S et al. 1997, Mashberg A et al. 1981]. It is very well noticed in the present study. Earlier studies have also shown the sameresults. On the basis of finding of present study, health education of the community regarding hazards of tobacco consumption and education about danger of oral cancer with use of all modern tools forearlydiagnosis are recommended.

5. CONCLUSION

This study showed that the percentage of oral and oropharyngeal malignancies is high in this region due to low socioeconomic status, lack of health awareness and findings also revealed habits of people using variety of addictive substances. Being a tribal zone, close follow up and evaluation is required for this population. The awareness programs need to be increased involving this community through health workers as well as health professionals.

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