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#### KAPOSIS SARCOMA IN A NAIROBI HOSPITAL

J.F. Onyango, BDS, MSc, FDSRCS, Senior Lecturer, Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, University of Nairobi  
P.O. Box 19676, Nairobi, Kenya and A. Njiru, BDS, M. Dent. Sci., Consultant Oral Pathologist, Department of Pathology, Kenyatta National Hospital,  
P.O. Box 20723, Nairobi, Kenya

Request for reprints to: Dr. J.F. Onyango, Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, University of Nairobi, P.O. Box 19676, Nairobi, Kenya

### KAPOSIS SARCOMA IN A NAIROBI HOSPITAL

J.F. ONYANGO and A. NJIRU

#### ABSTRACT

**Background:** Kaposi's sarcoma (KS) is associated epidemiologically with HIV infection and a number of countries have reported a dramatic increase in the incidence of KS with the advent of AIDS. Although AIDS is prevalent in Kenya, no studies on the impact of AIDS on the pattern of KS has been carried out.

**Objective:** To determine any changes in the pattern of KS that might have occurred since the advent of AIDS in the country.

**Design:** Retrospective descriptive study.

**Setting:** Kenyatta National Hospital (KNH).

**Method:** Pathology records of cases of KS diagnosed at KNH from 1968 to 1997 were analysed with respect to relative frequency, age, sex and site distribution; and trend. The period was divided into the pre and post AIDS era from 1983, which is the time the first AIDS patient was reported in the country.

**Result:** A total of 1108 cases of KS consisting of 911 males and 197 females were recorded. The relative frequency of KS ranged between 2% to 5% of the total malignancies. There was a gradual decline in the male to female ratio from about 10:1 in the sixties to about 2:1 in 1997. There was no dramatic difference in the age distribution in the pre- and post AIDS era, although a large number of cases were recorded as adults without age specification in the post AIDS era. Site distribution was characteristic of the disease with most of the cases having the lesions occurring in the lower limbs and involving the skin.

**Conclusion:** Although these findings do not demonstrate a dramatic alteration in the pattern of KS in the post AIDS era there were indications that such changes may have been obscured by under-reporting. The fall in the male:female ratio is a strong indication of a rise in KS among female patients. A further study is necessary to elucidate the true impact of AIDS on the pattern of KS in the country.

#### INTRODUCTION

Kaposi's sarcoma (KS) is the most common AIDS-associated malignancy(1,2) and a number of countries have reported a dramatic increase in the incidence of KS as a consequence of the increased incidence of AIDS. While AIDS has led to a dramatic increase in the rate of KS, the pattern of the disease shows variation with location and time(3,4). For example the pattern of AIDS-associated KS (AIDS-KS) in the west differs significantly from that in sub-Saharan Africa in terms of the relative risk, sex and age distribution as well as trend (5-14). Even within the same country the incidence of AIDS-KS is not uniform(3).

In spite of the high prevalence of AIDS in Kenya the pattern of KS in the country has not been studied so far. While it might be assumed to conform to that

seen in other sub-Saharan countries, it is still necessary to get accurate information on the disease within the country if meaningful strategies for treatment and prevention are to be made. This study therefore aimed at assessing the impact of the AIDS pandemic on the incidence of KS in Kenya by comparing the rates and pattern of KS before and after the advent of AIDS.

#### MATERIALS AND METHODS

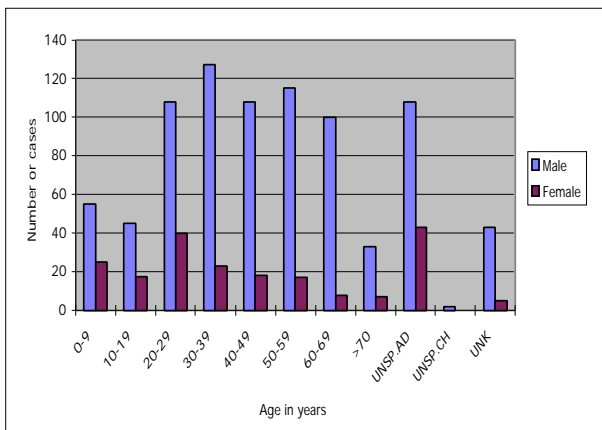
The materials for this study were derived from pathology records in the Histopathology Department at KNH. All records of histologically confirmed cases of KS from 1968 to 1997 were analysed for age, sex, and site distribution. The relative frequency of the tumours was calculated relative to all malignancies diagnosed in the same period.

**RESULTS**

*Relative frequency, gender and age distribution:* The relative frequency is shown in Table 1. The yearly relative frequency of KS ranged between 2% and 5% of all malignancies recorded. This Table also shows a general decline in all malignancies recorded over the study period. The proportion of KS has however, remained relatively unchanged. The age of patients presenting with KS ranged from the 1st to the 8th decades (Figure 1). By far KS was predominantly a disease of the male in all age categories. A large number of adult cases, however, did not have their ages specified. Site distribution for KS is shown in Table 2. Most of the cases of KS involved the lower limbs followed by the upper limbs. The head and neck region was less commonly involved.

**Figure 1**

*Age and sex distribution*



**Figure 2**

*Age distribution of KS before and after the AIDS era*

**Table 1**

*Relative frequency of KS*

Year	Total Malignancies	KS	%
1968	1434	37	2.58
1969	1469	43	2.93
1970	1505	37	2.46
1971	1559	47	3.01
1972	1514	37	2.44
1973	1700	45	2.65
1974	1691	45	2.66
1975	1761	35	1.99
1976	1745	47	2.69
1977	1730	34	1.97
1978	1659	39	2.35
1979	1925	42	2.18
1980	1645	31	1.88
1981	1550	26	1.68
1982	1790	45	2.51
1983	1704	37	2.17
1984	1757	42	2.39
1985	1246	30	2.40
1986	939	22	2.34
1987	808	28	3.47
1988	734	25	3.41
1989	656	35	5.34
1990	867	44	5.07
1991	907	48	5.29
1992	734	35	4.77
1993	980	49	5
1994	598	29	4.85
1995	790	28	3.54
1996	829	37	4.46
1997	670	26	3.88
<b>Total</b>	<b>38896</b>	<b>1105</b>	<b>2.84</b>

**Table 2**

*Distribution of KS lesions according to site*

Site	No.	%
Lower limb	543	45
Upper limb	117	10
Torso	28	2
Groin	7	1
Genito-inguinal	22	2
Head and Neck	85	7
Intra oral	49	4
Visceral	9	1
Unspecified skin	243	20
Unspecified lymph node	76	6
Unknown	17	1
<b>Total</b>	<b>1196</b>	<b>100</b>

**Table 3***Distribution of KS lesions according to gender*

Year	Total	Male	Female	Unknown	M: F Ratio
1968	37	35	2	–	18:1
1969	44	41	3	–	14:1
1970	37	34	3	–	11:1
1971	47	36	11	–	3:1
1972	37	31	6	–	5:1
1973	45	36	9	–	4:1
1974	45	41	5	–	8:1
1975	36	32	4	–	8:1
1976	47	44	3	–	15:1
1977	34	29	5	–	6:1
1978	39	33	6	–	6:1
1979	44	37	7	–	5:1
1980	31	29	2	–	15:1
1981	26	20	6	–	3:1
1982	45	36	9	–	4:1
1983	37	33	4	–	8:1
1984	42	33	9	–	4:1
1985	30	26	4	–	7:1
1986	22	17	5	–	3:1
1987	28	22	6	–	4:1
1988	25	16	8	1	2:1
1989	35	29	6	–	5:1
1990	44	37	7	–	5:1
1991	48	39	9	–	4:1
1992	35	27	8	–	3:1
1993	49	37	12	–	3:1
1994	29	19	10	–	2:1
1995	28	17	11	–	2:1
1996	36	28	8	–	4:1
1997	26	17	9	–	2:1
Total	1108	911	197	1	5:1

*Comparison between the pre and post AIDS era:*

It can be seen from Table 1 that the relative frequency of KS before and after 1983 does not vary significantly although there is a gradual decline in the number of malignancies recorded. From Table 3 it is seen that the male to female ratio falls dramatically to stand at about 2:1 by 1977. The distribution before and after the AIDS pandemic shows no dramatic differences in the age distribution between the two periods (Figure 2).

**DISCUSSION**

With the advent of the AIDS pandemic there has been a dramatic increase in the incidence of KS in a number of countries(3). However, the pattern of occurrence and trend of the disease has differed from one country to another. In the west, the AIDS associated KS has been seen most commonly among homosexual or bisexual men. It is rarely seen among patients who have acquired HIV infection through heterosexual contact, intravenous drug use or vertical transmission. This pattern contrasts sharply with that seen in Africa. Here, both males and females; and paediatric patients

are equally affected. Indeed with the advent of AIDS the incidence of KS among females and children has more than doubled in some African series(5,12,16).

The presentation of the AIDS associated KS in the Kenyan population has not been studied so far although it may be assumed to conform to that seen in other African countries with which it shares geographic location and similar AIDS statistics. In Kenya the HIV/AIDS disease was first reported in 1983 among prostitutes(15) and has since spread to involve all strata of the society. By 1997 the overall national AIDS prevalence was estimated at 15% and was considered as one of the highest in the world(17). It would, therefore, be expected that the incidence of KS would be correspondingly high.

This study, however, does not support such expectations. Over the thirty-year study period the relative frequency of KS has not changed significantly, ranging between 2% to 5% of the total malignancies recorded. For a region where endemic KS has been reported to constitute between 3% to 9% of total malignancies(18,19) these figures do not reflect any impact of AIDS on the incidence of KS in this hospital population. This finding differs markedly from those reported from Uganda(6,12), Zimbabwe(14,20), Zambia(11,13), Rwanda(9,10) and South Africa(5,21) where there has been a dramatic increase in the incidence of KS with the advent of AIDS. Similarly there is no evidence of a dramatic rise in the incidence of KS among children in the post AIDS era in comparison with the pre AIDS era. The only significant change in this study is the gradual drop in the male to female ratio, which had previously stood at approximately 10:1 in the sixties but had dropped to 2:1 by 1997.

A number of hypotheses could be advanced to explain this rather unexpected presentation of KS in our study. However, our favoured view is that this study, which is hospital based, rather than a population-based survey, might have failed to give a true picture of KS in the country due to under-reporting. One can see the gradual decline of reported malignancies from a figure of 1434 in 1968 to less than one half; thirty years later in 1997. Clearly this cannot be taken as an indication of a decline of cancers in Kenya. If anything this figure should go up in keeping with population growth and improvement in health services. Furthermore the gradual fall in the male to female ratio is a fairly reliable indication of the rise of incidence of KS among female patients.

Under-reporting may occur for a number of reasons. First there may be a decline of biopsies being taken in the hospital. This is particularly true for KS, which is easily diagnosed on clinical grounds. Also when faced with the possibility of self injury and contraction of the AIDS disease a number of clinicians may be reluctant to carry out biopsies in AIDS patients. Secondly there may be a referral bias where patients

who are severely sick may not be referred for treatment from peripheral health facilities to a tertiary facility like KNH. Thirdly, due to the cost sharing programme introduced in government facilities recently many patients may fail to access healthcare due to financial problems. Fourthly, with the recent development of several alternative private health care facilities a number of cases may seek attention at these facilities and therefore be lost to a study such as this. Lastly, multiple pathology and rapid mortality associated with HIV infection may hide some cases of the AIDS-associated KS. Therefore, although this study does not show a dramatic rise in the incidence of KS in this selected population there is a strong indication of a dramatic rise of KS among female patients, which may have been obscured by under-reporting. However, while we strongly suspect that under-reporting is the reason for the unusual pattern of KS in view of the high rate of HIV infection in the country other reasons may well exist and warrant further study. A population-based study would be necessary to define the pattern of the disease in the population.

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