

Candida meningitis in a suspected immunosuppressive patient – a case report

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Summary

Meningitis due to fungal agents represents an AIDS-defining event and occurs typically with very low CD4+ lymphocyte count. *Candida meningitis* is still a rare clinical condition, although it is becoming frequently reported in the background of immune suppressive states such as: drug addicts, cancer patients, organ transplant recipients and HIV/AIDS patients. In this report we highlight a case of candida meningitis, in a 25-year old female patient. She presented with vulva swelling, vaginal discharge and fever, with rapid progression to tonic-clonic convulsions and loss of consciousness. She fully recovered after treatment with fluconazole.

Key-words: *Candida albicans* - Meningitis-Immunosuppression-HIV-Opportunistic

Résumé

Méningite provoquée par des agents de la mycose constitué un événement qui détermine le IDA et arrive typiquement avec un niveau du CD4+ compte de lymphocyte très bas. Méningite candida demeure toujours une condition clinique très rare, quoique elle soit rapportée fréquemment dans le début d'état d'immuno suppressif tel que: toxicomane, cancéreux, receveurs, et patients séropositifs. Dans cette étude, nous soulignons un cas de la méningite candida chez une patiente du sexe féminin âgée de 25 ans. Elle s'est présentée atteinte du gonflement de la vulve, pertes blanches, et la fièvre avec une progression rapide à la convulsion tonique-clonique et perte de la conscience. Elle était tout à fait remis après la prise en charge avec fluconazole.

Introduction

In the Sub-Saharan Africa more than 30 million people are suspected to be living with HIV/AIDS¹. People with advanced HIV infection are vulnerable to infections or malignancies that are called "opportunistic infections" because they take advantage of the opportunity offered by a weakened immune system^{2,3,4,5}. Opportunistic infections result in significant morbidity and mortality for people living with HIV/AIDS, one of which is meningitis⁶. Meningitis means inflammation of

the meninges, which are the membranes covering the brain and the spinal cord⁷.

Meningitis in immunocompromised state may not present with the typical clinical features as seen in the general population^{6,8}. One meta-analysis reported stiff neck in 50% of cases of non-AIDS meningitis and in 22%, 31%, 37%, and 44% of cases of meningitis in AIDS patients in four different studies⁹.

Many people have been exposed to fungal infections at some time during their lives, but the immune system usually stops the fungi from causing illness. When HIV infection weakens the immune system, then fungi could cause illness. Cryptococcosis is the most common systemic fungal infection associated with HIV/AIDS, and the most frequent illness caused by this fungus is cryptococcal meningitis^{9,10}. Other fungal infections of the central nervous system, though rare, are presently being reported worldwide¹¹⁻¹³. We report here a case of candida meningitis that initially did not respond to antibiotics. The diagnosis of systemic candidosis was made as a result of profuse growth of the fungi in cultured specimen of urine and vaginal discharge. Subsequent commencement of oral fluconazole resulted in marked improvement in patient's clinical condition.

Case report

Miss OOM, was an unmarried hairdresser who presented to the maternity wing of the University of Ilorin Teaching Hospital with a 3-day history of fever and left vulval swelling followed by generalized tonic-clonic seizures of 2 days duration. The fever was low grade, intermittent with no chills and rigor. The vulval swelling was intensely painful and later ruptured spontaneously. On the day of presentation, the patient developed generalized tonic-clonic seizures that were not preceded by aura, and associated with sphincteric impairment. After the initial convulsion the patient became unconscious. Within a space of 6 hours, she had experienced up to six episodes of generalized tonic-clonic convulsions, each lasting between 15-20 minutes. Patient was not a known epileptic and there was no family history of epilepsy. She was not on any immune suppressing medication. Patient had been noticed to be losing weight about 8 months before presentation with on-and-off passage of loose stool that was neither mucoid nor blood stained.

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She had a similar vulval swelling three and half months earlier, which resolved spontaneously. She gave a history of multiple sexual partners and had procured an abortion 3 years earlier. Patient subsequently had another pregnancy, which though she carried to term but the baby died three days after delivery from an unknown ailment. She was pale and febrile to touch (temperature of 39.0°C). There was submandibular lymph nodes enlargement and was unconscious with Glasgow coma score of 3/15. The peripheral pulse rate was 122 beats per minute and her blood pressure was 130/100 mmHg. Significant neurologic findings were: neck stiffness, positive Kernig's and Brudzinski's signs. There was generalized muscle hypotonia with depressed deep tendon reflexes, and mild pupillary dilatation, which reacted sluggishly to light. There was suprapubic tenderness with purulent white vaginal discharges. Other systemic examination findings were unremarkable. The impression at presentation was meningitis with Bartholin's abscess in a suspected HIV infected patient.

The packed cell volume was 21%, total WBC was 10,000/cc (differentials of Neutrophils-68%, Lymphocytes-22%, and Eosinophils-10%), with toxic granulations and ESR of 69mmHr. No malaria parasite was seen on blood film. Random blood sugar was 6.0mmol/dl. The serum biochemical results were within normal limits. Urine microscopy, culture and sensitivity came out with a profuse growth of *Candida albicans* with numerous WBC. Blood culture grew no organism. Culture of vaginal swab gave a moderate growth of *Candida albicans* while the microscopy showed scanty pus and yeast cells. Results of CSF culture on Sabouraud's agar grew the same organism with WBC of 16/HPF and RBC 8,480/HPF. Patient was unable to carry out screening test for HIV infection due to financial constraint amongst other reasons. She was empirically started on triple antimicrobial agents including intravenous Metronidazole 500mg every 8 hours, and Ciprofloxacin 400mg 12 hourly that was subsequently changed to Ceftriazone 1gm 12hourly for 72hours with no appreciable improvement. After obtaining the laboratory results she was commenced on oral fluconazole 200mg 12hourly (since relative could not afford the cost of intravenous infusion) and nystatin vaginal pessaries 2 tablets twice daily. After the 3rd day, patients showed marked clinical improvement, became afebrile, Glasgow coma score rose to 13/15 with complete cessation of seizures. Due to a marked improvement in patient's clinical condition, she discharged herself after 15 days of admission and has since been lost to follow up and further assessment. Specific treatment with antiretroviral agents could not be instituted in this patient because of the prohibitive cost of these medications as of the time of her admission. Even the HIV status and the CD4+ counts were yet to be determined, her clinical condition was supportive of a likelihood of HIV/AIDS.

Discussion

Systemic fungal infection in the background of immunosuppression is common^{4,13,14}, and in some instances herald clinical manifestation of AIDS¹⁵. Under depressed immunity, fungal meningitis may present with absence of the classical symptoms of meningitis or meningoencephalitis different from the general population. The CSF may also show little or no abnormalities with respect to cells, protein and glucose content⁷. Therefore a high index of suspicion is necessary to make the diagnosis of fungal meningitis. Recently, a case of Scopularopsis meningitis was reported at our center¹¹.

In the case highlighted here, there were evidences of vaginal candidosis and urinary tract infection. Although the lumbar puncture was traumatic, the CSF and urine cultures grew *Candida albicans*. Due to financial constraint, HIV screening test could not be done. However, clinical presentation raised a high possibility of HIV infection. Serum glucose excluded diabetes mellitus.

Cryptococca meningitis is the most frequent systemic fungal infection in HIV-infected persons¹⁴. It occurs in about 5-7% of AIDS patients in USA with mortality close to 20%⁹. Without treatment, life expectancy is probably less than a month⁶.

Meningitis due to *Candida species* is not so common, and the most frequent isolate is *Candida albicans* in about 54%-65% of cases^{9,16,17}. Others include *C. parapsilosis* -23%, *C. tropicalis*-15%, *C. krusei* -8%¹⁷. Meningitis due to *Candida albicans* is a rare disease that is seen mostly in neonates, neurosurgical patients, and cancer patients as well as in other immunocompromised states^{3-5,16,18}. There are 2 main types of candidiasis in HIV patients (of the mouth and throat, as well as the vagina) and systemic disease (of the esophagus, and disseminated disease). The mouth and throat variant (oropharyngeal candidiasis or OPC) is believed to occur at least once in the lifetime of all HIV-infected patients. While OPC is not a cause of death, it causes oral pain and makes swallowing difficult. The occurrence of candida meningitis in this patient, although her HIV status is unknown, supports a clinical diagnosis of HIV/AIDS since meningitis due to fungal agents represents an AIDS-defining event which occurs typically with very low CD4+ lymphocyte counts⁹. The response of our patient to oral fluconazole (200mg twice daily), a first line new triazole antifungal drug is not surprising. Fluconazole has been shown to have the best pharmacokinetic profile and with the least incidence of adverse effects among all the systemic antifungal agents available today^{15,19-22}. Therefore in HIV patients with meningitis but where the CSF picture does not support a bacterial etiology, fungal infection should be considered a possibility where this organism is isolated from a secondary site.

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