

# Scopulariopsis associated meningitis in adult Nigerian AIDS patient – A case report.

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## Summary

Since the advent of HIV/AIDS, many opportunistic organisms have proved to be potential pathogens in infected patients. We present a case report of opportunistic filamentous fungal meningitis caused by *Scopulariopsis* species in a 38 year old Nigerian male.

**Keywords:** *Scopulariopsis* species, Meningitis, HIV infection.

## Résumé

Depuis l'arrivée du HIV/AIDS beaucoup d'occasions des organismes avaient démontré d'être des pathogènes potentiels chez des patients infectés. Nous présentons le rapport d'un cas des méningites filamentouse fongueuse opportunistiques causées par l'espèce des scopulariopsis chez un homme nigérian âgé de 38 ans.

## Introduction

Immunodeficiency states of which infection with Human Immunodeficiency Virus (HIV) is a leading cause has resulted in an unending list of opportunistic infection with frequent fatal outcome, including fungal agents. Apart from Cryptococcus the most common systemic fungal infection associated with AIDS<sup>1-3</sup>, other filamentous fungi like *Scopulariopsis* species are being encountered with increasing frequency<sup>4-5</sup>.

*Scopulariopsis* species are soil saprobes generally regarded as non-pathogenic, except *S. brevicaulis*, which causes onychogryphosis in immune competent individuals<sup>6</sup>. They grow well at room temperature on Sabouraud's dextrose agar as white fluffy filaments, but do not grow at 37°C. They form large ovalround gram positive spores in mammalian internal organs after systemic dissemination. The organism is differentiated from *Cryptococcus* by its negative Indian ink reaction and its inability to grow at 37°C, and from pathogenic *Candida* by being germ tube negative.

We present here the first account of *Scopulariopsis* associated meningitis in an AIDS patient from our centre.

## Case report

Mr. O. A. Hosp. No. 222234, a 38 year old civil servant resident in Ilorin first presented to us on the 5th of August, 2001 with three weeks history of fever, cough and headache. Fever was low grade, intermittent with associated chills, rigors, and night sweat. The cough was productive of whitish sputum. There was a right sided chest pain, but no haemoptysis. The headache was throbbing and generalised. There was no skin rash, diarrhoea vomiting, and no history of weight loss. He was allergic to penicillin, had about 25 pack years of cigarette smoking, and drank about 5 bottles of beer daily for about 18 years. He was married to a wife with three children.

Examination then revealed a young man, ill looking and febrile (temp. 38°C). He had respiratory rate of 34/mm, a dull

percussion note over the right lower lung zone posteriorly. His pulse rate was 120/min, regular with good volume. The blood pressure was 110/80mmHg (sitting). He was conscious with good mentation and had no meningeal irritation or lateralizing signs.

Based on clinical findings, a tentative diagnosis of right lobar pneumonia was made although both routine sputum culture and Zhiel Neelsen stain were negative. The chest x-ray (Fig. 1) showed right basal patchy consolidation with blunting of the costophrenic angle on the same side. He had a PCV of 35%. WBC of  $4.0 \times 10^9/L$  with a relative lymphocytopenia of 29%, Neutrophils of 59% while Monocytes, Basophils and Eosinophils accounted for 12%. The Erythrocyte sedimentation rate was 22mm/hr.

A treatment of oral Azithromycin 500mg daily and 1 gm paracetamol three times daily for 3 days produced minimal improvement. Three weeks later, patient represented at the emergency ward with worsening of previous symptoms in addition to neck stiffness, non-projectile vomiting and intermittent convulsions. On examination, he was found to be conscious with neck stiffness, positive Kerning's sign, pallor, sweaty, cold extremities and a temperature of 38°C. He had palpable right axillary lymphadenopathy.

An impression of septicemia with a focus in the lung was entertained and a lumbar puncture was performed because of meningeal signs. The C. S.F was colorless but under pressure. Further analysis revealed sugar concentration of 2.3mmol/l, protein content of 26mg/dL and no significant white blood cell counts. A preliminary Gram stain of C.S.F deposit showed large gram-positive cocci (Fig. 2), and a florid growth of yeast like organism in culture on Sabouraud's dextrose agar slant incu-



Fig. 1 *Scopulariopsis* associated meningitis in adult Nigerian.

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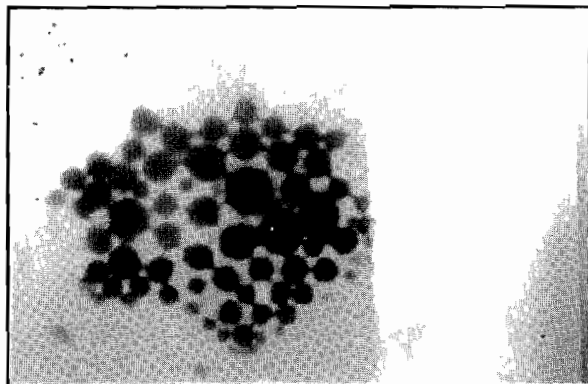


Fig. 2 *Conidia of scopulariopsis species from the CSF of an AIDS patient observed in a Gram stain*

bated at room temperature. The isolate was identified by a combination of morphological, biochemical and growth characteristics as *Scopulariopsis* species. A random blood sugar of 8.0mmol/L was obtained. Consequent on these findings, a lentiviral test was performed and the result was positive for HIV I and II. Patient was then started on intravenous amphotericin B 100mg in 1 liter of 5% Dextrose over 6 hrs after a test dose. He remained conscious on this treatment for 48 hrs, became restless for 24hrs and there after lapsed into coma. He later died on the 7th day of admission.

### Discussion

The clinical features in this patient was persistent headache, fever, and cough with clinical evidence of right lung consolidation. Symptoms of meningeal involvement were only observed at the terminal end of his disease. Rarely does the spread of fungal infection to extrapulmonary sites occur unless the patient is immunocompromised, debilitated or afflicted with chronic metabolic disorder<sup>7</sup>. The evidence of exposure to human immunodeficiency virus was obtained in our patient. A duplicate testing of patient's serum by Elisa on Genic II HIV-1/HIV-II kit of Sanofi Pasteur was reactive. The presence of a homogeneous population of fungal structures in an otherwise anatomically sterile site raised the index of suspicion of a compromised immune status of our patient.

Opportunistic fungal infections are known to herald manifestations of acquired immunodeficiency syndrome (AIDS)<sup>8</sup>. The colonial morphology of the isolate in this case, its growth rate and pattern, as well as the characteristic microscopic features are consistent with that of the filamentous fungus, *Scopulariopsis*.

The initial pulmonary infection in the great majority of fungal infections is self-limiting. The potentially fatal nature of

the disease caused by this fungus when the host defences are altered has been revealed in two recent accounts – one, of invasive sinusitis in a patient with leukemia and the other, a brain abscess in a patient undergoing chemotherapy prior to bone marrow transplantation<sup>9,10</sup>.

It is believed that this report constitutes the first case of isolation of *Scopulariopsis* species in a patient found positive for antibodies against AIDS virus in our centre. The isolation of this fungus from the CSF of our patient underscores the importance of considering all filamentous fungi recovered from clinical specimens as potential pathogens.

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