Nasopharyngeal cancer at the University College Hospital Ibadan Cancer Registry: an update.

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Summary

Background: **Only two reports on nasopharyngeal cancer (NPC) are available from this large centre and both covered the years 1961 – 1966 and 1966 – 1980.**

Objective: **This study describes the update of nasopharyngeal cancer at the Ibadan Cancer Registry from 1981 to 2000.**

***Method*: This is a retrospective review of all histologically confirmed cases of nasopharyngeal cancer accumulated in the Ibadan Cancer Registry from 1981 – 2000.**

***Results*: Two hundred and twenty three cases were analysed consisting of 156 (70%) males and 67 (30%) females with a male: female of 2.3:1. There is a steady increase in the incidence of nasopharyngeal cancer over the last two decades. Overall, the mean age was 41.1years (age range 10 to 81 years). The females had a mean age of 36.1years (age range 11to 80 years) and males 43.2 years (age range 10 to 81 years). The peak age group of incidence for the females was 20-29 and 50-59 for the males with an almost equal incidence in the preceding three (3) decades. The ratio of Regaud to Schmincke type cancer reversed with increasing age amongst the females with the Schmincke type more common in the first decade but this was not reproduced in the males.**

Conclusion: **There is a steady increase in the incidence of nasopharyngeal cancer over the last two decades. The two main histological types showed differential variation between the sexes suggesting a possible biological effect in the manifestation of this disease.**

Keywords: ***Nasopharynx, Nasopharyngeal Cancer, Human papilloma virus, Epstein-Barr Virus, Ibadan Nigeria.***

Résumé

***Introduction*:** Il y a deux rapports seulement sur le cancer du nasopharyngite (NPC) disponibles dans ce grand centre et les deux sont entre 1961 - 1966 et 1966 - 1980.

Objectif: Cette étude tache de decrire la mise à jour du cancer du nasopharyngite au bureau de l'état civil du cancer d'Ibadan de 1981 à l'an 2000.

Méthodes: Il s'agit d'un bilan rétrospectif de tous les cas du cancer du nasopharygite histologiquement confirmés et accumulé au bureau de était civil du cancer d'Ibadan entre 1981 - 2000.

Résultats: Deux cents et vingt trios cas ont été analyses consiste en 156 soit 70% du sexe masculin et 67 soit 30% du sexe féminin avec une proportion masculine feminine de 2,3:1. Il y a une augmentation réguliére en matiére de l'incidence du cancer du nasopharyngite au cours des deux dernières déceninies. Dans l'ensemble, l'âge moyen décennies était 41,1 ans (groupe d'âge de 18 à 81 ans) sexe feminin avaient l'âge moyen de 36, 1 ans (tranche d'âge de 11 à 80 ans et sexe masculin 43,2 ans tranche d'âge 10 à 81 ans). La tranche d'âge (maximum de l'incidence pour des femmes était 20 -29 et 50 - 59 pour le sexe masculin avec une incidence Presque égale dans les (3) décennies précédentes.

La proportion Regaud: Schmincke type du cancer inverse avec une augmentation d'âge chez le sexe feminin avec le type schmincke plus fréquent dans la première décennie mais ce phénomène n'était pas présent chez le sexe masculin.

Conclusion: Il y a une augmentation régulière dans l'incidence du cancer nasopharyngite au cours des deux dernière décennies. Les deux types histologique majeurs ont indiqué variation differentielle entre les sexes évoquant un effet biologique possible dans la manifestation de cette maladie.

Introduction.

Elmes and Baldwin were the first to report on Nasopharyngeal carcinoma in Nigeria[1]. However, it was considered to be rare in Nigeria until Martinson's[2] report of 56 patients in 1968; this was later re-inforced by Okeowo and Ajayi's[3] 48 cases from Lagos. Various reports from other parts of the country have shown that the disease is not an uncommon condition[4-6].

Nasopharyngeal carcinoma may occur at any age, occurring in endemic proportions in the Chinese population, where it constitutes about 18% of all cancers compared to an incidence of 0.25% in North America[7]. The rate of nasopharyngeal carcinoma rises as Chinese genes are introduced into the area, hence Chinese Americans have a higher incidence than other members of their American community[7]. These findings tend to support both genetic and environmental factors as aetiologies. Other possible etiological factors include the role of Epstein–Bar Virus, Nitrosamines, polycyclic hydrocarbons, chronic nasal infection, and poor ventilation of the nasopharynx[7].

The Ibadan cancer registry records show that Nasopharyngeal cancer constitutes 1, 3.5, and 2 percent of all female, male, and total cancers respectively. However

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Table 1 Comparison of histologic type of NPC in the three studies

Histologic type	Martinson (1961-1966) 56 cases	Martinson & Aghadiuno (1966-1980) 170 cases	Present study (1981-2000) 223 cases
Regaud type : well diff. Sq. cell ca. Schmincke: poorly diff. Sq. cell ca: undifferentiated sq. cell ca. transitional cell ca and lymphoepithelioma.	33 (58.9%)	116 (68.2%)	125 (56.1%)
Adenocarcinoma	1(1.8%)	——	3(1.3%)
Unclassified	3 (5.4%)	30 (17.6%)	-
Small cell ca	-	-	1(0.4%)
Mucoepidermoid ca	-	-	2(0.9%)
Adenoid cystic ca.	-	-	1(0.4%)
Lymphosarcoma	4 (7.1%)	12 (7.1%)	-
Reticulum cell sarcoma	5 (8.9%)	-	-
Embryonal rhabdosarcoma	-	-	1(0.4%)
Pleomorphic rhabdosarcoma	-	-	1(0.4%)
Angiosarcoma	-	-	1 (0.4%)
Malignant mixed mesench. tumour	-	-	1(0.1%)
Plasmacytoma	2(3.6%)	4(2.4%)	-
Malignant fibrous histiocytoma	-	-	1(0.4%)
Biopsies not taken	6(10.7%)	-	-

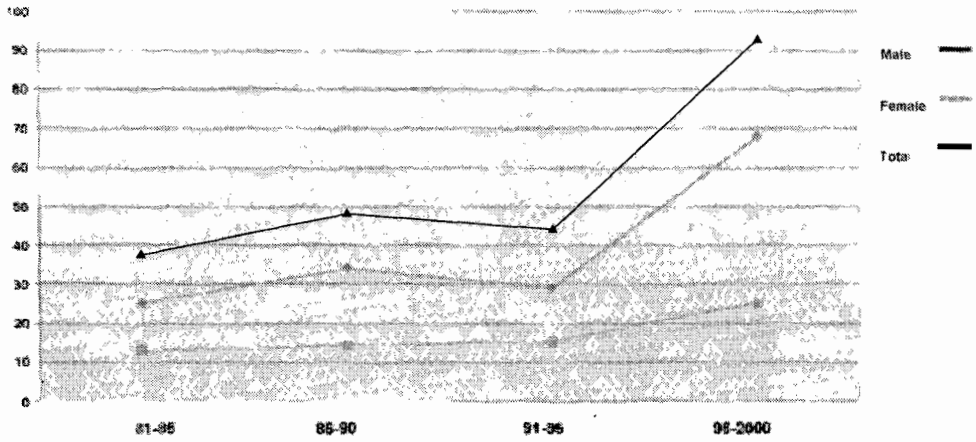

Fig. 1 *Five yearly distribution by sex of patients with Nasopharyngeal cancer.*

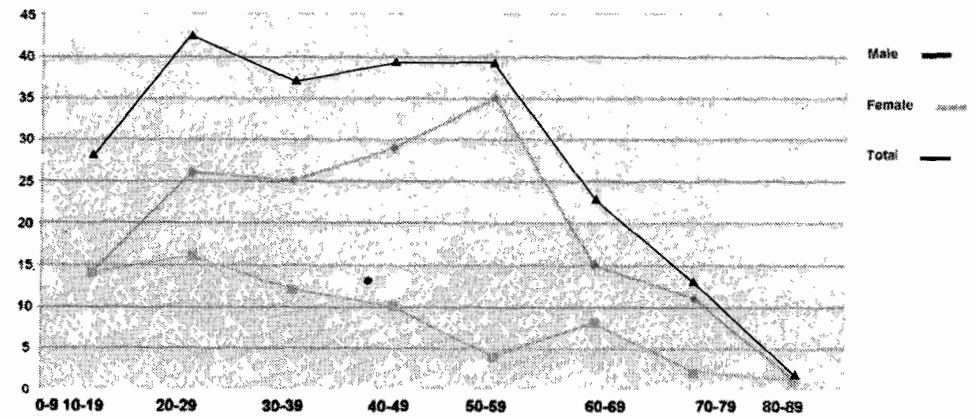

Fig.2 *Comparison of age distribution by sex in Nasopharyngeal cancer patients.*

only two main reports on Nasopharyngeal cancer are available from this large centre covering the years 1961-1966[2] and 1966-1980[8].
This present review was aimed at describing the present position with Nasopharyngeal cancer at the Ibadan cancer registry from 1981 – 2000.

Materials and methods

A search of the case records of the cancer registry in the Department of Pathology of the College of Medicine, University College Hospital, Ibadan, Nigeria for nasopharyngeal cancer was made. Two hundred and twenty three histology specimens of Nasopharyngeal cancer were retrieved from a total of 373 nasopharyngeal cancer surgical biopsies recorded during the period January 1981 to December 2000. All the histological specimens were obtained during examination under general anaesthesia of the nasopharynx and sent to the pathology department for histopathological diagnosis. JOO, a pathologist reviewed and histologically verified the diagnosis made. Other relevant data available to the cancer registry extracted included the age and sex of the patients.

SPSS version 11 statistical software package was used for data analysis. The frequencies of the variables were generated and the means computed. The result is presented in tables, figures and simple descriptive form.

Results

The 223 histologically confirmed cases of nasopharyngeal cancer analysed were made up of 156 males (70%) and 67 females (30%) with a male to female ratio of 2.3:1. There seemed to be an increase in the incidence of nasopharyngeal cancer seen in this period under review. This increase appears to be due to increased incidence among male patients (see Fig. 1 & Table 1). The overall mean age was 41.1 years with an age range of 10 to 81 years. The females had a mean age of 36.1years (age range 11-80years) while the mean age for the males was 43.2 years (age range 10-81years). The peak age of incidence for the females was in the 20 – 29yr. age group. Among the males, this was in the 50 – 59 age group with an almost equal number of cases occurring in each of the preceding three decades (Fig. 2). The ratio of Regaud to Schmincke type cancer reversed with increasing age amongst the females with the Schmincke type being more common in the early ages and an equal incidence of histological types in the 5th decade. With respect to the males both types increased to a peak in the 6th decade but never really reversed in ratio (See Table 2).

Regaud and Schmincke histological types constituted 38.6% and 56.1% respectively of the Nasopharyngeal cancers. All cases of adenocarcinoma, mucoepidermoid carcinoma and embryonal rhabdomyosarcoma were seen in the females while pleomorphic rhabdomyosarcoma; adenoid cystic carcinoma and malignant fibrous histiocytoma were seen in the males.

Table 2 Age and Sex distribution of the Regaud and Schmincke histological types of Nasopharyngeal carcinoma.

Age (Years)	Regaud		Schmincke	
	Male	Female	Male	Female
10-19	3	2	10	10
20-29	7	6	18	8
30-39	9	6	16	5
40-49	15	5	13	5
50-59	14	3	19	1
60-69	5	7	10	1
70-79	3	1	8	1
80- 89	-	-	1	1
Total	56	30	95	30

Discussion

Nasopharyngeal cancer, due to its cryptic nature is difficult to diagnose. The reasons for this include inaccessibility of the nasopharynx, vague and non-specific symptoms in the early stages, and the tendency to submucosal spread. The various ways that patients with NPC can present in our environment had been documented by previous studies from Nigeria[2-5, 8-10]. The most common form of presentation (in over 65% of cases) is cervical lymphadenopathy, which unfortunately indicates an advanced disease.

In previous reviews of NPC seen in the University College Hospital, Ibadan, Nigeria, the annual average number of patients seen was 9 and 12 respectively[2, 8] while this study shows an annual average number of 18 cases, thus indicating an increasing incidence of NPC in Ibadan. In the first study, NPC constituted 1.4% of all cancers in the hospital's cancer registry while in the present series, NPC constituted 2% of total cancers in the same registry, thus strengthening this observation.
The number of ORL units in teaching hospitals in Nigeria increased from 6 to 15 during the period covered by this review so that many more units took up a proportion of NPC patients. The various reports from Nigeria attest to this [2-6, 10]. It would therefore appear that this increase is real, rather than being just a factor of increased presence of specialists in our hospital and is consistent with a sustained increased incidence from the previous two studies.

The male predominance is in agreement with findings in the literature [1, 2, 7, 11]. The mean age in the present series is higher than the 35.2 years of Martinson's[2] but comparable to the findings in Jos, Nigeria[10]. Unlike in the previous study that found the oldest patient to be 65 years of age[2], the oldest in the present series is 81 years.

The bimodal age distribution of NPC shown in this study is similar to that of Martinson and Aghadiuno[8] in which the peaks were in the third and fifth decades of life

(Fig. 2). The first review by Martinson showed a single peak. In some previous study from Nigeria with bimodal distribution in the age of NPC patients, the first peak was in the second decade of life[4, 10]. The early peak is associated with the Schmincke type (WHO types II & III) of Nasopharyngeal Carcinoma seen in subpopulations with intermediate incidence. These also have longer remission and survival after treatment[10].

The Regaud type of nasopharyngeal carcinoma (WHO type I) has been associated with Human papilloma virus (types 11 & 16)[12] while the Schmincke type is more commonly associated with anti-EBV serologies and EBV DNA in the tumour cells[12,13]. The peak age of incidence of 20-29 years for the females corresponds to the early peak in the age distribution curve of nasopharyngeal carcinoma patients and 50-59 years of the males to the second peak. There would seem to be an unexplained increased susceptibility of the female sex to early EBV infection. What reasons there are for this are unknown except probably there are some social factors. It has been noted from recent studies in Nigeria, that the suspected etiological agents such as smoking, alcohol and tobacco consumption, eating of salted smoked fish, and woodwork, were not found to be significant factors[4, 10].

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