East African Medical Journal Vol. 81 No. 6 June 2004
ORAL CANCER AT KENYATTA NATIONAL HOSPITAL, NAIROBI
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ABSTRACT

Background: **The epidemiology of oral cancer in the African population is still uncertain. Earlier reports suggested a relatively low incidence of oral cancer among Africans. However, there have been recent reports of an upward trend in the incidence of oral cancers in developing countries as a consequence of changes in life style and the emergence of new diseases. It is, therefore, reasonable to expect changes in the pattern of oral cancer in Kenya in view of these changes.**
Objective: **To determine changes in the pattern of oral cancer in the past 20 years.**
Design: **Retrospective descriptive study.**
Setting: **Kenyatta National Hospital, Nairobi.**
Method: **Pathology records of cases of oral cancer diagnosed at Kenyatta National Hospital from 1978 to 1997 were analysed for relative frequency, age, sex and site distribution.**
Results: **Of a total 22,788 malignancies 821 cases (3.6%) were oral cancer. Yearly relative frequency of oral cancer ranged between 1.5% of the total malignancies. There was a small male predominance (M:F = 1.3:1). The most preferred site for oral cancer was the tongue but with a significant number involving the maxilla and mandible. Comparison with a previous study did not demonstrate a dramatic change in the pattern of oral cancer in Kenya. An overall gradual decline of cancers diagnosed at Kenyatta National Hospital was noted. This decline could not be accounted for in this study.**
Conclusion: **This study does not show any increase in the frequency or change in the pattern of oral cancer in this population despite changes in life style and the emergence of AIDS disease in the country.**

INTRODUCTION

Oral cancer is among the ten most common cancers worldwide. However, its occurrence shows a wide geographic variation(1). Oral cancer accounts for 2-5% of all malignancies in the west, but its incidence in the Indian subcontinent may be as high as 50% of all malignancies. Furthermore there is an indication that the incidence of oral cancer is rising in the developing countries in direct proportion to the rise in tobacco and alcohol use(2,3). The incidence of oral cancer in Kenya was estimated at 2-3% of all malignancies in the seventies(4). Since then there has not been a follow up study on the pattern and trend of the disease. Since the seventies a lot of changes have occurred in the country. Access to health care has improved and there have been changes in life style associated with socio-economic development and education. Much more significantly, the AIDS pandemic has emerged as a major health challenge in the country. AIDS is commonly associated with a number of malignancies, including oral cancer.

It was our view that these factors might have some effect on the pattern of diseases in the country including oral cancer, and deemed it appropriate to study the pattern of oral cancer and determine to what extent it might have changed in the intervening twenty years; 1978 to 1997.

MATERIALS AND METHODS

This study was based on a retrospective analysis of histological reports in the histopathology department at Kenyatta National Hospital. This is the largest referral hospital to which most of the oral cancer patients are treated in Kenya. The figures seen here may, therefore, give some indication of the pattern of the disease countrywide. All histopathologically confirmed cases of oral cancer were analysed for relative frequency, age, sex, and site distribution.

RESULTS

Of the 22,788 cases of malignancies, 821 cases (3.6%) were those of oral cancer. On a yearly basis, the relative frequency ranged between 1.5-7% of all malignancies. While there was a general decline in the number of malignancies diagnosed over the period of study, the proportion of oral cancer did not vary much (Table 1). As shown in Table 2 oral cancer is a disease of the elderly. Most of the cancer occurred in the age groups above 40 years. However, there was a very wide age range with occurrences reported as early as the first decade. The tongue was the most frequent site for oral cancer in both males and females (Table 3). This was followed by the mandible and the maxilla. The floor of the mouth was the fourth most common site followed by the lower lip.

Table 1

Relatives frequency of oral cancer over a twenty-year period

Year	No. of all cancers	No. of oral SSC	OSSC as % of all cancers
1978	1659	75	4.52
1979	1925	48	2.49
1980	1645	43	2.61
1981	1550	39	2.51
1982	1790	53	2.96
1983	1704	49	2.88
1984	1757	73	4.15
1985	1246	52	4.17
1986	939	48	5.11
1987	808	59	7.30
1988	734	43	5.99
1989	656	28	3.04
1990	867	39	4.50
1991	907	40	4.41
1992	734	23	3.13
1993	980	33	3.37
1994	598	19	3.18
1995	790	27	3.42
1996	829	12	1.45
1997	670	18	2.69
Total	22,788	821	3.60

Table 2

Distribution of oral cancer according to age groups

Age (years)	No.	(%)
0 - 9	6	0.73
10 - 19	21	2.56
20 - 29	34	4.14
30 - 39	69	8.40
40 - 49	150	18.27
50 - 59	177	21.56
60 - 69	276	33.62
70 - 79	69	8.40
80 - 89	17	2.07
90+	2	0.24
Total	821	100

Table 3

Distribution of oral cancer according to site and gender

Site	Male	Female	Total
Lower lip	35	40	75
Upper lip	4	7	11
Tongue	140	80	220
Mandible	77	64	141
Tonsil	4	2	6
Maxilla	59	42	101
Cheek	44	42	86
Floor of the mouth	35	28	63
Soft palate	16	4	20
Oropharynx	65	33	98
Total	479	342	821

Table 4

Site distribution of oral cancer according to age groups

Site	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90+	Total
Lower lip	2	2	7	2	12	16	26	7	0	1	75
Upper lip	0	1	0	1	4	1	3	1	0	0	11
Tongue	0	2	9	9	55	45	71	24	5	0	220
Mandible	2	3	7	16	24	36	47	4	1	1	141
Tonsil	0	0	0	2	0	1	2	1	0	0	6
Maxilla	1	7	5	16	10	14	32	12	4	0	101
Cheek	0	4	3	6	12	22	32	5	2	0	86
Floor of the mouth	0	0	0	4	14	17	18	9	1	0	63
Soft palate	0	0	2	0	3	7	8	0	0	0	20
Oropharynx	1	2	2	12	16	17	38	6	4	0	987
Total	6	21	34	69	150	177	276	69	17	2	821

At all sites except the lips males were more commonly affected than females. The overall male to female distribution shows a small male preponderance (M:F= 1.3:1). Analysis of sites by age shows that oral cancer shows preference for the lower lip, tongue, mandible and maxilla throughout the ages (Table 4). However, in the age groups below 40 years the mandible and maxilla appear to be the preferred sites for oral cancer. The tongue dominates in the later years.

DISCUSSION

The epidemiology of oral cancer in the African population is still uncertain. Earlier reports had suggested a relatively low incidence of oral cancer among Africans(4-6). However, there have been reports of an upward trend in the incidence of oral cancer in developing countries as a consequence of changes in life style(2,3).

It is over 20 years since the last review of oral cancer in Kenya(4). During that period a lot of changes have taken place. Life styles have changed as a consequence of economic development and education. More people have access to hospitals and improved health care and there is an increase in the general awareness on health matters. In addition there has been a rise in the negative risk behaviour such as smoking and alcohol consumption. During this same period a new kind of health challenge in the form of the AIDS pandemic has emerged. Kenya has been particularly hard hit by the AIDS scourge and ranks among the countries with the highest AIDS prevalence in the world. In view of these socio-economic and health dynamics it is reasonable to expect changes in the pattern of oral cancer. The results of this study, however, do not show significant changes in the pattern of oral cancer from that reported previously. The relative frequency of oral cancer remains about 2-3% with minimal annual variation. The age distribution shows a wide range but most cancers appear after the age of 40 years with the peak incidence in the 50-60 year age bracket. It has been argued that with the advent of AIDS the age of oral cancer would fall. This has not been demonstrated in this study. Perhaps the number of oral cancer cases associated with HIV/AIDS has not been high enough to influence the overall pattern of oral cancer in this population. The sex distribution shows only a slight male preponderance. The male to female ratio remain about 1.3:1 as was seen in the previous report. This study, as the previous one, is not able to answer why this population shows no marked difference in the sex distribution in a disease that has been regarded as a predominantly male disease in many parts of the world.

The predominant oral site for oral squamous cell carcinoma remains the tongue. This is followed by the maxilla, mandible, and lower lip. The floor of the mouth, curiously, is not a dominant site for oral cancer in this population. In contrast the maxilla, which is rarely affected in the western population, was a more common site for oral cancer, in this population. It is, however, possible that antral tumours may have been included thus increasing the number of reported cases of maxillary tumours. The female predominance with lip cancers is curious but considering the small number involved may not be significant. It is interesting to note, however, that in the age groups below 40 years the mandible and maxilla were the most preferred sites for oral cancer while the tongue dominated in the later years.

Overall, these findings were consistent with a previous study(4) and confirmed the difference in the pattern of oral cancer between this population and the western population. In the west the tongue, floor of the mouth, and lips were the predominant sites of oral squamous cell carcinoma. The maxilla and mandible are rarely affected. No analysis of ethnic distribution was attempted because no reliable information was available. This relatively low level of oral cancer in this population corroborates similar findings in Zimbabwe(7) and Rwanda(8).

ACKNOWLEDGEMENTS

To the Director of Kenyatta National Hospital for permission to publish this work. In addition, the assistance of the Department of Oral and maxillo-facial surgery, Faculty of Dental Sciences, University of Nairobi, is highly appreciated. This work was approved by the ethical and research committee of the Kenyatta National Hospital.

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