

Research Article

Pattern of oral cancer registered at a tertiary care teaching hospital in rural Western Maharashtra

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ABSTRACT

Non-communicable diseases including cancer are emerging as major public health problems in India. Cancer usually means malignancy, has become one of the ten leading cause of death in India. The leading sites of cancer vary from country to country. Oral cancer ranks in the top three of all cancers in India, accounting for over 30% of all cancers reported in the country and its control is quickly becoming a global health priority. The present study was conducted to find out the contribution of different type of oral cancer in a tertiary care teaching hospital of western Maharashtra, India. A retrospective hospital record based study was carried out for the period of 2007-2011 in the department of Radiotherapy of Pravara Rural Hospital, Loni, Maharashtra, India. A total of 5879 patients who were diagnosed with cancer, of them 633 (10.76%) patients had oral cancer. Data was collected on the basis of the patient's record in the hospital and analyzed in the form of percentage and proportions whenever appropriate. A total of 633 oral cancer patients were screened, of which 411 (64.93%) were males and 222 (35.07%) were females. Among oral cancer, buccal mucosa was highest (37.12%); followed by tongue (36.80%), oropharynx (4.74%) and lip and palate (3.15%). Oral cancer is one of the common malignancies in developing countries like India. It is common in males compared to females and is usually seen after middle age.

Keywords: Oral cancer, Pattern, Tertiary health center

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 The term 'cancer' usually means malignant neoplasm. It may be regarded as a group of diseases characterized by abnormal cell growth, ability to invade adjacent tissues and/or distant organs and the eventual death of the affected patient. It can involve any tissue of the body.² However cancer has become one of the ten

leading causes of death in India, estimated that there are nearly 2-2.5 million cancer cases at any given point of time. There are 0.7 million new cases and 0.3 million death occur due to cancer yearly.³ According to International Agency for Research on Cancer (IARC), there were 10.9 million new cases, 6.7 million deaths and 24.6 million persons living with cancer in the year 2002. Due to increase in life expectancy, elderly people in developing countries are going to reach 15% in the year 2050 from 5% in 2000 (UN 2002). According to Farley et

al. 2004, there will be 17 million new cases in the developing world by the year 2050.⁴ Age is the single most common risk factors for cancer.⁵ From an epidemiological and clinicopathological perspective, "oral cancer" can be divided into three categories: carcinomas of the oral cavity proper, carcinomas of the lip vermilion, and carcinomas arising in the oropharynx.^{6,7} Hence the objective of the study was to find out the pattern of different site of oral cancer visited the department of radiotherapy in a tertiary care teaching hospital of western Maharashtra, India.

METHODS

A retrospective hospital record based study was carried out for the period of Jan. 2007 to Dec. 2011 (i.e. 5 years) in the department of Radiotherapy of Pravara Rural Hospital (PRH), Loni, western Maharashtra, India. PRH is a tertiary level health care center attached as a teaching hospital of Rural Medical College, Loni, which caters to the needs of the Ahmednagar district and comes under the aegis of Pravara Medical Trust. A total of 5879 patients who were diagnosed with cancer during the five studied years, of them 633 (10.76%) patients with a histopathological diagnosis of primary malignant neoplasm of the oral cavity were reviewed. Ethical committee of the institute approved the study. Data were collected on the basis of the patient's record maintained by the department of Radiotherapy which included patient's age, gender, anatomical location i.e. buccal mucosa, alveolus, tongue, floor of the mouth, tonsil and palate.

Statistical analysis: All recorded data for this year were entered in MS Excel and analyzed in the form of percentage and proportions whenever appropriate.

RESULTS

In the present study, out of total 5879 patients who were diagnosed with cancer during the five studied years, of them 633 (10.76%) patients had different type of oral cancer.

It was observed from Table 1 that, out of total 633 oral cancer patients were screened, of which 411 (64.93%) were males and 222 (35.07%) were females which show predominance of males with male to female ratio 1.85:1 for the five studied years. The overall proportion of buccal mucosa cancer was (37.12%), tongue was (36.80%); oropharynx was (4.74%) and lip and palate (3.15%) was detected. The highest proportion being buccal mucosa followed by tongue and the lowest being lips and palate.

It was seen from Table 2 that, the overall highest occurrence (29.85%) was at the age group >60 years, followed by 23.54% at the age group 50-60 years, with the lowest occurrence (4.10%) was at the age group of <30 years. Regarding the distribution of study population

by age and site of oral cancer, it was observed that the buccal mucosa and palate contributed to maximum cases at the age groups <30 years i.e. 53.84% and 7.70% respectively, while for tongue and alveolus, the age groups between 50-60 years i.e. 42.28% and 16.10% respectively, and for oropharynx and lips, the age groups >60 years i.e. 6.88% and 6.34% respectively.

Table 1: Distribution of study population according to site of oral cancer and gender.

Site of oral cancer	Male	Female	Total
Lip	13 (2.05)	07 (1.10)	20 (3.15)
Alveolus	49 (7.74)	28 (4.42)	77 (12.16)
Floor of mouth	15 (2.36)	03 (0.48)	18 (2.84)
Buccal mucosa	141 (22.27)	94 (14.85)	235 (37.12)
Tongue	157 (24.80)	76 (12.00)	233 (36.80)
Oropharynx	23 (3.64)	07 (1.10)	30 (4.74)
Palate	13 (2.05)	07 (1.10)	20 (3.15)
Total	411 (64.93)	222 (35.07)	633 (100.00)
Figures in parenthesis indicates percentage			

DISCUSSION

Oral cancer is the most common cancer in India accounting for 50-70% of total cancer mortality. Though it is more common in males, the rate is increasing in females also. In our study, the majority (64.93%) of the patients was males and only 35.07% were females which show predominance of males with male to female ratio 1.85:1 for the five studied years. Similar sex distribution has been reported by many authors. In a study by Patel MM et al,⁸ at Surat, Gujarat, 75% of the patients were males. Mehrotra R et al,⁹ from Allahabad, India reported a male: female ratio of 3.27:1. Iype EM et al,¹⁰ from Trivendrum, Kerala found a higher preponderance in males (70%) compared to females (30%). Wahid A et al,¹¹ from Abbottabad, Pakistan found 60% males and 40% females. Durazzo MD et al,¹² from Brazil reported 68.2% cases were males and only 31.8% were females.

In our study, among oral cancer, the buccal mucosa was the most common site involved (37.12%) followed by tongue (36.80%) and alveolus (12.16%). Oropharynx (4.74%), floor of mouth (2.84%) and lip and palate (3.15%) were the other sites involved in the study. Similarly in the study by Patel MM et al⁸ conducted at Surat, Gujarat, the tongue was the most common site (23.02%), followed by the alveolus, lips and cheeks. Mehrotra R et al,⁹ in their study found the tongue to be the most common site (42.57%) followed by the cheek in 19.14%. Iype EM et al,¹⁰ found the tongue as the most

common site (52%) followed by cheek (26%), alveolus (10%), palate (4.5%), lip (2.3%) and floor of mouth (1.9%). Durazzo MD et al,¹² in their study found 55.6% of patients having cancer of the tongue and floor of mouth. Wahid A et al,¹¹ in their study at Abbottabad, Pakistan, reported a maximum number of oral cancer in

the buccal mucosa (34%) and other sites were the lip (26%), tongue (21%) and alveolus (19%). A study by Ahmed F and Islam KM,¹³ from the Department of Pathology, Dhaka Medical College, Bangladesh, found that the cheek to be the most common site, the next being the tongue.

Table 2: Distribution of study group according to site of oral cancer and age (n=633).

Age Group (in Years)	Oral cancer according to site							Total
	Lip	Alveolus	Floor of mouth	Buccal mucosa	Tongue	Oro-pharynx	Palate	
	No.	No.	No.	No.	No.	No.	No.	
<30	00 (0.00)	04 (15.38)	00 (0.00)	14 (53.84)	05 (19.23)	01 (3.85)	02 (7.70)	26 (4.10)
30-40	00 (0.00)	10 (7.69)	03 (2.30)	50 (38.46)	52 (40.00)	06 (4.61)	09 (6.92)	130 (20.54)
40-50	04 (2.88)	13 (9.35)	04 (2.88)	57 (41.00)	55 (39.56)	04 (2.88)	02 (1.44)	139 (21.96)
50-60	04 (2.68)	24 (16.10)	03 (2.01)	48 (32.21)	63 (42.28)	06 (4.02)	01 (0.67)	149 (23.54)
>60	12 (6.34)	26 (13.75)	08 (4.23)	66 (34.92)	58 (30.68)	13 (6.88)	06 (3.17)	189 (29.85)
Total	20 (3.15)	77 (12.16)	18 (2.84)	235 (37.12)	233 (36.80)	30 (4.74)	20 (3.15)	633 (100.00)
Figures in parenthesis indicates percentage								

Rural areas in middle and low income countries like India have inadequate access to trained providers and limited health services. As a result, delay has also been largely associated with advanced stages of oral cancer. Despite the fact that oral cancer and consequences can be prevented, treated and controlled, there exists a significant gap in the Indian public's knowledge, attitudes and behaviours.

CONCLUSION

In the present study, the higher proportion of oral cancer was of buccal mucosa (37.12%) followed by tongue (36.80%) in a tertiary care hospital based in a rural area of India. Such studies are necessary to draw the attention of the authorities to the growing need of intensive public oral health efforts that aim to raise the population awareness about the risk factors of oral cancer as well as importance of early diagnosis and treatment.

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