ENT/HEAD AND NECK MANIFESTATIONS IN NEWLY DIAGNOSED HIV/AIDS PATIENTS AS SEEN AT THE MBINGO BAPTIST GENERAL HOSPITAL-CAMEROON

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2010

DECLARATION

I certify that, this is my original work and has and been presented for a degree in any other university

Signed Acha Date 10/11/2010

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(candidate).

This thesis was supervised and has been submitted submitted for examination with my approval

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DEDICATION

This work is dedicated to GOD for making all possible, my wife Zitty for her encouragement and always being there for me. Special dedication to all those who are living positively with HIV/ AIDS, A CURE WILL ONE DAY BE FOUND.

ACKNOWLEDGEMENTS

I will like to thank my supervisor Prof. Isaac Macharia for continued guidance and assistance during the course of this work. I also greatly appreciate the contribution of all the consultants and colleagues of the ENT department of KNH and the UON for their positive , constructive criticisms and suggestions for the product of this work.

My gratitude also goes to my sponsors , the Cameroon Baptist Convention Health Board, the German ecumenical scholarship programme and bread for the world.

Finally special thanks to Mr. Simone Tegang for doing the stastistics ,the staff of the mbingo Baptist hospital HIV/AIDS treatment centre for their assistance and Mrs. Felicia Foinbam for proof reading and editing.

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ABSTRACT

BACKGROUND: HIV/AIDS is a fatal illness which breaks down the body's immunity and leaves the victim vulnerable to life threatening opportunistic infections, neurological disorders and unusual malignancies. About 80% of patients with HIV infection present with ENT/HN symptoms. Often the otolaryngologist may the primary physician that diagnoses the HIV infection. He should be aware and vigilant for its unusual presentations

AIM: To determine the ENT/HN manifestations in newly diagnosed HIV/AIDS patients.

STUDY DESIGN: Descriptive cross sectional study

SETTING: Mbingo Baptist General Hospital, Cameroon

METHODOLOGY: Patients who met the inclusion criteria were consecutively recruited in to the study. A medical history and physical examination focusing on the head and neck region was carried out and the findings entered in to a data collection form.

DATA ANALYSIS: The data was coded and analyzed using EPI-INFO version 8.Conclusions and recommendations were made based on these results.

RESULTS: Out of the 173 newly diagnosed HIV/AIDS patients recruited in this study 96% of them were found to have ENT/HN manifestations. Cervical lymphadenopathy was the most common finding(66.50%) followed by oral candidiasis(38.70), papulopruritic rash(15.70), parotomegally(13.86%), acute rhinosinusitis (11.56%).This study has also shown that there is a correlation between the number of ENT lesions and the WHO clinical stage of HIV/AIDS ($p<o.oo1$).More females were affected more that males and the females were affected at a younger age than males.

CONCLUSION: ENT/HN manifestations are common in patient infected with HIV/AIDS. This study has shown that 96% of HIV/AIDS infected patients present

with ENT/HN lesions. The commonest ENT/HN lesions are: cervical lymphadenopathy, oral/pharyngeal candidiasis, papulopruritic dermatitis, rhinosinusitis, parotomegally, hairy leucoplakia, vestibulitis, CSOM, and facial nerve palsy.

INTRODUCTION AND BACK GROUND

Over 50% of HIV infected patients will be seen first by the otolaryngologist. Yet many care givers are unaware of the ENT/head and neck manifestations hence are more likely to miss these symptoms. In the late 70s physicians began to see a number of patients with symptoms consistent with severe immunosuppression but without reason for the immunosuppression. Initially sexually active homosexual men and later intravenous drug users and users of blood transfusion products presented with Kaposi sarcoma, mucocutaneous candidiasis, pneumocystic pneumonia and other diseases usually found in those with severe immunosuppression.

The disease was dubbed, the acquired immune deficiency syndrome, and the causative virus was subsequently identified as the human immunodeficiency virus (HIV). The disease is probably the most significant illness of the twenty first century and now constitute a world wide pandemic. Our understanding of HIV and the mechanism of AIDS related illness is not fully complete and continues to evolve almost daily. HIV/AIDS has spawn a crisis in public health and raises a number of social concerns about treatment ,controlling the spread of the disease and the risk of health care workers from HIV/AIDS victims as well as the risk to the public from HIV/AIDS infected health workers[1].

Since the discovery of HIV in the USA in the early 80s HIV/AIDS has subsequently spread rapidly to affect the whole world. Africa, South of the Sahara with only 10% of the world population has 60% of the global HIV/AIDS cases. Cameroon with a population of just over sixteen million has a prevalence rate of 5.4%, 62% of these are women between the ages of 15-49 while 43000 children between the ages of 0-15 are living with HIV/AIDS. In 2005, 46000 deaths were due to HIV/AIDS [2,3]

As many as 70-80% of HIV/AIDS infected adults will eventually have ENT/head and neck manifestations at some point in the course of the disease, while about half of the children will present with ENT/head and neck manifestation.[4,5]For

EPIDERMIOLOGY OF HIV/AIDS

HIV/AIDS has become a global public health crisis with cases in virtually all the countries in the world. In sub Saharan Africa almost every family has or has had a family member affected with the disease [2,3]It is estimated that almost 37.8 million adults and 2.5 million children were affected worldwide with the virus, by the end of 2007. Two thirds of all the people living with HIV/AIDS are found in sub-Saharan Africa, approximately 25 million people [7]. In Cameroon, the prevalent rate is 5.4%, out of these 62% are women of child bearing age.[2,3]In Kenya approximately 2.2 million out of 36 million are living with the virus[9]While in Botswana, Zimbabwe, Swaziland, Lesotho and South Africa, the prevalence rate in persons between the ages of 15-49 is more than 30%.In 2003 alone approximately 3 million were newly infected while 2 million died of the illness worldwide.[8]

EAR, NOSE, THROAT/HEAD AND NECK MANIFESTATIONS OF HIV/AIDS

It was initially reported that 41% of patients with HIV/AIDS had ENT/HN manifestations but as the awareness increased recognition of these lesions also increased. It is now estimated that nearly 100% of patients with HIV/AIDS develop ENT/HN manifestation in the course of their illness.[10,11]

The ENT/HN manifestation can be classified as infections, neoplasm and primary neurological damage caused by the HIV virus. The common ENT/HN manifestations of HIV/AIDS are:

Neck

1) Cervical Lymphadenopathy

An enlarging neck mass has been reported in 91% of HIV/AIDS patients with head and neck manifestations [12].The aetiology of these neck masses can be HIV lymphadenopathy, infections and neoplasm. Persistent generalized lymphadenopathy also known as HIV lymphadenopathy is defined as unexplained generalized lymphadenopathy involving two or more extra inguinal sites and lasting more that three months ,it's a major criteria used in

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staging HIV/AIDS infections. The axilla and the neck are the most commonly affected sites.

Intrapulmonary disease has been reported to be predominately accounting for 50-60% of tuberculous infections in HIV/AIDS patients. One of the common sites includes the cervical lymph nodes. The neck mass is usually firm and non tender but 10% may be inflammatory [13, 14]. In HIV/AIDS patients MAC infection is the most common mycobacterial infection, it often originate from the lungs but it has been isolated primarily from the lymph nodes and other sites in up to 50% of affected patients and the response to typical mycobacterial therapy is unpredictable[15].

2) Malignant neck Masses

These include Kaposi sarcoma, though 95% of cases are found in the palate, other sites include, oropharyn, external ear, larynx, and the nose. The clinical course of this malignancy is unpredictable. Diagnosis is clinical but should be confirmed by biopsy prior to initiation of therapy, which can be low dose radiation or chemotherapy. Alternative therapy include intralesinal injection of vinblastine while carbon dioxide and argon laser has also been used in excision of canalicular or tympanic membrane lesions.The goal of therapy is to relief symptoms and improve cosmesis. Non hodgkins lymphoma is the second most common HIV/AIDS associated malignancy .It presents commonly as a non tender rapidly enlarging neck mass .The majority of these lymphomas are high grade .The work up and management is the same as for the general population[15,16]

The Parotid Gland

Xerostomia is a common complaint in HIV/AIDS positive patients, and present in close to 10% of these patients, though the cause is unknown but CMV has been implicated. Treatment includes saline rinses, sialogogues and topical fluoride application. Cystic parotid enlargement is a well documented finding in HIV/AIDS patients. This may occur earlier in the disease even prior to the diagnosis. The parotid involvement is typically unilateral or bilateral, uni or multicystic enlargement. Needle aspiration is indicated for symptomatic relief

and to rule out malignancy. Surgery should be avoided because of refractoriness. [17]

The Oral Cavity

The oral cavity represents one of the most common sites of HIV/AIDS related pathology. The spectrum includes infection, benign inflammatory, neoplastic and degenerative processes. Oral candidiasis is by far the commonest condition in HIV/AIDS patients. Its a recurring problem which presents as a tender white pseudo membranous or plaque like lesion with underlying erythmatous mucosal surface. Other types of Candida infections in the mouth are; the chronic hypertrophic form and angular cheilitis which present at the oral commisures.The diagnosis of oral candidiasis is clinical or made by potassium hydroxide scrapping from these lesions. Topical therapy with nystatin is effective.

Herpes simplex labialis commonly presents as crops of fever blisters on the palate, ginginva and other mucosal surfaces. The lesions tend to be larger, recurrent and more persistent and longer than in HIV negative persons, they may even extend to adjacent skin and coalesce to form giant herpetic ulcers. Treatment may not be necessary if asymptomatic and beginning to heal otherwise treat with acyclovir [18].

Hairy leucoplakia usually present as a white vertical corrugated lesion along the anterior or lateral border of the tongue. It occurs exclusively in HIV/AIDS patients and is associated with rapid progression and full blown AIDS.EBV is associated with these lesions. Treatment is not necessary. [18, 19] Recurrent aphthus ulceration is a very painful condition of the oral cavity formed by coalescing smaller lesions in to large ulcer and can present anywhere in the oral cavity or the pharynx. They are often associated with severe odynophagia, leading to anorexia and dehydration contributing to HIV/AIDS morbidity and wasting. The ulcer may become secondarily infected .Surgical or laser excision of these lesions is the treatment of choice [20]

Otologic manifestations

Sensorineural hearing loss: This has been reported in about 35% of HIV/AIDS infected persons[21],it may be unilateral or bilateral and it worsens steadily with increasing frequency but speech discrimination is usually preserved. The possible etiologies are a primary infection by HIV of the central nervous system or the peripheral auditory nerve, Cryptococcal meningitis or idiopathic. The virus is also said to hasten the development of otosyphilis leading to sensorineural hearing loss. Therefore diagnostic work up should include serologic testing for syphilis [21]

Otitis external: Otitis externa in HIV/AIDS patient is not deferent from the general population, although the course could be more dramatic. The predisposing factors include; excessive irritation or mechanical trauma. Patient presents with hearing loss, otalgia and inflamed EAC with purulent debris. Treatment requires prolonged suctioning of the exudates in the ear and topical antibiotics treatment. As in other immunocompromised patients, HIV/AIDS patients are more predisposed to having malignant otitis externa, or osteomyelitis of the skull base. The causative agent is pseudomonas aeruginosa, though P.carainii and M. tuberculosis has also been reported. Treatment requires combination of prolonged intravenous antibiotics and possibly surgical debridement. [22]

Otitis media: The most common otologic manifestation problem reported in HIV/AIDS patients are serous otitis media and recurrent acute otitis media. These conditions frequently affect paediatric HIV/AIDS patients because of Eustachian tube dysfunction typical of this age group. Depressed cell mediated immunity markedly increase their susceptibility to middle ear infection[23,24]In HIV/AIDS infected adults, Eustachian tube dysfunction can be caused by nasopharyngeal lymphoid hyperplasia, sinusitis and nasopharyngeal neoplasms. In patients with nasopharyngeal lymphoid hyperplasia, adenoidectomy will improve Eustachian tube function.

Nose and Sinuses

Rhinosinusitis: The prevalence of rhinosinusitis in HIV/AIDS patients ranges from 20-70%.The causative agents include atypical opportunistic and common

organisms responsible for sinusitis in hosts without HIV/AIDS. However opportunistic fungal infection caused by organisms such as alternaria alternate, Cryptococcus and Candida albicans are common in the immunocompromised. The features of sinusitis are the same as those in the general population. Medical therapy is effective while surgery is indicated to facilitate drainage and obtain tissue specimen to diagnose other infections and malignancy [23]

Nasal allergy: Contrary to what is expected, there is B-cell activation leading to increased production of circulating immunoglobulins and immune complexes. The excess IGE production is associated with increased IgE mediated allergic symptoms characterized by profuse rhinohoea and congestion that is similar to that in the general population although the intensity may suggest chronic persistent bacterial rhinosinusitis. Topical steroids nasal sprays and systemic antihistamines are effective though the newer second generation antihistamines are preferred in HIV/AIDS patients because of lesser anticholinergic activity resulting in decreased viscosity and adhesiveness of nasal secretions [25].

Ndjolo et al carried out a prospective study in three ENT clinics in Yaounde, Cameroon to determine the prevalence of ENT manifestations in HIV/AIDS patients and to correlate these with the clinical stages of the disease. They found out that the incidence of ENT manifestation in HIV/AIDS patients is {11.5%}.Pharyngeal and oral candidiasis represented the most observed manifestation {30.60%} followed by peripheral facial nerve paralysis {11.13%} ,rhinosinusitis {10.58%},parotid gland enlargement {8.23%},persistent cervical lymphadenopathy{ 7.05%}.While Kaposi sarcoma and tuberculous cervical lymph node represented {3.53%}.Correlation with the stage of the disease showed that these symptoms are observed in all the stages of the disease.[26]

Sommefun et al carried out a prospective study at the Lagos university teaching hospital, Nigeria to determine the presence of otolaryngological disease amongst HIV/AIDS patients and to correlate these with the clinical stage of the disease. The results showed that while only 17% were referred because of otolaryngologic disease, 80% actually had ENT/head and neck manifestations. Of these,60.20% had oropharyngeal lesions,24.5% had identifiable otologic disease, 20% being sensorineural hearing loss. This study highlights the importance of a thorough ENT examination in all patients, but in made no mention of nasal symptoms, and other otologic disease common in HIV/AIDS patients such as otitis media and otitis externa. [27]

Bakari et al carried out a retrospective study of 32 patients to highlight the common head and neck manifestation in HIV/AIDS patients in Kaduna, Northern Nigeria. The results showed that 31.3% had otitis media, 28.2% had facial nerve paralysis, 18.8% had parotid gland enlargement, 12.5% had sinusitis,9.4% had tonsillitis and pharyngitis,6.3% had cervical lymphadenopathy and pharyngeal tumours while 3.1% had sensorineural hearing loss and cavernous sinus thrombosis respectively. This study was a retrospective study and only 32 patients cases files were reviewed. [28]

Ondzoto et al also carried out a retrospective study at the Brazzaville university teaching hospital, Congo. They analyzed the files of 253 patients to document the prevalence of ENT manifestations inf HIV/AIDS patients .The results were as follows; neck{40%},ear{24.9%},pharynx{17.3%}nose{13.3%} oral cavity and vestibule{2.7%} and larynx{1.3%}And the specific affections were ;parotid enlargement {20.1%},facial nerve paralysis{15.4%},pharyngeal candidiasis {14.6%},sinusitis {14.2%},lymphoma and Kaposi sarcoma. While this study highlights the important role that the otolaryngologist play in the early diagnosis and management of HIV/AIDS, its main set back is that it was a retrospective study. [29]

Nyagah SM in his study on the ENT/head and neck manifestations in children and the effects if ARV at KNH observed ENT/head and neck manifestations in 56.5% of the patients, the commonest being oral candidiasis 13.9%, cervical lymphadenopathy 10.4% papulo pruritic dermatitis 10.4%, acute recurrent sinusitis 9.6% and acute chronic bilateral parotitis 8.7%.{24} Singh et al carried out a retrospective study on the ENT presentation of HIV/AIDS in children at ST Mary Hospital Paddington, London, UK. They found out that the commonest ENT disease were; cervical lymphadenopathy {70%}, otitis media {46%},oral candidiasis {35%},and adenotonsilar disease {31%}.[30]

Makokha et al carried out a prospective cohort study on 52 children with vertically transmitted HIV-2 in cottolengo children home in Nairobi. The children were between 4.5-13 years, and the results showed that the common illness amongst them were as follows;URTI 85.3%,pneumonia 56.2%,TB 56.1%,tonsillitis 34.1%,parotitis 28% and acute otitis media 25%,{31} As can be observed ,this study was not specific for ENT/HN manifestations.

Chaloryoos et al did a retrospective study on the ENT manifestations of AIDS in children at the children hospital in Bangkok, Thailand, between 1992-1996.They analyzed the case files of 250 children .The results on the prevalence of ENT manifestations of HIV/AIDS showed oral candidiasis in 59.6%,cervical lymphadenopathy {41.6%},URTI {39.5%}, otitis media {18.4%} and parotitis {5.2%}.[32].

Singh et al,and Chaloryoos were both retrospective studies, while the sample size of Singh et al patients was small. Both studies sought to document the prevalence of ENT/HN manifestations of HIV/AIDS in children but they did not correlate these with the clinical stages of the disease.

As can be noted the pattern of ENT/HN manifestations in the studies quoted above are essentially the same however there are significant differences in the frequency with which these manifestations occur, this could be due to the different diagnostic criteria and the study design used.

JUSTIFICATION OF THE STUDY

HIV/AIDS has become a global pandemic and Cameroon has not been spared. HIV/AIDS has adversely affected the socioeconomic development of our country. The otolaryngologist may be the first clinician that comes in contact with a patient that has not been previously diagnosed with HIV/AIDS. Therefore the primary health clinician and the otolaryngologist have to be conversant with these otolaryngologic manifestations of HIV/AIDS. This study will be done as a follow up to the one carried out in Yaounde, Cameroon. This study will also provide data that will be used to formulate strategies that will be use fight and control the HIV/AIDS epidermic

OBJECTIVES

Main objectives:

To determine the ENT/HN manifestations in newly diagnosed HIV/AIDS patients.

Specific objectives:

1. To determine the prevalence of ENT/HN manifestations in newly diagnosed HIV/AIDS patients.
2. To determine the demographic characteristics of persons with HIV/AIDS.
3. To correlate the ENT/HN manifestations in HIV/AIDS patients with the clinical stage of the disease.

STUDY DESIGN AND METHODOLOGY.

Study Design: Descriptive cross sectional study.

Setting: The study was carried out at the Mbingo Baptist General Hospital. The hospital is located at about 30Km from Bamanda, which is the provincial capital of the North West province of Cameroon with a population of 2.5 million inhabitants. The hospital is a 300 beds capacity hospital with in and out patients facilities. The department of internal medicine manages the HIV/AIDS approved treatment centre which provides counseling services and free ART to HIV/AIDS patients.

The Study Population.
Newly persons with HIV/AIDS not yet on treatment.

Inclusion criteria: All persons who are HIV/AIDS positive and are not yet on ART.

Exclusion criteria: Persons who refuse to give consent and those whose parents or guardians refuse to give consent and persons who are HIV/AIDS positive and are already on ART.

Sample size
The sample size was calculated using Fishers formula for descriptive studies

$N=Z^2P(1-P)/D^2$

N is the minimum sample size,
P is the prevalence of ENT/HN manifestations in HIV/AIDS patients, 11.5% in a study carried in Yaounde, Cameroon,
D is a constant,
Thus N =156

Sampling Method

All patients who met the inclusion criteria were consecutively recruited into the study until, the desired sample size was reached.

The study period

The study was done during a six week period, from the third week of August to the third week of September 2008.

Materials and Equipments

Torch ,aural speculum, otoscope, nasal speculum, spatulas, gloves and face mask.

Methodology

All persons that were included in the study were confirmed HIV positive patients. ELISA (determine) rapid test for persons older that 18 month. Determine test kit is used for screening, if its reactive, the test is repeated. If it's positive, a third test is carried out using Bioline which is a different ELISA test and if its positive, it confirms that the person is HIV positive. For children that 18 months an HIV DNA PCR should have been done to confirm the diagnosis of HIV. The principal investigator will introduce himself to the patients /guardians and seek to get their consent after which they will sign the consent form.

medical history and examination focusing mainly on the head and neck region done, and the finding entered in the modified university of Western Cape IO clinical data collection form (see appendix).Age, sex, marital status where licable were recorded. Physical examination was done using gloves, spatula, scope, nasal speculum, and turning fork(where applicable).

- ENT/HN examination was done as follows:

: both ears was examined, the pinna and mastoid region was inspected, Ie the EAC, TM and middle ear were examined using an otoscope. Otalgia ciated with either an erythematous bulging TM with or without opurulent otorrhoea was diagnosed as AOM. Reported otorrhoea with TM oration for more that two weeks was diagnosed as CSOM,OME was

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Torch ,aural speculum, otoscope, nasal speculum, spatulas, gloves and face mask.

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The ENT/HN examination was done as follows:

Ears: both ears was examined, the pinna and mastoid region was inspected, while the EAC, TM and middle ear were examined using an otoscope. Otalgia associated with either an erythematous bulging TM with or without mucopurulent otorrhoea was diagnosed as AOM. Reported otorrhoea with TM perforation for more that two weeks was diagnosed as CSOM,OME was

diagnosed on the basis of a dark bluish TM membrane conductive hearing loss, loss of light reflex on the TM and presence of fluid level or air bubbles in the middle ear .

Nose and Paranasal Sinuses: The external nose was inspected and with a torch both cavities examined, with the help of the nasal speculum to facilitate exposure. Vestibulitis was diagnosed by the presence of erythema, oedema and tenderness of the nasal vestibule. Patients were diagnosed to have rhinosinusitis ,if they had rhinorhoea, nasal congestion, frontal headache or facial pains with or without fever, symptoms that last less than 12 weeks were indicative of acute rhinosinusitis,while those lasting more than 12 weeks were indicative of chronic rhinosinusitis.

Oral Cavity: The lips was inspected, examination of the oral cavity and oropharynx was done using a torch and spatula, presence of whitish erythematous plaques that can easily be scrapped with the spatula and tender erythematous ulceration of the oral commissures was suggestive of oral candidiasis and angular cheilitis respectively. While oral hairy leukoplakia was diagnosed by the presence of whitish plaques on the lateral border of the tongue.

Pharynx and larynx: Inflammation of the oropharynx with or without enlarged tonsils associated with sore throat and odynophagia was diagnosed as tonsillopharyngitis. Oropharyngeal candidiasis was diagnosed by the presence of erythematous plaques in the oropharynx.

Head and neck

Inspection was done and any abnormalities were noted, all masses were palpated and defined in terms of size, shape, consistency, mobility and tenderness. For the neck lymph nodes and masses, the level of the neck involved was determined as follows.

Level 1: Submental or submandibular lymph nodes.

Level 2: upper deep cervical lymph nodes (from the base of the skull to the hyoid bone)
Level 3: Mid deep cervical lymph nodes (from the level of the hyoid bone to the cricoid cartilage)
Level 4: Lower deep cervical lymph nodes (from the cricoid cartilage downwards)
Level 5: Posterior cervical lymph nodes.
Level 6: Prelaryngeal and pretracheal lymph nodes.

Quality control

The data collection form was pretested prior to the commencement of the study and appropriate modification were made. The principal investigator carried out the history taking and physical examination.

Data analysis

All data was checked for completeness, consistency and accuracy, the data was coded and analyzed using EPI-INFO version 8 with the help of a statistician. The prevalence of various ENT/HN manifestation was determined and these was correlated with the clinical stages of the disease. The results presented in texts, graphs, tables and charts. Conclusions and recommendations made based on the results

Ethical consideration

Before the commencement of the study, the approval was sought and obtained from the Cameroon Baptist convention health board, ethical and review committee. The proposal for the study was also presented to the ENT/HN department, University of Nairobi. All patients signed a consent form prior to being recruited in to the study. No patient was penalized for declining to take part in the study. There was no added cost to the patients taking part in the study. All patients information was kept confidential. The results and knowledge acquired from the study will be shared with colleagues and used to the advantage of humanity and for the progress of science.

RESULTS

This was a prospective study carried out on newly diagnosed HIV/AIDS patients .A medical history and physical examination was carried out focusing mainly on the head and neck region and the findings recorded accordingly .None of the patients examined was on ART .Clinical staging of HIV/AIDS disease of each patient was done in accordance with WHO guidelines .

SOCIODEMOGRAPHIC CHARACTERISTICS

Out of the 173 patients that were recruited in to the study 119(68.8%) were female and 54(31.2%) were males. The age range of the patients was from 3-68 years. The mean age of the females was 33.26 years and that for the females was 32.33 years. There was a significant difference between the mean age of the males and that of the females (P value <0.005). The majority of the patients were in the age group 21-30, followed by 31-40, 41-50, 51+, and 0-20 age group respectively

The graph below represents the age group and gender distribution.

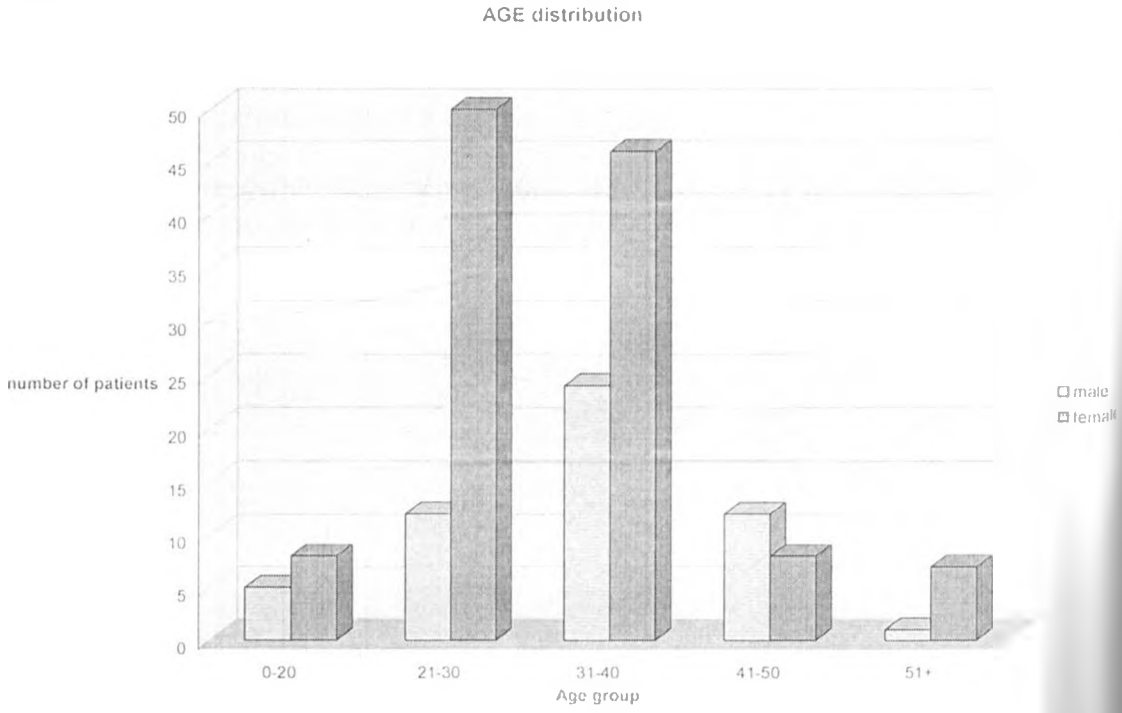

Figure1:Age distribution of the patients

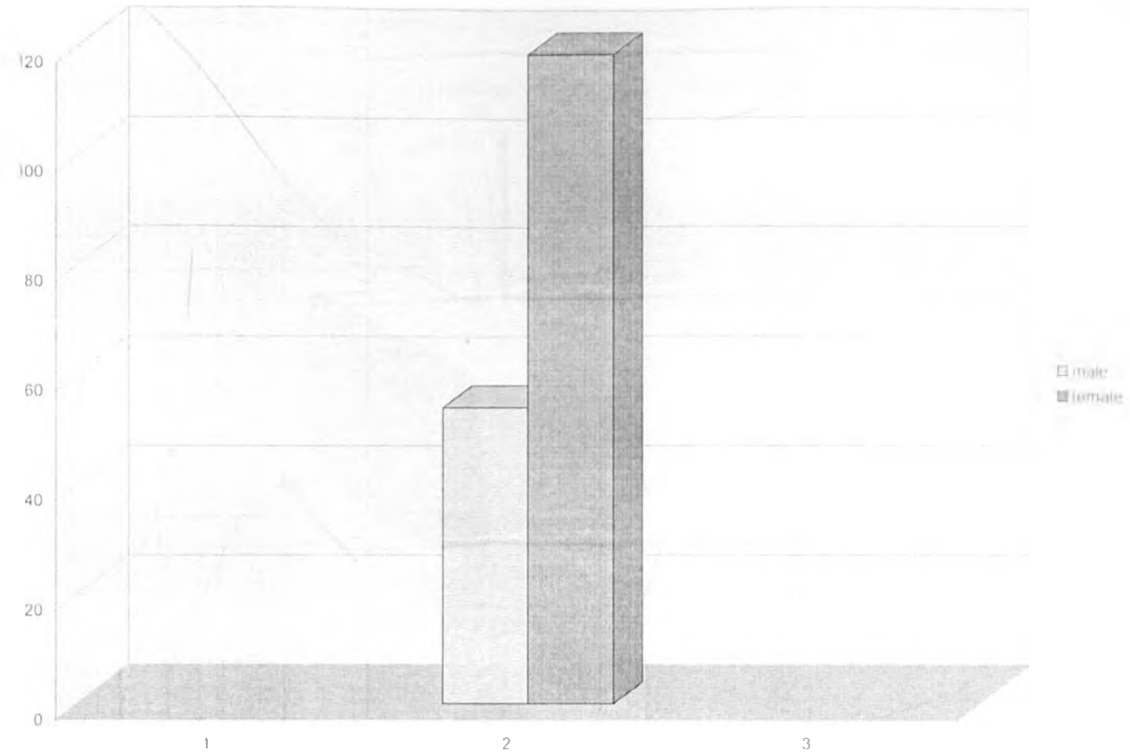

Figure2 Gender distribution of the patients

83(47.98%) of the patients were married, 34.69%) were singles, 26(15.03%) were widows, 3(1.73%) were divorced and 1(0.58%) was separated

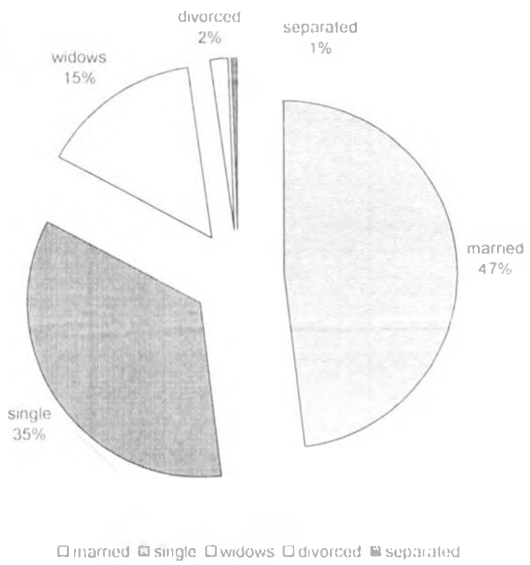

Figure 3: Marital status of patients.

SYMPTOMS AND SIGNS

133(76.9%) of the patients had at least one complaint associated with ENT disease, while 40(23.10) of the patients had no complaints associated with ENT diseases.

Of the 133(76.90%) patients who had symptoms associated with ENT disease, all (100%) of them were found to have signs associated with ENT diseases. While out of the 40(23.10%) patients that had no complaints, 33(82.5%) were found to have symptoms or signs associated with ENT diseases on examination. There was a strong association between presence of complaints and presence of signs (P value<0.001)

The most common sign seen during ENT/HN examination was cervical lymphadenopathy, found in 115(66.50%) of the patient, followed by oral candidiases, found in 67(30.70%) of the patients.

The table bellow shows the findings on clinical examination

SIGNS	NUMBER OF PATIENTS	PERCENTAGE
Cervical lymphadenopathy(ex In)	115	66.50
Oral candidiases	67	38.70
Papulopruritic dermatitis	27	15.50
parotomegally	24	13.87
Acute rhinosinusitis	20	11.56
Hairy leucoplakia	19	11.00
Herpes zoster scars	18	10.40
CSOM	11	6.40
Vestibulitis	9	5.20
Chronic rhinosinusitis	9	5.20
Oral ulcers	8	4.80
Submandibular hypertrophy	7	4.00
Oropharyngeal mass	5	2.90
Perichondritis of pina	2	1.20
Cervical abscess	2	1.20
Aural mass	2	1.20
epistaxis	2	1.20
Cervical sinus	1	0.60
Epiglotic mass	1	0.60

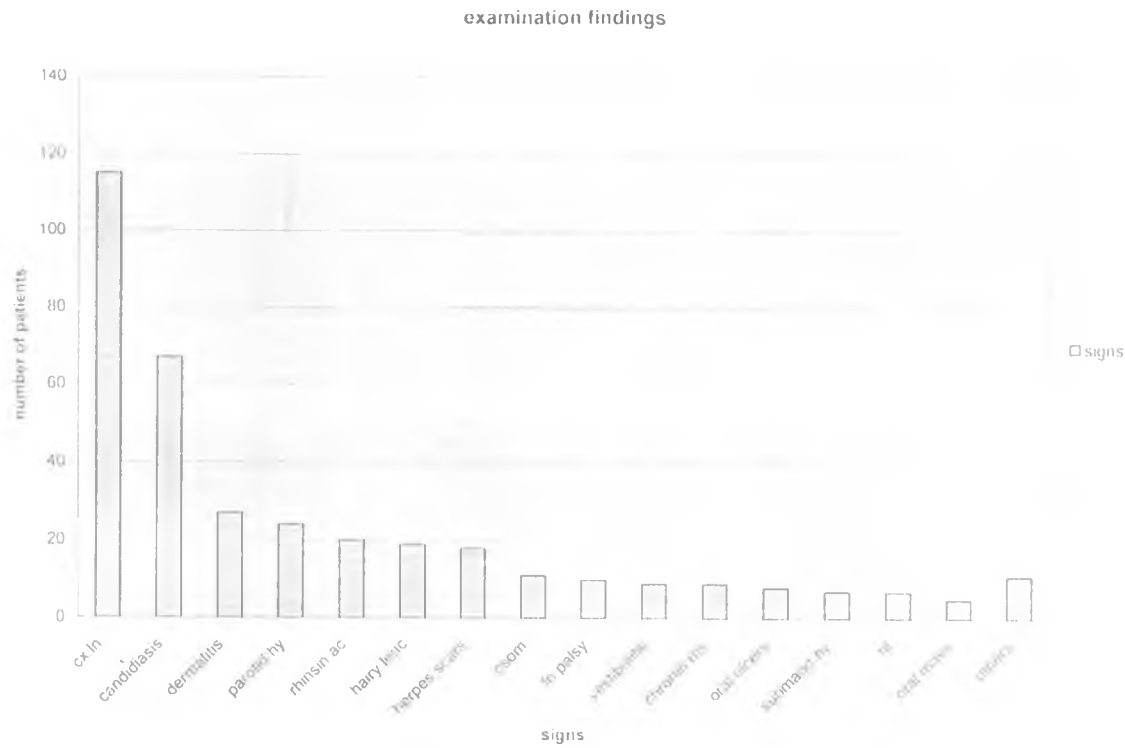

Figure 4: Examination findings.

WHO CLINICAL STAGE OF THE PATIENTS

71(41.0%) of the patients examined were in WHO clinical stage 1, 44(25.40%) were in WHO clinical stage 2, 41(23.70%) were in WHO clinical stage 3 and 17(9.80%) were in WHO clinical stage 4.Thus the majority of the patients examined were in WHO stage 2 and stage 3

WHO CLINICAL STAGE	NUMBER OF PATIENTS	PERCENTAGE
Stage 1	71	41.00
Stage2	44	25.40
Stage3	41	23.70
Stage4	17	9.80

Table 1: WHO clinical stage

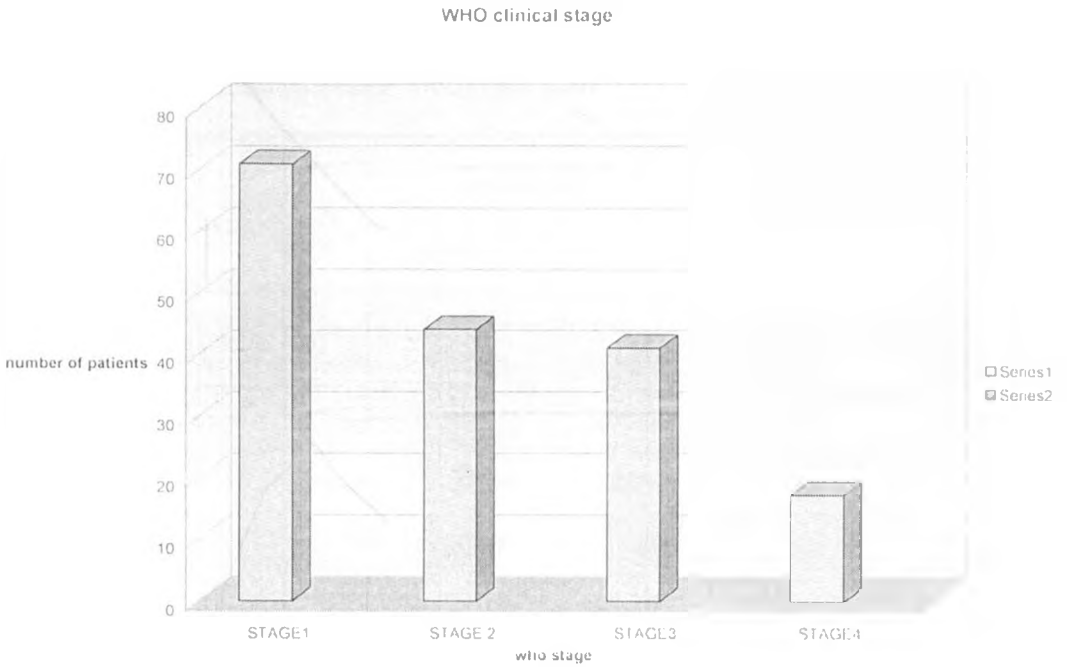

Figure 5: WHO clinical stage of the patients.

RELATIONSHIP BETWEEN THE CLINICAL SIGNS AND WHO CLINICAL STAGE OF T
PATIENTS

Although there were more patients with WHO clinical stage 1 disease comp
to the other stages, the majority of patient were in stage 2,and stage 3,howe
it can be seen from the table and graph below that the more advanced the
stage of the disease is, the higher the number of signs that the patient had. (
value<0.001)

Clinical signs * WHO clinical STAGE Cross tabulation

Number of clinical signs		WHOSTAGE				Total
		Stage 1	stage 2	stage 3	stage 4	Stage 1
	0-10	0	1	0	0	1
		.0%	2.3%	.0%	.0%	.6%
	11 - 20	42	10	6	3	61
		59.2%	22.7%	14.6%	17.6%	35.3%
	21 -30	29	31	28	8	96
		40.8%	70.5%	68.3%	47.1%	55.5%
	31 +	0	2	7	6	15
		.0%	4.5%	17.1%	35.3%	8.7%
Total		71	44	41	17	173
		100.0%	100.0%	100.0%	100.0%	100.0%

Table2: Clinical signs and WHO clinical stage cross tabulation.

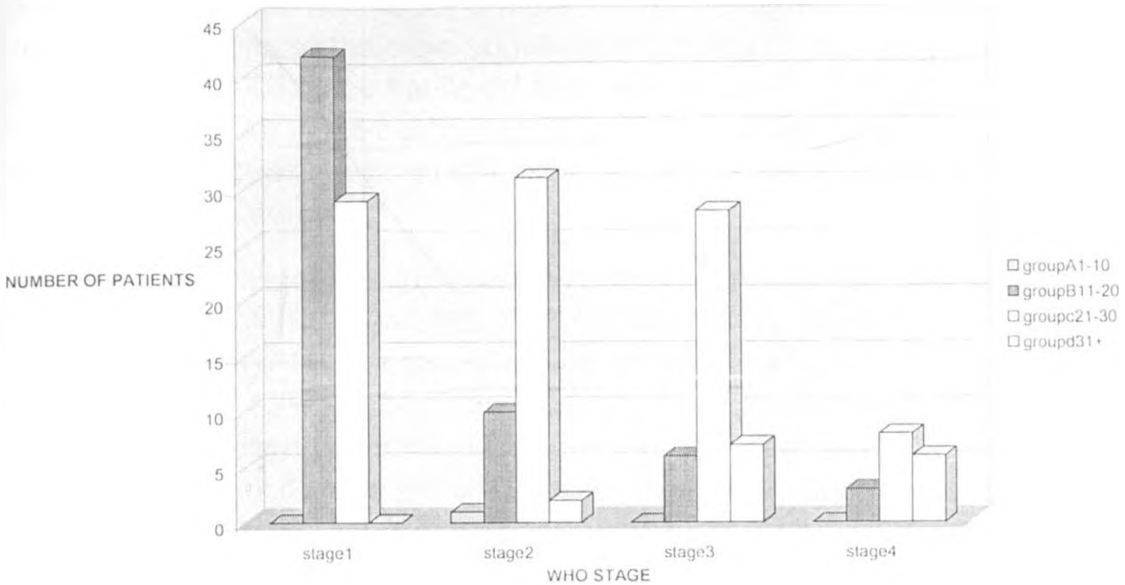

Figure6: Relationship between number of sign seen and the clinical stage of the disease.

Though there are more patients in WHO clinical stage one and two, the few patients in WHO clinical stage 3 and 4 were observe to have more clinical signs.

DISCUSSION

The HIV/AIDS epidemic is still increasing at an alarming rate and African countries particularly those south of the Sahara are the worst affected .HIV serology is not a routine procedure, so the otolaryngologist must play a key role in the early diagnosis of HIV/AIDS, since the head and neck region contains about 400 out of the 800 lymph nodes in the body. Since the head and neck region is exposed most patients will seek medical advice either as a concern for infectious disease or for cosmetic reasons.

The main objective of this study was to determine the ENT/HN MANIFESTATIONS OF HIV/AIDS IN NEWLY DIAGNOSED PATIENTS.166(96%) of the patients examined had at least a sign or lesion associated with ENT/HN disease. This finding is higher than the range of 40-90% reported in other studies, Sommefun et al (27) reported that 80% of the patients examined had atleast a sign or lesion associated with ENT/head and neck disease while kassim (33) reported a prevalence of 71%.This variation in the prevalence of ENT lesions could be due to environmental and genetic factors, strain of the HIV virus and the setting of the study and the different stages of the HIV/AIDS in the patients examined.

Cervical lymphadenopathy was the commonest manifestation observed 115(66.50%).Cervical lymphadenopathy was also common in the studies done by Kassim(33),Ndjolo et al(26) and Sommefun et all (27).Cervical lymphadenopathy is the host immune response to the presence of HIV virus in the body.

Oral/pharyngeal candidiasis was the second most common ENT lesion found in the patients examined, it was found in 38.70% of the patients examined, it was also a common finding in other studies, 24, 26, 27, 33.Oral/pharyngeal candidiasis is a fungal infection, its present in the mouth or pharynx is suggestive of impaired immune function.

16.76% of the patients examined had rhinosinusitis, 11.56% had acute rhinosinusitis and 5.2% had chronic rhinosinsitis.This is higher than the figure quoted in other studies, Ndjolo et al (10.58%) (26), Bakari et al (9.40%) (28).This could represent a change in the pattern of manifestation of HIV/AIDS in the ENT/HN region as previously reported by Birchall et al (34).Where it was observed that though cervical lymphadenpathy and oral candidiasis was common, the frequency with which they occur was reducing while they was a marked increase in the frequency of rhinosinusitis.

5.8% of the patients examined had facial nerve palsy.This is lower than the figure found in other studies.Ndjolo et al (26) found out that 11.13% of the patients examined had facial nerve palsy while Ondzoto et al (29) in their

retrospective study found out the 15.40% of the patients had facial nerve palsy.This disparity could be due to the different stages of HIV infection in the study population or due to infection with a different strain of virus.Genetic factors cal also not be ruled out.

Kaposi sarcoma is the commonest malignancy in HIV/AIDS patients [16, 17] 2.9%(5) of the patients seen in this study had Kaposi sarcoma, and this is similar to what was found by Ondzoto et al (29) but lower than figures reported in Europe [16,17] This could probably due to the small number of homosexual in Africa compared to Europe or may be the findings are under reported in the A frican setting, also lack of appropriate diagnostic tools can equally not be ruled out.

In this study ,there were more females (68.8%) than males (31.2%),this similar to the figures reported by UNAIDS in their study on the epidermiololgy of HIV/AIDS infection in Cameroon[2,3].Kassim(33) reported a female /male ratio of 60.30/39.70 This finding could be a reflection of the higher prevalence of HIV/AIDS infection among females in the general population.

The majority of the patients in this study were in the 20-40 age group, similar to what has been reported in other studies [2, 3, 21, 33].Although the majority of the patients were in the 20-40 age group, they may have acquired the infection much earlier

This study has shown that ENT/HN manifestations are observed in all stages of HIV/AIDS disease.

Although most of the patients were in Who clinical stage 1 and stage 2, it was observed that patients in more advanced stages disease,stage3 and stage 4,had more ENT/HN lesions, this is similar to what was observed by Ndjolo et al (26) however in the study carried out by Sommefun at al (27),the correlation between ENT/HN manifestation and clinical stage of the disease did not reveal any clear pattern. The increase in the number of ENT lesion in the patients with more advanced stage of the disease could be because of reduction in the body immune status which exposes the body to more opportunistic infection and malignancy

CONCLUSION

ENT/HN manifestations are common in patients infected with HIV/AIDS. This study has snown that 96% of HIV/AIDS infected patients present with ENT/HN lesions. The commonest ENTHN LESIONS are: cervical lymphadenopathy,oral/pharyngeal candidiasis,papulopruritic dermatitis,rhinosinusitis,parotomegally,hairy leucoplakia,vestibulitis,CSOM,and facial nerve palsy.

RECOMMENDATIONS

1. The ENT/HN surgeon should be familiar with the ENT/HN manifestations of HIV/AIDS
2. The ENT/HN surgeon should play an active and leading role in the early diagnosis management and follow up of patients with HIV/AIDS
3. Prevention strategies should focus more on the 20-40 age group, since they are the age group most affected

Budget

Transportation	USD 1000
Stationeries	USD 500
Statistician	USD 250
Miscellaneous	USD 250
Total	USD 2000

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APPENDIX I

PATIENT CASE REPORT FORM

IP NO: _____ STUDY NO: _____

AGE: _____ Yr: _____Mo. SEX: _____

WEIGHT: _____Kg

1. OTOLOGICAL SYMPTOMS

		Right	Left
a)	Otorrhoea (tick response)		
	Yes	☐	☐
	No	☐	☐
If yes			
(i)	Duration		
	≤14 days	☐	☐
	>14 days	☐	☐
(ii)	Frequency last 6 months		
	≤2 episodes	☐	☐
	>2 episodes	☐	☐
b)	Otalgia (tick response)		
	Yes	☐	☐
	No	☐	☐
c)	Hearing loss (tick response)		
	Yes	☐	☐
	No	☐	☐
	If yes; persistent	☐	☐
	fluctuant	☐	☐

d) Aural swelling (tick response)

e) Others (specify) .....

2. RHINOLOGIC

		Right	Left
a)	Nasal discharge (tick response)		
	Yes	☐	☐
	No	☐	☐

If yes;

Watery ☐ ☐

Purulent ☐ ☐

Blood stained ☐ ☐

Duration ≤ 3 months ☐ ☐

> 3 months ☐ ☐

b) Epistaxis (tick response)

Yes ☐ ☐

No ☐ ☐

c) Nasal blockage (tick response)

Yes ☐ ☐

No ☐ ☐

If yes;

Duration ≤ 3 months ☐ ☐

> 3 months ☐ ☐

d) Nasal swelling (tick response)

Yes ☐ ☐

No ☐ ☐

e) Others (specify) .....

.....

3. LIPS AND ORAL CAVITY (tick response) YES NO

a) Labial / oral swelling ☐ ☐

b) Labial/ oral ulcers ☐ ☐

c) Bleeding from oral cavity ☐ ☐

d) Others (specify) .....

.....

4. PHARYNX AND LARYNX (tick response) YES NO

a) Odynophagia ☐ ☐

b) Dysphagia ☐ ☐

c) Hoarseness ☐ ☐

d) Others (specify) .....

.....

5. SALIVARY GLANDS (tick response) YES NO

a) Parotid swelling ☐ ☐

b) Submandibular swelling

c)Dryness of the mouth

d) Others (specify) .....

6. HEAD (tick response)

	YES	NO
a) Facial weakness or asymmetry	☐	☐
b) Facial swellings	☐	☐
c) Cutaneous lesions	☐	☐
d) Herpetic eruptions	☐	☐
If yes; frequency last 12 months		
<2	☐	☐
>2	☐	☐

e) Others (specify) .....

7. NECK (tick response)

	YES	NO
a) Swelling	☐	☐
b) Ulcers / wounds/ sinuses	☐	☐

c) Others (specify) .....

EXAMINATION FINDINGS

1. OTOLOGIC

a) Pinna (tick response)

	Right		Left	
	Yes	No	Yes	No
(i) Normal	☐	☐	☐	☐
(ii) Perichondritis	☐	☐	☐	☐
(iii) Dermatitis	☐	☐	☐	☐
(iv) Mass	☐	☐	☐	☐

If mass present describe .....

(v) Others (specify) .....

.....

b) External auditory canal (tick response)

	Right		Left	
	Yes	No	Yes	No
(i) Normal	☐	☐	☐	☐
(ii) Discharge	☐	☐	☐	☐
If discharge; purulent	☐	☐	☐	☐

Mucoid ☐ ☐ ☐ ☐

Blood stained ☐ ☐ ☐ ☐

Foul smelling ☐ ☐ ☐ ☐

(iii) Inflammed ☐ ☐ ☐ ☐

(iv) Debris ☐ ☐ ☐ ☐

(iv) Aural mass ☐ ☐ ☐ ☐

If mass present, describe .....

.....

(v) Others (specify) .....

c) Tympanic membrane (tick response)

(i) Colour; Normal ☐ ☐ ☐ ☐

Red ☐ ☐ ☐ ☐

Dull ☐ ☐ ☐ ☐

(ii) Position; Normal ☐ ☐ ☐ ☐

Retracted ☐ ☐ ☐ ☐

Bulging ☐ ☐ ☐ ☐

(iii) Integrity; Normal ☐ ☐ ☐ ☐

Perforated ☐ ☐ ☐ ☐

(iv) Light reflex; present ☐ ☐ ☐ ☐

d) Others (specify).....

Turning Fork :Rinne Test; Positive

Negative

Weber Test; Central

Lateralization

2. RHINOLOGIC (tick response)

	Right		Left	
	YES	NO	YES	NO
a) Vestibulitis	☐	☐	☐	☐
b) Nasal discharge;				
(i) Watery	☐	☐	☐	☐
(ii) Mucopurulent	☐	☐	☐	☐
(iii) Bloody	☐	☐	☐	☐
c) Hypertrophied inferior turbinates	☐	☐	☐	☐

Mucoid ☐ ☐ ☐ ☐

Blood stained ☐ ☐ ☐ ☐

Foul smelling ☐ ☐ ☐ ☐

(iii) Inflammed ☐ ☐ ☐ ☐

(iv) Debris ☐ ☐ ☐ ☐

(iv) Aural mass ☐ ☐ ☐ ☐

If mass present, describe .....

.....

(v) Others (specify) .....

c) Tympanic membrane (tick response)

(i) Colour; Normal ☐ ☐ ☐ ☐

Red ☐ ☐ ☐ ☐

Dull ☐ ☐ ☐ ☐

(ii) Position; Normal ☐ ☐ ☐ ☐

Retracted ☐ ☐ ☐ ☐

Bulging ☐ ☐ ☐ ☐

(iii) Integrity; Normal ☐ ☐ ☐ ☐

Perforated ☐ ☐ ☐ ☐

(iv) Light reflex; present ☐ ☐ ☐ ☐

d) Others (specify).....

Turning Fork :Rinne Test; Positive

Negative

Weber Test; Central

Lateralization

2. RHINOLOGIC (tick response)

	Right		Left	
	YES	NO	YES	NO
a) Vestibulitis	☐	☐	☐	☐
b) Nasal discharge;				
(i) Watery	☐	☐	☐	☐
(ii) Mucopurulent	☐	☐	☐	☐
(iii) Bloody	☐	☐	☐	☐
c) Hypertrophied inferior turbinates	☐	☐	☐	☐

d) Atrophic rhinitis ☐ ☐ ☐ ☐

e) Nasal mass ☐ ☐ ☐ ☐

f) Facial tenderness

Yes ☐

No ☐

If mass present; describe .....

.....

g) Others (specify) .....

.....

3. LIPS, ORAL CAVITY (Tick response) YES NO

a) Lips

(i) Ulcers ☐ ☐

(ii) Mass ☐ ☐

If ulcers / mass present; describe .....

.....

b) Tongue

(i) Candidiasis ☐ ☐

(ii) Ulcers ☐ ☐

(iii) Mass ☐ ☐

(iv) Hairy cell leukoplakia ☐ ☐

If any present describe .....

c) Palate

(i) Candidiasis ☐ ☐

(ii) Ulcer ☐ ☐

(iii) Mass ☐ ☐

If any present, describe .....

.....

d) Buccal mucosa

(i) Candidiasis ☐ ☐

(ii) Ulcer ☐ ☐

(iii) Mass ☐ ☐

If any present describe .....

.....

e) Others (specify) .....

.....

4. OROPHARYNX (Tick response)

	YES	NO
a) Candidiasis	☐	☐
b) Pharyngotonsillitis	☐	☐
c) Oropharyngeal mass	☐	☐

If mass present, describe .....

.....

d) Others (specify) .....

.....

5. SALIVARY GLANDS (Tick response)

	YES	NO
a) Parotid		
(i) Hypertrophied	☐	☐
(ii) Tender	☐	☐
b) submandibular		
(i) Hypertrophied	☐	☐
(ii) Tender	☐	☐

c) Others (specify) .....

.....

6. HEAD (Tick response)

	YES	NO
a) Facial nerve paralysis	☐	☐
b) Herpes zoster eruptions/scars	☐	☐
c) Papulo-pruritic dermatitis	☐	☐
d) Seborrhoeic dermatitis	☐	☐
e) Masses	☐	☐

If masses present describe .....

.....

f) Others (specify) .....

.....

7. NECK

		Right		Left	
		Yes	No	Yes	No
a)	Abscesses	☐	☐	☐	☐
b)	Lymphadenopathy				
	(i) Solitary	☐	☐	☐	☐
	(ii) Multiple – discrete	☐	☐	☐	☐
	matted	☐	☐	☐	☐
	(iii) Site – level I	☐	☐	☐	☐
	II	☐	☐	☐	☐
	III	☐	☐	☐	☐
	IV	☐	☐	☐	☐
	V	☐	☐	☐	☐
	VI	☐	☐	☐	☐
	(iv) Size ≤ 2 cm	☐	☐	☐	☐
	> 2 cm	☐	☐	☐	☐
	(v) Tender	☐	☐	☐	☐

c) Others neck masses

If present, describe .....

DIAGNOSIS

(i) ----------

(ii) ----------

(iii) ----------

(iv) ----------

WHO STAGE

(i) clinical.....

APPENDIX II

REVISED WHO CLINICAL STAGING OF HIV/AIDS DISEASE:

WHO Stage II	• Papular pruritic eruptions (PPE) • Seborrhoeic dermatitis • Fungal nail infections Angular cheilitis
WHO Stage I	• Asymptomatic • Persistent generalized lymphadenopathy (I • Hepatosplenomegaly
	• • Linear gingival erythema • Extensive human papilloma virus (HPV) or molluscum infection (> 5% body area / la • Recurrent oral ulcerations (> 2 episodes/ 6 months) • Parotid enlargement • Herpes zoster (> 1 episode/12months) • Recurrent or chronic upper respiratory infection (URTI): Otitis media, otorrhoea, si episodes / 6 months)
WHO Stage III	• Unexplained moderate malnutrition (- 2 SD or Z score) not responding to standard th • Unexplained persistent fever (intermittent or constant, > 1 month) • Oral candidiasis (outside the neonatal period) • Oral hairy leucoplakia • Pulmonary tuberculosis • Severe recurrent presumed bacterial pneumonia (> 2 epidodes/12 months) • Acute necrotizing ulcerative gingivitis/periodontitis • Lymphoid interstitial pneumonia • Unexplained anaemia (<8g/dl), neutropenia (<1000/mm^3) or thrombocyt 30,000/mm^3) for > 1 month • HIV related cardiomyopathy • HIV related nephropathy
WHO Stage IV	• Unexplained severe wasting as severe malnutrition (- 3 SD or Z score) not res standard therapy • Pneumocystis pneumonia

- Recurrent severe bacterial infections (> 2 episodes/12 months excluding pneumc
- Chronic orolabial or cutaneous HSV (lasting > 1 month)
- Extrapulmonary tuberculosis
- Oesophageal candidiasis
- Central nervous system toxoplasmosis
- Cryptococcal meningitis
- Any disseminated endemic mycosis
- Cryptosporidiosis or isosporiasis (with diarrhea > 1 month)
- CMV infection of organ other than liver, spleen, lymph nodes (and onset age > 1
- Disseminated mycobacterium disease other than tuberculosis
- Candida of trachea, bronchi or lungs
- Acquired recto-vesicular fistula
- Cerebral or b-cell non Hodgkin lymphoma
- Progressive multifocal leucoencephalopathy (PML)
- HIV encephalopathy

Presumptive stage 4 diagnosis in HIV-antibody positive children less than 1 where virological confirmation of infection is not available.

Two or more of the following;

- Oral candidiasis/thrush
- Severe pneumonia requiring oxygen
- Severe wasting/failure to thrive

Severe sepsis requiring injectable antibiotics

Appendix III

Consent explanation.

This is a study that will look at problems or illnesses in the head and neck region that are mainly as a result of HIV/AIDS infection. Some questions will be asked to you about your illness and you will also be examined, however the examination will concentrate mainly in the head and neck region, and all the information obtained will be recorded on a form which will be assigned a number and not your name.

Participation in this study is and no monetary remunerations will be given, refusal to participate in the study will not affect the way you will be treated, and no added cost will result from participating in this study.

The result of this study will enable health workers to better understand and treat people with HIV/AIDS

Appendix iv

Consent form

Name:

Age:

Address:

Relationship:

I hereby give consent to be included in the study: ENT/HN manifestations of HIV/AIDS patients as seen at Mbingo Baptist Hospital Cameroon, the nature of which has been explained to me by Dr.Acha

It has been made clear to me that the study is for academic purposes and will contribute to a better understanding and management of patients with HIV/AIDS.

Signature of patient/guardian

Signature of doctor