

The Hierarchy of Oral Cancer in India

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ABSTRACT

Background: India constitutes more than 80% of population from the villages and are not only socially and economically deprived but also do not get medical facilities compared to small towns and cities. Newspaper says India is fastest developing country, but, in respect to medical service to her citizens at rural level, it is nil. Now, oral cavity cancer is 3rd commonest cancer, which is seen commonly in village people in both sexes. We reviewed the past studies on oral cancer and the same is compared with the present trend.

Oral cancer biopsies secured 29.54% among all malignant biopsies. Male to female ratio is 1:1. Majority of patients (38.5%) got oral cancer in 4th decade, followed by 35.2% patients in 3rd decade. Buccal mucosa (57.5%) was the commonest site, followed by tongue (24.2%). Gutkha (the smokeless tobacco) is commonest cause for this cancer.

Conclusion: Apart from chewing habits, illiteracy, poverty, low caloric diet and nonavailability of free medical facility is the cause for rise in oral cancer incidences.

Keywords: Chewing tobacco, Illiteracy, Poverty, Nonavailability of free medical facilities are the causes.

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INTRODUCTION

Habits of smoking/chewing tobacco along with alcohol abuse is seen everywhere, in all the sections of people in the globe. There are 12 million smokers and billions of people who chew tobacco.^{1,2} Previous Indian studies warned that India is having highest incidence of oral cancer and tobacco is the cause for it.³⁻⁶ Male to female ratio previously was 3.8:1. Vital nutrients deficiency, unhygienic oral cavity, illiteracy along with major chewing habit is the cause for this cancer.⁷ Oral cancer was commonly seen in 5th to 6th decades. Oral cancers are among few cancer whose cause is known, can be prevented and easily diagnosed and cured in early stage.⁸ Why India has retained its crown for highest incidences of cancer in the globe, though Indians are not proved that they are genetically mutated for this cancer.

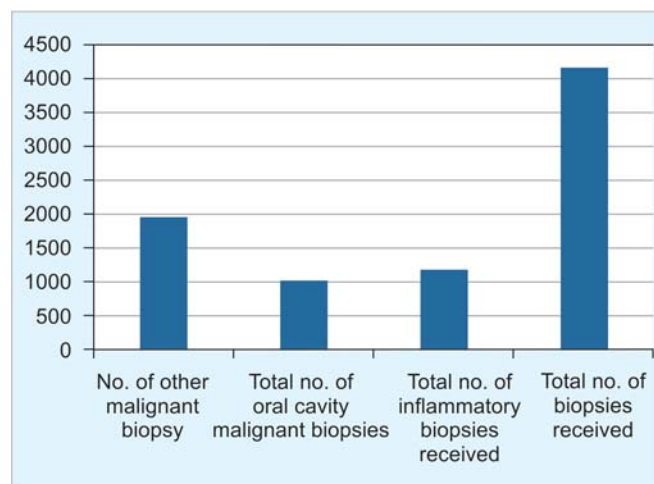
MATERIALS AND METHODS

We reviewed the past 66 years of research work literatures on oral cancer in India and the same was used as base for the present work on oral cancer. We have gone in detailed hospital records of each patients and clinically examined them. To find the environmental cause, we went to their

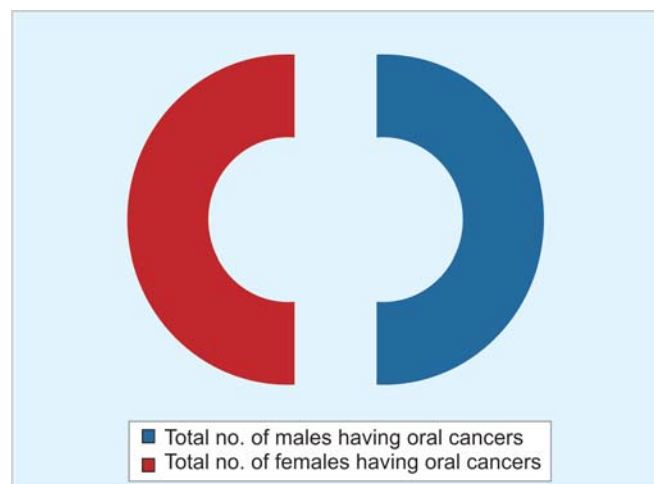
villages and collected information's about the habits, awareness of hygiene and health care, nutritional status by indirect method, educational status and medical facilities, then came to conclusion for, why India is having highest incidences of oral cancer.

RESULTS

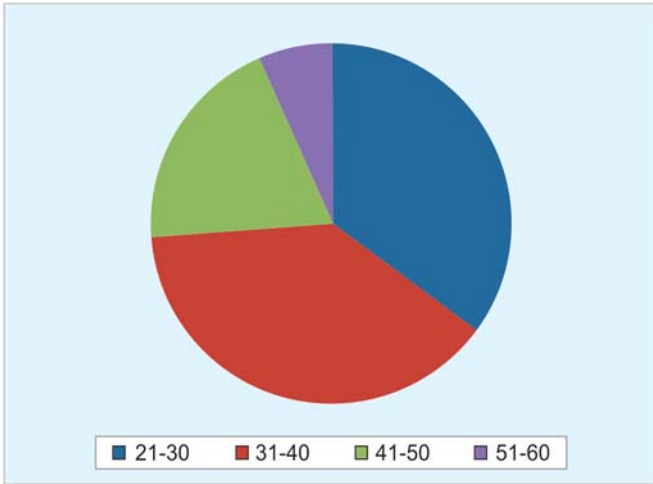
A total of 4,137 biopsies received in 1 year, of which 2,963 were malignant, including 997 (29.54%) oral cavity biopsies (Graph 1). Oral cavity cancer was 3rd most common cancer in both sexes. Commonest site was buccal mucosa (57.8%), followed by tongue (24.2%). Female 503 (50.45%) are competing with male (49.54%) equally to get this cancer forming male to female ratio 1:1 (Pie Chart 1). Majority of patients belongs to 35 to 45 years of age group 384 (38.5%), followed by 351 (35.2%) of 25 to 35 years of age group



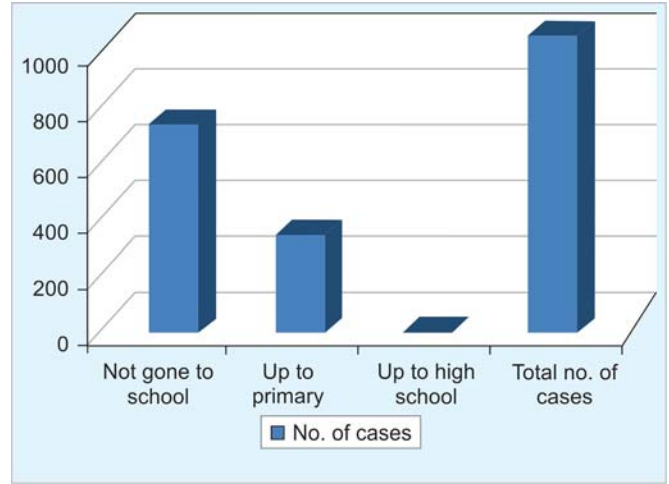
Graph 1: Number of biopsies received in 1 year



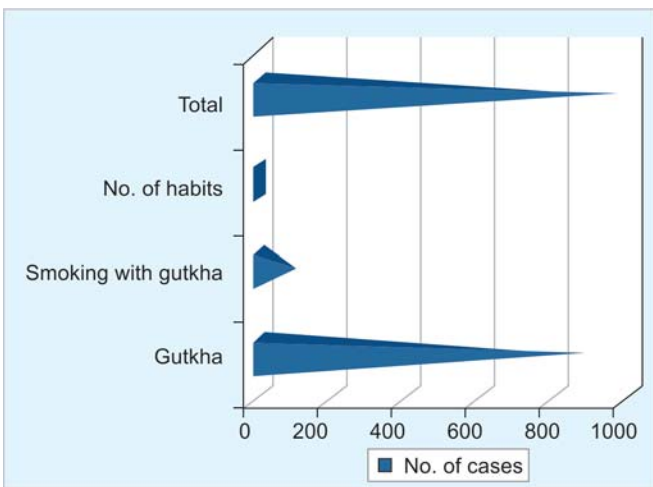
Pie Chart 1: Male to female ratio of oral cancer incidences



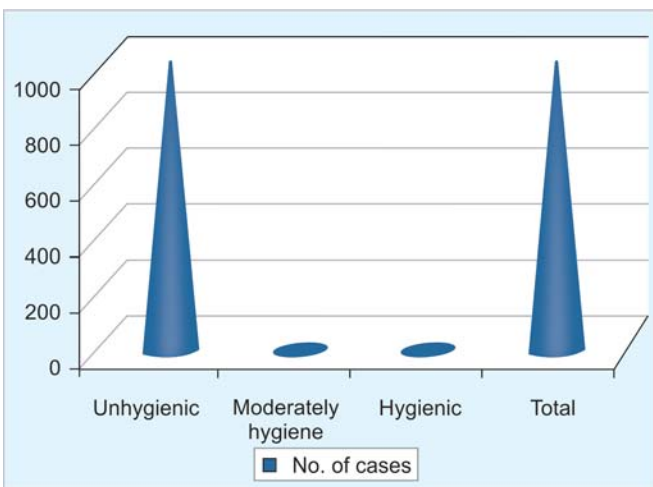
Pie Chart 2: Percentage of oral cancer patients at various ages



Graph 4: Educational status of patients



Graph 2: Number of patients having different tobacco habits



Graph 3: Patients' hygienic condition

(Pie Chart 2). Smokeless tobacco (gutkha) chewing habit was most commonly adopted habit by majority [887 (88.66%)] of patients, followed by 109 (10.93 %) patients, not only they chewed smokeless tobacco, but also they smoked. Only one patient was not having any kind of habits

which cause oral cancer (Graph 2). All the patients belong to socioeconomically poor categories and 889 (89.16%) were villagers. Majority were having unhygienic oral cavity 983 (98.59%; Graph 3). Literacy status of patients show that 689 (69.1) did not go to school whereas 301 (30.19%) studied in primary school (Graph 4). Body mass index (BMI) of the patients were used to assess nutritional status by direct method and it was found that 994 (99.69%) were having low BMI.

DISCUSSION

Many research work on oral cancer in India were undertaken, published, suggested and alerted the concerned authorities to curb the incidences of oral cancer since the period of independence. These authors studied oral cancer incidences in such a way that each were in touch to get report from various parts of India (Table 1). Indian Government/other organizations have spend a lot of funds for health care of people since 66 years after the independence but that is not reached to these poor. So, still the incidence rate is as it is and also there are still chances of increase in incidences.

Sharma⁶ and Krishna⁴ study shows that majority of cases of oral cancer were seen at 4th and 5th decades and youths of age group 21 to 30 were 1.6% and 2.06% respectively, whereas, at present, commonest age group to get oral cancer is 31 to 40 years (38.5%) and is followed by the young generation of age group 21 to 30 years (35.2%) (Table 2). These youths of 21 to 30 years now increased cancer incidences to 18 times higher than above studies. Gutkha (the smokeless tobacco) is the cause for it, it is easily available in sachets, Government has permitted to sale it, although it causes early cancer than smoking. Many literatures including Chaturvedi Pankaj in 2010, said that, gutkha contains tobacco and supari (betel nut), lime and some unknown flavoring agents and all these are

carcinogenic, young generation keep this ingredients in buccal mucosa for longer period and chew it. This causes irritation to mucosa, depending on frequency and duration of chewing, buccal mucosal cells attain stage of irreversibly injured and transforms into malignant one.^{9,10} Young generation chew it even in the buses, for which no one will objects, so, there is increase in this cancer incidences which is seen in youths.

Past studies show that males get oral cancer more than females, but now, male to female ratio is equal. Balaram et al¹¹ said that, incidences of oral cancer in woman is due to ethnicity which strongly influences high rate of oral cancer in women due to social and cultural practice of chewing habit, which is seen equally in both genders (Table 3). Now, woman too, use smokeless tobacco like male equally and are suffering by oral cancer which is the 3rd most common cancer after cervix and breast in female.

Krishna's (1964)⁴ and Khanna's (1975)¹⁷ study says that chewing tobacco was present in 80.4 and 80.46% patients respectively, and smoking habit was present in 51.5 and 31% patients respectively. Now, people marginally reduced smoking and have diverted their habits toward smokeless tobacco chewing, which may be due to increased rate of bidis (tobacco wrapped in leaves and then smoked).¹² Indians have retained the orthodox of their ancestors by maintaining the percentage of tobacco chewing and smoking still today and are addicted for tobacco.

Sigmund Freud, the father of psychoanalysis¹³ loved cigar and started smoking at the age of 24, he refused the

Table 3: Comparative analysis of sex ratio of oral malignant tumors

Authors	Year	Male/female
Balasubramanyam et al ⁹	1954	1.68:1
Sharma ⁶	1964	3.8:1
Llewellyn CD ¹⁰	2003	2:1
Prabha Balaram ¹¹	1998	1:1

advice of his physician to quit the smoking. At the age of 72, he wrote about his fatal habit and said that, without cigar, it is very difficult because it gives pleasure. He was operated thrice and died at 83, in 1939, because of palatal cancer.

In India, individuals with low income groups were more likely to chew tobacco, smoke bidi and drink alcohol. Poor people eat less fruits and vegetables as they do not know the nutritional value of these.^{7,14-16} Our direct method of nutritional assessment proved, 95% people having oral cancer are below the normal BMI. Many people do chewing/smoking along with alcoholic habits chronically, but they prolong the consequences of cancer by taking near to balanced diet which contains essential vitamins, minerals along with other vital nutrients, like, Sigmund Freud, who survived till 83 years in spite of his routine chronic habit as he had regular balanced diet. Vital nutrients increase our immune status, which fights against the transformation of cells into malignant, thus malignancy can be prolonged.

Poor people's oral hygiene is unhygienic because they do not have the knowledge of their health care and its importance, unhygienic predisposes for accumulation of infection, which gives rise to malignancy.

CONCLUSION

On 2nd October 2008, Government of India passed an act to ban smoking in the public places, now that act is included in the list of ineffective acts, like anticorruption act and dowry act. Recently, Government of Rajasthan and Madhya Pradesh has banned gutkha production and sale in the state to curb incidences in young generation, but, people will use tobacco, lime and some spicy materials

Table 1: Comparative analysis of incidence of oral cancer since 1957

Place	Authors	Year	Percentage of oral cancer
Mumbai	Paymaster	1957	35.9
Agra	PN Wahi	1958	26.3
Chennai	Krishnamurty	1959	39.0
Kanpur	Gopal Krishna	1964	27.6
Karnataka	Bhargava	1973	16.2
Present study from South India	—	2012	29.5

Table 2: Comparative analysis of distribution of oral malignant tumors in different age groups

Age	Sharma 1964		Gopal Krishna (1964)		Present study (2012)	
	Number of cases	Percentage	Number of cases	Percentage	Number of cases	Percentage
11-20	—	—	—	—	—	—
21-30	2	1.6	16	2.06	351	35.2
31-40	40	32.8	128	16.5	384	38.5
41-50	41	33.7	264	34.02	196	19.6
51-60	32	26.2	272	35.06	66	6.6
61-70	7	5.7	48	6.18	—	—
71-80	—	—	48	6.18	—	—
Total	122	100	776	100	100	100

like katachu and grind it, use it like gutkha, because people are addicted to tobacco. The real challenge lies in preventing the consequences of tobacco chewing by giving education to the people effectively about good and bad effect of tobacco use, as these habits came through our ancestors, so it is difficult for them to give up. Now, HIV advent is adding fuel to this cancer, because, this infection is endemic in South India. In comparison with the United State population, where oral cavity cancer represents only 3% of malignancy, it accounts 30% of all cancers in India. This variation in incidence and pattern of cancer is due to regional differences in the prevalence of risk factors, these may be modified—giving real hope for primary prevention.

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