D:/Biomedica Vol.27, Jan. – Jun. 2011/Bio-1.Doc P. 29 – 32 (KC) III

A CLINICO-PATHOLOGICAL STUDY OF ORAL CANCERS

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ABSTRACT

Background: In many Asian cultures where chewing betel, paan and areca is common, oral cancer represents up to 40% of all cancers. It may arise as a primary lesion originating in any of the oral tissues, by metastasis from a distant site of origin, or by extension from a neighboring anatomical structure. A tissue biopsy and microscopic examination of the lesion confirms the diagnosis and malignancy of oral cancer.

Objectives: To see the clinical and histopathological pattern of oral cancer.

Material and Methods: This was a retrospective case series studies carried out at Histopathology Department of PNS Shifa Hospital, Karachi. Detailed clinical histories of the patients were recorded and their histopathology was performed using haematoxylin and eosin (H&E) stain. Clinical data collected included the age, sex of patient and intra-oral site of cancer. Histopathological data included type of cancers and their degree of differentiation. The inference was drawn from this record. The data was analysed on SPSS version 17.

Results: A total of 268 oral mucosal biopsy reports were studied which constituted 6.6% of all malignant tumours reported during this period. Among the 268 cases studied, 256 (95.5%) cases were of squamous cell carcinoma (SCC), 4 (1.5%) were of basal cell carcinoma (BCC) and 2 (0.75%) each were of adenoid cystic carcinoma, mucoepidermoid carcinoma, adenocarcinoma and undifferentiated carcinoma. Amongst the SCC group, 116 (43.28%) cases were well differentiated, 128 (47.76%) cases were moderately differentiated and 16 (5.97%) cases were poorly differentiated. Tongue was the commonest site involved in 116(44%) cases followed by buccal mucosa 88 (33.3%) cases.

Conclusion: Squamous cell carcinoma is the predominant type of oral cancer and tongue is the commonest site of origin for these cancers. In our patients oral cancer presented at a relatively early age group.

Key words: Oral cancer, mucosal biopsy, Histopathology.

INTRODUCTION

Oral cancer may occur as a primary lesion originating in any of the oral tissues, by metastasis from a distant site of origin or by extension from a neighboring anatomical structure such as the nasal cavity or the maxillary sinus. Most oral cancers begin in the tongue and buccal mucosa.[1] In the developing world oral cancer is the third most common cancer after stomach and cervical cancer. An estimated 378,500 new cases of intra-oral cancer are diagnosed annually worldwide.[2] In many Asian countries chewing betel, paan and areca is known to be a strong risk factor for developing oral cancer.[3-4] In India where such practices are common, oral cancer represents up to 40% of all cancers, compared to just 4% in UK. In the developed world it is regarded as one of the ten most common cancers in the world.[5] Oral cancers include cancers of lips, tongue, gums, floor of mouth, cheek mucosa, palate and other parts of mouth as per international classification of diseases.[6] The prevalence of lip cancer appears to be decreasing, but the prevalence of intra-oral cancer appears to be rising in many countries, especially in younger people.[7] Incisional biopsy, when appropriately stained, is essential to confirm the diagnosis. A biopsy must be performed on any oral mucosal lesion suggestive of carcinoma, including any ulcer that does not heal within 2 – 3 weeks.[8] Studies on oral cancers are required more in such parts of the world, where these cancers are most common. Aims and objectives of the current study are to see the age wise prevalence and to assess the clinical and histopatholgical patterns of oral cancers in a tertiary care referral hospital of Pakistan.

MATERIALS AND METHODS

This was a retrospective case series study performed at histopathology department of PNS Shifa Hospital

Karachi from Jan 2004 to Dec 2007. The clinical and histopathological data was taken from the record maintained at PNS Shifa Hospital's Department of Histopathology. Detailed clinical history of the patients were recorded and histopathology was performed using haematoxylin and eosin (H&E) stain. All biopsies of oral cancers of both sexes and all ages were included. Only definitely diagnosed cases of oral cancers were included in the study. Opinions suggesting re-biopsy and those requiring second review were excluded from the study. Clinical data collected included the age, sex of patients and intra-oral site of cancer. Histopathological data included type of cancer and its degree of differentiation. The inference was drawn from this record. The biopsy specimens were received in 10% formol saline. After gross examination (as per record) the tissues were processed for paraffin embedding under standardized conditions. The sections were stained with haemotoxylin and eosin stain (H&E stain).

Data analysis was performed through SPSS version 17. Frequencies and percentages were computed to present all categorical variables such as presenting symptoms and site of lesions. Age was presented by mean ± standard deviation (SD).

Table 1: *Frequency of oral cancers according to site.*

Site	*Males*	*Females*	*Total*	*Percentage (%)*	*M : F Ratio*
Tongue	64	52	116	44	1.23 : 1
Buccal Mucosa	56	32	88	33.3	1.75 : 1
Lips	12	4	16	6.06	3 : 1
Gums	8	4	12	4.47	2 : 1
Flour of mouth	5	5	10	3.73	1 : 1
Alveolus	2	2	4	1.52	1 : 1
Palate	3	1	4	1.52	3 : 1
Oral cavity *NOS	11	7	18	6.81	1.57 : 1

*NOS: Not otherwise specified

RESULTS

A total of 268 oral mucosal biopsy reports were registered in the study that constituted 6.6% of all malignant tumours reported during this period. Males were 162 and females were 106, with male to female ratio of 1.52 : 1. The ages ranged from 18-25 years with a mean age of 53 (SD ± 15.16) yrs. Males showed slightly lesser age at presentation i.e 51.11 (SD ± 13.48) years as compared to females having 55.16 (SD ± 13.48). One hundred and sixty seven (62.31%) patients were above 50 years of age and 101 (37.68%) patients were below 50 years of age. The distribution according to age is shown in figure 1. Out of 268 cases studied 256 (95.5%) cases were of SCC. BCC was seen in 4 (1.5%) cases while 2 (.75%) cases each of adenoid cystic carcinoma, mucoepidermoid carcinoma, adenocarcinoma and undifferentiated carcinoma were found. No malignant melanoma or metastatic tumour was seen. Amongst the SCC groups, 116 (43.28%) cases were well differentiated, 128 (47.76%) were moderately differentiated and 16 (5.97%) cases were poorly differentiated. Table 1 shows distribution of tumors according to site of involvement. Tongue was the commonest site involved in 116 (44%) cases, with a male to female ratio of 1.23 : 1, followed by buccal mucosa including 88 (33.3%) cases.

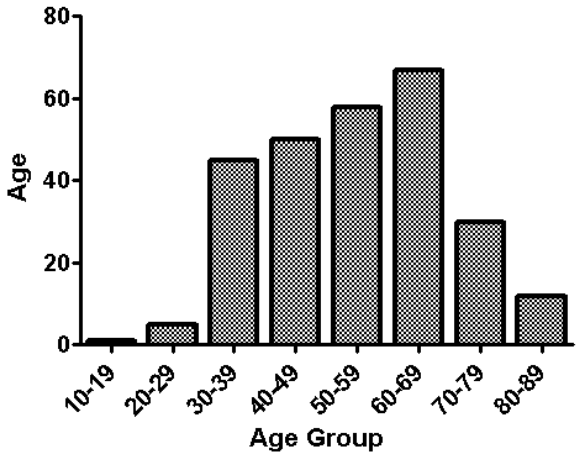

Fig. 1: *It shows distribution of oral cancer in various age groups (n = 268).*

DISCUSSION

Oral cancer often starts as a tiny, unnoticed white or red spot or sore anywhere in the mouth. It can affect any area of the oral cavity including the lips, gums buccal mucosa, tongue and the hard or soft palate.[9] When a dentist, physician or other medical professionals may suspect a particular lesion as malignant, the only definitive method for determining this is through biopsy and microscopic evaluation of the cells in the removed sample.[10] In the present study the frequency of oral cancers in males and females was in a ratio of 1.52 : 1, showing male predominance. This is consistent with certain European stu-

dies[11] which show male predominance. Majority of local studies from Pakistan also showed male predominance.[12-13] The exception to this is a study from Lahore[14] which showed female predominance with the ratio of 1.5 : 1. In high – risk countries such as Sri Lanka, India, Pakistan and Bangladesh, oral cancer is the most common cancer in men and may account for up to 30% of all new cases of cancer compared to 3% in the UK and 6% in France.[15] The risk of developing oral cancer increases with age.[16] In this study 62% cases were above 50 years of age where as in UK the majority of cases (86%) occur in people aged 50 or above.[17] This indicates presentation of oral cancer in our country at a relatively earlier age which may be due to frequent use of pan and areca nut in younger people. SCC with varying differentiation was the commonest oral cancer (95.5%) in our study which is similar to other such studies.[18-19] Most cases of SCC (48%) were moderately differentiated, 45% cases were well differentiated whereas only 7% were poorly differentiated. The commonest site of origin of oral cancers in this study was tongue (44%). This is similar to certain other international and local studies.[20-21] It was followed by buccal mucosa (33%). Cancer of the lip has a different geographical distribution from other oral cancers and the highest incidence rates are reported in white populations in Canada and Australia. Cancer of the lip is rare in non white populations.[22] Lip cancer is particularly linked to outdoor occupations such as farming and fishing and there are twice as many male as female cases. It is thought that the use of cosmetics helps to protect the female lip from damaging UV light.[23] In our study lip cancer was seen in 6% of cases only. Four (1.5%) of them were of BCC and all the cases were males. This frequency is lower than seen in another local study carried out at Northern Pakistan where frequency has been 16.18%.[24] Other tumors were of minor salivary gland origin including adenoid cystic carcinoma from the palate, mucoepidermoid carcinoma and adenocarcinoma from floor of mouth and buccal mucosa.

It is *concluded* that Squamous cell carcinoma is the predominant type of oral cancers and tongue is the commonest site of origin for these cancers. In our patients oral cancer presented at a relatively early age.

ACKNOWLEDGEMENTS

We are grateful to the administration of AFIP and the PNS Shifa, Karachi.

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