# AFRICAN JOURNAL OF MEDICINE and medical sciences

# VOLUME 31, NUMBER 3, SEPTEMBER 2002

EDITOR: **B. O. OSOTIMEHIN ASSISTANT EDITOR:** A. O. UWAIFO

ISSN 1116 - 4077

# HIV-assocated lymphoma: a case report

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#### Summary

We report the case of a 3<sup>1</sup>/<sub>2</sub> year old boy who presented with sudden onset of headache. Fever and swelling of the left eye. He had complete opthalmoplegia of the left eye and 6<sup>th</sup> cranial nerve paralysis in the right eye. He was thought to have cavenous sinus thrombosis but CT findings suggestive of lymphoma led to the correct diagnosis of HIV associated Lymphoma. It view of the rising incidence of HIV infection and the protein clinical manifestations, it is advised that all patients with disseminated tumour masses should be screened for the HIV virus, and CT examination should be made available to patients.

### Keywords: Lymphoma, computed tomography, HIV

#### Résumé

Nous reportons la cas d'un jeune garcon de 3 ans et demie (3.5 ans) qui s'est presentee tont a coup avec un debut de mal de tete, fievre et l'el gauche enfle. Il avait une ophthalmologic de l'oeil ganche et le 6eme neif cranien de l'oeil droit paralyse. Nous avons cru qui il avait le sinus thrombose caveneux mais les donnees CT suggestif de la lymphoma a conduit an diagnostic correct du VIH. En vue de l'incidence grimpante de l'infection an VIH et les manifestation clinique, il est conscille que tous les patients ayant des masses tumerenses disseminees doivent subir le test de depistage du virus VIH, et l'examiation CT devrait etre mis a la disposition des patients.

#### Introduction

Human Immunodeficiency Virus (HIV) infections continues to spread around the world and particularly in Sub-Saharan Africa where the infections has now reached epidemic proportions [1]. In the vast majority of cases, the infection is. initially silent for variable periods and the probability of HIV disease is usually first considered when indicators of HIV/AIDS become evident. These in children include various malignancies, and in particular lymphomas and Kaposi's sarcoma [2.3]

We report the case of a 3<sup>1</sup>/<sub>2</sub> year old boy who presented with signs and symptoms suggestive of cavenous sinus thrombosis. The CT features of lymphoma led to the correct diagnosis of HIV associated Lymphoma.

## Case reporrt

A 3½ year old boy who was previously well, presented with sudden onset of headache and fever of two days duration, and swelling of the left eye of one-day duration. Five days later, the orbital swelling had become bilateral but more evident on the left. Further examination revealed complete opthalmoplegia of the left eye. The right eye also showed 6th cranial nerve paralysis and sluggish pupillary reaction. A cranial CT was then obtained to exclude cavenous sinus thrombosis. This revealed an enhancing mass in the naso-pharynx extending into the ethmoidal sinuses and the medial aspect of both orbits with

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displacement of the medial rectus muscles. There was also opacification of the para-sella structures (Fig. 1A-C). A CT diagnosis of intra cranial malignancy, probably lymphoma



Fig. 1a. Unenhanced CT of the brain (Axial view) showing a hyperdense mass in the base of the skull anteriorly and extending into the orbits, ethmoidal sinuses and parasellar region



Fig. 1b. CECT (axial view) of same showing brilliant enhancement of the mass



Fig. 1c: CECT (coronal view) of same showing brilliant 283 enhancement of the mass.

because of the involvement of the sinonasal region or neuroblastoma was suggested. The probability of HIV infection was first considered at this point and appropriate serological tests on the blood samples of the patients and his parents were ordered. Subsequent neuro-surgical exploration of the tumour and histological examination of the tumour biopsy revealed poorly differentiated small cell tumour also considered to be either neuroblastoma or lymphoma. The patient was commenced on tumour chemotherapy with Vincristine, Actinomycin D, and Cyclophosphamide (VAC) regimen because of the differential diagnosis of lymphoma on CT and the initial histological report of possible lymphoma. His condition however did not improve. Three weeks after the onset of the illness, he developed a swollen left leg, and rectal and abdominal examinations done at this time revealed poorly defined pelvic and abdominal masses. Subsequent CT examination of the abdomen and pelvis showed a large pelvic mass of mixed density displacing the rectum to the right. Both kidneys were enlarged and contain multiple hypodense masses within them. A mass of non-homogenous density obscuring normal para-aortic structures and extending within the messentery was also seen (Fig. 2 and 3). This appearance suggested a diagnosis of abdominal lymphoma. The patient died 4 days later. The results of the previously performed serological tests confirmed that the patient and his parents were sero-positive for HIV infection. Histological studies of the biopsy and autopsy materials also confirmed a definitive diagnosis of non-Hodgkins lymphoma.



Fig. 2: CT of the pelvis showing a mixed density mass (M) displacing the rectum (arrow) and the bladder (arrow-heads\_ to the right side.



Fig. 3: CT of the abdomen showing multiple hypodense masses (arrow-heads) in the kidneys

# Discussion

The incidence of lymphoma in AIDS patients is rapidly increasing and in one series, was found to have

increased three-fold within a decade [4]. It is therefore important for practitioners in areas with high prevalence of AIDS/HIV infections to be familiar with the various diagnostic features of lymphoma.

A strong association between HIV infection and childhood malignancies, in particular lymphoma and Kaposi's sarcoma, have been reported from various African countries including Uganda, Zimbabwe, Cote D'Ivoire, Zaire and South Africa [2,3,5]. Published reports from Nigeria to date have suggested that lymphoma and Kaposi's sarcoma very rarely occur in association with HIV infections [6]. This may be attributed to earlier phase of HIV epidemic in Nigeria than in countries where high incidence of

lymphomas and Kaposi's sacroma in association with HIV infection have been reported. In this regard, it is relevant to note that all the countries that have reported a strong association between childhood malignancies and HIV infections have a higher prevalence of HIV infections than Nigeria [1]. It is likely therefore that more frequent occurrence of childhood malignancies including lymphoma will become evident as the HIV pandemic evolves further in Nigeria.

Computed Tomographic features suggestive of lymphoma was the first indicator of probable HIV infection which prompted the request for relevant serological tests in our patient. When lymphoma co-exists with HIV/AIDS, it is usually of the non-Hodgkins variety [7] of the non-Hodgkin variety as in this case, and it is disseminated to all areas of the body containing lymphoid cells. Cranial lymphoma often occurs in the sino-nasal region as in this patient but more usually, the lesion of cerebral lymphoma is usually centrally located in the deep basal ganglia, peri-ventricular region or corpus callosum and abut on the ependyma [4]. It can also infiltrate the brain diffusely rather than form a dominant mass and mimick other brain tumor [8]. About 90% of them are iso-to moderately hyperdense on the un-enhanced CT scan and show strong. homogenous enhancement following contrast administration [4,7] as in this patient (Fig.1A&B). Non-enhancing tumour also occur but are rare [9]. Lepto-meningeal disease is the most common type of lymphomatous CNS metastasis [10]. Focal masses or peri-neural tumours can occur and the involvement of the nose and para-nasal sinuses may mimick the much more common entities of sinusitis, polyposis and malignant neoplasm such as neuroblastoma, or para-sella tumours on CT examination. The findings include soft tissue masses filling the involved structures, usually maxillary sinus and nasal airways. as well as bone destruction and metastatic spread to the brain [8]. Our patient had orbital, intra cranial and disseminated abdominal pelvic lesions. Computed tomography features of abdominal lymphoma in patients with AIDS include higher frequency of splenic and hepatic involvement than in non-AIDS patients with focal masses or micro-abscesses in the liver [11,12] In addition, mesenteric lymphadenopathy and pelvic nodal masses are common. When the kidneys are involved, it is a late manifestation of the disease and the most common CT appearance are multiple bilateral nodules, found in about 28-50% of kidneys [13] and direct invasion from contiguous lymphnode masses o diffuse infiltration. Typically, the intra-renal tumours are hypo-dense relative to normal renal parenchyma and enhance less than normal renal tissue after intravenous contrast medium administration (Fig 3). These CT appearances

of renal lymphoma may be indistinguishable from other solid intra-renal masses. However, differentiation is possible when there is co-existing splenomegaly, or widespread lymph-node enlargement as in this patient.

In view of the rising incidence of HIV infection and the protean clinical manifestations, it is suggested that all patients with disseminated tumour masses should be screened for the HIV virus. Furthermore, CT examination which is an invaluable tool in the diagnosis of abdominal and cranial lymphomas should be readily available to these patients.

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