Research Article

# Oral Cavity Malignancies : A clinicopathological study

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## Abstract

**Introduction:** Oral cancers are the commonest of head and neck tumours. They share common etiological factors, which are often the personal habits of the patients. Human papillomavirus is increasingly being reported in patients with oral malignancies, especially in Western population. However in India, smoking, alcohol consumption and tobacco chewing are the common etiological factors. **Material and Method**: The present study comprises of 379 patients who attended the out patient department or were admitted in the wards of associated hospital of N.S.C.B. Medical College, Jabalpur during the period from July 2003 to July 2005 with the presenting complaint of Tumour/Mass in Head and Neck region. Out of 379 patients of Tumour/Mass in Head and Neck region, 213 patients were having tumour / mass in the oral cavity. Tissue biopsy for histopathological examination was done in all cases. **Results:** On histopathological examination of oral cavity tumours , benign tumours were common in females while Majority of the patients of malignancy were males, highest incidence of malignanacy was seen in age group (55-75) years. Incidence of oral malignancy was predominantly more in cheek (buccal mucosa) it constitutes 80 cases (42.8 percent) followed by tongue 42 cases (22.5 percent) in alveolus 33 cases (17.6 percent) , in palate 17 cases (9 percent) in lip 11 cases (6 percent) and lowest incidence was seen in floor of mouth 4 cases (2.1 percent), Histologically Squamous cell carcinoma is seen in all cases. **Conclusion:** Oral cancers are among the most common malignancies encountered in clinical practice. Males are more commonly affected than females usually in 5th to 7th decade of life. However, there is a rising incidence noted in female patients as they are hardcore tobacco chewers and less educated than men in the rural setup. Oral cancers are also increasing in younger population due to the habit of consuming alcohol and tobacco.

**Keywords** - Oral cavity, Malignanacy, Tobacco, Squamous cell carcinoma

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## Introduction

In India although infections and malnutrition are the factors contributing to morbidity and mortality, but now a days neoplastic diseases are coming into greater focus because of the preventive measure and better treatment being taken for the infections and nutritional deficiency diseases and probably also due to the better diagnosis of cancers.The term “CANCER” creates a feeling of dread and despair to sufferers of any age group and their families, this entity is more common in adults as compare to children & accounts major cause of deaths in India. Little is known about the etiology of cancers, although there are indication that genetic factors play a major role in certain tumours and Transplacental carcinogenesis may be important in some cases,

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Prenatal X-Ray Exposure has also been implicated, in “ tumours of oral cavity” tobacco chewing, alcohol consumption and smoking are consider as a risk factors [1]. As there is major advancement in diagnosis, multi-modality therapy, development of rational use of combination chemotherapy and improved supportive care, enhances the cure rate of head and neck tumours [2]. Oral cancers are more common in males beyond 5th decade of life. However, there is a rising trend in the younger age group who has been influenced by a smokeless tobacco brand called Gutkha. The male to female ratio is also showing a slow decline, as there is rising incidence in oral cancers in women [3].

In India, cancer of the oral cavity and oropharynx is the commonest cancer in men and third commonest cancer in women [4]. Oral cancers are more common in males

than females. However, there is a rise in the incidence of these malignancies in females. Tobacco chewing has emerged as a stronger risk factor of oral carcinoma than smoking, since there is a direct exposure of tobacco chewing on the mucosa for longer period, while smoking has more contact with pharynx, larynx, and lungs. Women have substantially high level of chewing habits than men in many rural areas, as they believe that tobacco has magical and medicinal properties [4]. The relationship between use of smokeless tobacco products and oral cancers is complicated by heterogeneity in smokeless tobacco containing tobacco specific nitrosamines [5]. In India, smokeless tobacco is often mixed with other carcinogenic substances (betel, areca nut, and lime) and very strong dose response relationships were observed with increased intensity and duration of smokeless tobacco use and risk of premalignant and malignant lesions of the oral cavity [6]. Young age at onset is a cardinal feature of an inherited predisposition to malignancy. Oral cancer at a young age has also been reported in families with functionally inactivated germline mutations in p16 [7]. Fanconi anemia is a well-known genetic syndrome associated with 500-700 fold increased risk of oral cancers. A positive family history of head and neck squamous cell carcinoma also represents an inherited sensitivity to the genotoxic effects of mutagens in tobacco smoke and metabolites of alcohol [5].

## Material and Method

The present study comprises of 379 patients who attended the out patient department or were admitted in the wards of associated hospital of N.S.C.B. Medical College, Jabalpur during the period from July 2003 to July 2005 with the presenting complaint of Tumour/Mass. Fine needle aspiration cytology was done in 51 cases and tissue biopsy for histopathological examination was done in all cases.

All cases included in present series were taken up for study, irrespective of their age and sex. A detail clinical examination was done .The history was elucidated with special reference to the following Tumour – site, size, shape, consistency, increasing or decreasing. Pain and tenderness, Duration of tumour, Fixity to deeper structure, Lymph node involvement, Operation done (previously), Other treatment e.g. – chemotherapy, radiation, Special investigations, Clinical diagnosis was made on the basis of history and clinical findings. Diagnosis made accordingly was compared with histopathological examination of tissue obtained.

## Results

The present study comprises of 379 patients of Head and neck tumours, admitted in the ENT, Surgery and Cancer wards and patient attending OPDs in medical college hospital Jabalpur during the period of July 2003 to July 2005.In department of pathology Total biopsy and excised specimen received were 4230. Out of that total neoplastic lesion were 1608. Out of that 427 were benign tumours and 1181 were malignant tumours.Total head and neck tumour studied were 379.

It constitutes 23.57percent of total tumours studied during July 2003 to 2005. In respect to total cases of malignancies studied during July 2003 to July 2005, incidence of malignant tumour of head and neck constitutes 23.03 percent. Incidence of benign tumours of head and neck was 25 percent in respect to total benign tumours studied in the Department. The Mean age of benign tumours was 31.9 years, malignant tumours was 50.5 years and all tumours of head and neck region was 45.2 years.

**Table No 1 : Table showing sex distribution of benign and malignant tumours of oral cavity.**

| Sex | Benign | Malignant |
|---|---|---|
| Male | 12 (46.2%) | 114 (61 %) |
| Female | 14 (53.8%) | 73 (39%) |
| Total | 26 (12.2%) | 187 (87.8%) |

Table showing sex distribution of benign and malignant tumours of oral cavity, maximum number of cases were recorded in oral cavity 213 cases (56.2 percent), out of 213 cases 187 (87.8 percent) were malignant and only 26 (12.2 percent) were benign.

Maximum number of cases were in oral cavity, it constitute (68.7 percent) of all malignant tumours of head and neck. Benign tumours (53.8 percent) were common in females while malignant tumours were common in males. (61 percent).

**Table No 2: Showing site distribution of oral cavity tumours (Malignant Tumours).**

| Site | 0-14 Years | 15-34 Years | 35-54 Years | 55-75 Years | >75 Years | Total |
|---|---|---|---|---|---|---|
| Tongue | - | 3 | 22 | 16 | 01 | 42 |
| Cheek | - | 6 | 42 | 31 | 01 | 80 |
| Alveolus | - | 15 | 17 | 1 | - | 33 |
| Lip | - | 1 | 4 | 6 | 0 | 11 |
| Palate | - | 3 | 5 | 8 | 1 | 17 |
| Floor of mouth | - | - | 2 | 2 | - | 4 |
| **Total** | | **28** | **12** | **64** | | **187** |

Incidence of oral malignancy was predominantly more in cheek it constitutes 80 cases (42.8 percent) followed by tongue 42 cases (22.5 percent) in alveolus 33 cases (17.6 percent), in palate 17 cases (9 percent) in lip 11 cases (6 percent) and lowest incidence was seen in floor of mouth 4 cases (2.1 percent).

**Histological findings:** Histological finding of Squamous cell carcinoma in all cases. Section showed malignant epithelial cells arranged in sheets. In 121 (64.7 percent) cases keratin was present and in 66 (35.3 percent) cases features of non keratinising Squamous cell carcinoma was present.In present study benign tumours constitutes 12.2 percent of all tumour of oral cavity from which haemangioma constitutes 8 cases (30.7 percent) of all benign tumours of oral cavity, Squamous papilloma 6 cases (23 percent), Relention cyst. 6 cases (23 percent), Epulis 5 cases (19.2 percent) and Fibrolipoma 1 case (3.8 percent).

## Discussion

Incidence of malignant oral tumours reported by different authors, the highest incidence was reported in Madras by Shanta Krishamurthy [8]. The incidence in Jabalpur in our series was (15.8 percent) almost similar to the study of padmavathy [9] a high percentage was recorded from Bombay probably because it was a referral center for all types of cancers, but now the incidence in Bombay has been decreased in the study reported by Kamat et al [10] in cancer registery hospital Bombay, India, It was probably because of decreased referrals from others parts of country, due to availability of the facilities for diagnosis of malignancy in different parts of the country.

Oral malignant tumours in relation to head and neck malignant tumours reported by various authors, Lowest Incidence of malignant tumours in oral cavity was reported by Kurtulmaz et al [11] at Turkey and highest incidence was reported in our series, which goes nearer to kanhere et al [12] thus table shows higher incidence of oral malignancy in India as compared to other country, because of tobacco chewing, alcohol consumption, environmental factors, genetic predisposition like risk factors were prompt in India. Comparison of incidence of malignant tumours in various age group of oral cavity, highest incidence was reported in our series i.e. 66.3 percent in age group 41-69 which was closer to paymaster et al [13] Wahi et al [14]. Kamat et al [10] and Kanhere et al [13], Martin [15] reported a highest incidence in the age above 70 years. Particular high incidence of oral tumours between 41-69 years of age denotes the fact that people in these age groups were exposed to the maximum effect of various etiological factors responsible for oral tumours like tobacco, alcohol, pan, Betel nut, poor oral hygiene dentures etc. cell instability increases as age advances so that a stimulus which in younger age group would pass unnoticed induces a change in older age groups which may result in malignancy.

Average age incidence in our series was 51 years which is in accordance with average age of 52 years, reported by Wahi et al. The M : F. ratio of our series and its comparison with previous study by various authors. Sex ratio of our series was 2.5:1 is in accordance with Wahi et al [16] and Norman et al. Table concludes that males were more prone to occurrence of oral tumours. The highest incidence in our series was 42.8 percent for carcinoma of cheek, followed by carcinoma of tongue 22.5 percent, alveolus 17.6 percent palate 8 percent, lip 6.4 percent and 2.7 percent floor of mouth. These figures were in accordance with those of Wahi P.N. et al who studied oral cancers at Sarojini Naidu Medical College, Agra. The commonest site was cheek followed

by tongue. But in above figures were in contrast to that reported from M.D.A. Hospital and Mashberg et al [17]. The report from MDA hospital records lip cancers as the commonest site followed by alveolar margin and Palate cancers. The study by Mashberg et al recorded an over whelming number of oral carcinomas in three locations - floor of mouth, soft palate anterior pillar – retromolar complex and tongue. They designated these three areas as high risk areas.

The difference in the involvement of different sites of oral cavity may be a pointer to the importance of different personal habits, and environmental factors among the Indian and western population.

## Conclusion

The variations of observations in this study with those of the predecessors are the authenticity and utility of the current study. Variations are results of various influences in terms of time, space, racial, genetic and environmental habits and habitats. The emotion and philosophy behind all such scientific studies is to enlighten better approaches to relieve the ailing and suffering humanity in the form of accurate diagnosis and better treatment, same is true for this study.

Oral and oropharyngeal cancers are among the most common malignancies encountered in clinical practice. Males are more commonly affected than females usually in 5th to 6th decade of life. However, there is a rising incidence noted in female patients as they are hardcore tobacco chewers and less educated than men in the rural setup. Oral cancers are also increasing in younger population due to the habit of consuming alcohol and tobacco. Anatomically, the anterior portion of the oral cavity is commonly involved, possibly due to the longer duration of contact with the carcinogens in tobacco and alcohol. Squamous cell carcinoma is the most common histological type.

Verrucous carcinomas have a good prognosis and should be reported as a distinct entity. Clinicians should be aware that minor salivary gland tumors, non-Hodgkin lymphomas, and melanoma can occur in oral cavity, more commonly on the palate.

This study reflects that there is an urge to raise awareness and educate people regarding detrimental effects of alcohol and tobacco consumption, importance of dental hygiene, oral self-examination and the availability of preventive health care services.

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