Case report

Report of Amphotericin-resistant Cryptococcus in undiagnosed HIV-infected patient with pulmonary and central nervous system involvement

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Abstract
In this article we reported 49 year old woman with Amphotericin-resistant Cryptococcus in undiagnosed HIV-infected patient with pulmonary and CNS involvement. We concluded simultaneous involvement of lung and meninges, particularly in immune compromised and HIV infected individuals should be considered.
Keywords; Cryptococcus, HIV, Amphotericin

1. Introduction

Cryptococcal meningoencephalitis (CM), caused by the fungus C. neoformans, considered as main cause of mortality in HIV-infected individuals worldwide (1). HIV-associated CM is defined by a paucity of inflammation and a large fungal burden in the cerebrospinal fluid (CSF) (2,3). Also there are altered mental statuses and a slow rate of fungal clearance upon medication is correlated with acute mortality (4,5,6). The source for Cryptococcal infection is through inhalation of cryptococcal spores or desiccated yeast cells into the lung, where the fungus is either cleared or maintained in an asymptomatic latent state by effective host immunity (7). In this paper we reported a novel case of Amphotericin-resistant Cryptococcus in undiagnosed HIV-infected patient with pulmonary and CNS infection.

2. Case presentation:

A 49 years old lady was referred with complaints of fever , headache and weight loss from 3 months ago that was exacerbated in recent days and vomiting was added. The patient had no complaints except for severe headache. IN our examination, she was afebrile and there were no signs of meningeal irritation and involvement of the respiratory system. She was no disease other than hypothyroidism who was taking medication. She was hospital cook and her husband was IV drug user. In our workup: the patient had anemia and neutropenia, and in chest X ray (CXR) a thick wall cavitary lesion in middle zone of right lung was obvious. Lung CT-scan was performed and shown a cavity with surrounding infiltration in peripheral of right middle lobe. Sputum smear for acid fast basil (AFB) in 3 times and also PPD test was negative. Another lab data and abdominopelvic sonography was normal. Due to severe headache and lack of signs of meningeal involvement and according to consult with neurologist, Brain magnetic resonance imaging (MRI) was done that was reported normal. Lumbar puncture (LP) was performed for patient and cerebra spinal fluid (CSF) sample was obtained for cellular analysis, smear and culture, evaluation of sugar and protein, adenosinedeaminase (ADA) , Zn and Indian ink staining , polymerase chain reaction (PCR) for Mycobacterium tuberculosis and cytology (figure 1,2a,2b,3) .

Figure 1. The chest x ray of the patient

Figure2a. Patient brain MRI

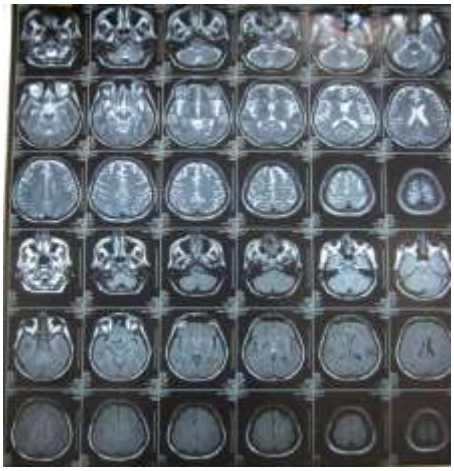

Figure2b. Patient brain MRI

Figure3. The result of anti-bio gram

Result of first lumbar puncture (LP) was WBC =600 , RBC =10/000 , Poly =17% , Lymph =83% , Pro =72 , Sugar =38 , Blood Sugar =100 , Blood pro =7/8 g/dl

Results of the second LP after 48 hrs. was:

WBC =10 , RBC =175 , Poly =10% , Lymph =90% , Pro =41 Sugar =44, Blood Sugar = 95 , Blood Pro =5/7 g/dl .

The results of CSF analysis had shown a lymphocytic pleocytosis with decreased sugar and increased protein level. In indian ink staining was seen Cryptococcus in a high level. The HIV test was positive. CSF sample was sent for determination of Cryptococcus species and antibiogram and then antifungal medications with Amphotericin B and Flu cytosine was initiated for patient immediately. Flucytosine was not available and because of that, Fluconazole was added to medications. LP was done in 2 times that there was no difference between their indexes. One week after admission and in our fallow up, patient became unconsciousness and monocular mydriasis was seen. Because of this event, we added Dexamethasone and serum manitol to her medications. One day later, with more reduction of patients' consciousness and because of apnea, the patient was intubated. In result of antibiogram , Amphotericin-resistant Cryptococcus was reported and the patient was expired despite our full effort .

3. Discussion:

Cryptococcal meningitis (CM) infects an estimated 957,900 cases annually, leading approximately 624 700 deaths annually.(8)

In Uganda, CM mortality is about 20% to 39% despite access to ART,(9,10) with only 40% alive after 6 months.(11) similar experience in South Africa showed in-hospital mortality near 30%, and 6-month survival of 40–60%.(8,12)

The incidence of CM among patients with AIDS remains between two and seven cases per 1,000 subjects, with a mortality rate as high as 12% (13).

Late presentation is an important issue for these cases in the United States, with 38% of cases newly detected with HIV infection receiving an AIDS diagnosis concurrently or within the next year; these "late presenters" are more likely to be diagnosed and to die from preventable opportunistic infections, including CM.(14)

In this study we indicated a woman with Amphotericin – resistant Cryptococcus which show us we should consider all susceptible cases due to high rate of mortality.

We concluded that in the cases of simultaneous involvement of lung and meninges, particularly in immune compromised and HIV infected individuals should be considered. Fungal meningitis needs rapid diagnosis and immediate antifungal therapy. Also according to report of Amphotericin – resistant Cryptococcus, combination antifungal therapy and use of the alternative therapy should be considered.

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