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Case Report

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Fatal case of cryptococcal meningitis and pneumonia in HIV-infected child - case report

Abstract

Cryptococcosis is an infrequent but treatable opportunistic infection of HIV-infected children. The diagnosis of HIV in this case was not clear at admission but clinical history was consisted of several typical signs like body weight loss, recurrent temperature, episode of severe bacterial disease. In all patients with fever, headache, meningismus and CD4+T-lymphocyte deficiency should be suspected cryptococcosis.

Keywords: cryptococcus, meningitis, children, human immunodeficiency virus

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Liudmyla Zakordonets, Vitalii Iyvtushenko, Sergiy Kramarov

Department pediatrics infectious diseases, Bogomolets National Medical University, Ukraine

Correspondence: Sergiy Kramarev, Chief of the Department of Children's Infection Diseases Bogomolets National Medical University, 23A Degtyarevskaya str. Kyiv, Ukraine, Tel +38-044-483-74-62, Fax +38-044-483-38-41, Email skramarev@ukr.net, lzakordonets2@gmail.com

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Abbrevations: CNS, central nervous system; HIV, human immunodeficiency virus; AIDS, acquired immuno deficiency syndrome; CM, Cryptococcal Meningitis; CSF, cerebro-spinal fluid; ESR, erythrocyte sedimentation rate

Introduction

Cryptococcosis is one of the most common infections in AIDS and disseminated cryptococcosis occurs in about one-third of AIDS patients.[1,2] From 2 to 53% of AIDS patients develop cryptococcal meningitis as their first AIDS defining disease.[3–5] Among pediatric patients incidence of cryptococcal meningitis relatively rare and reported in range 0,85-2,97%.[6–8] While disease is not common in children, it remains an important cause of morbidity and mortality.[9]

Case

A 14-year-old boy was admitted to our hospital with complaints of fever to 40,0^{0}C, severe headache, loss of appetites, vomiting. Over the preceding 60days, the patient had recurrent temperature, diarrhea, lost of 15kg of body weight. Patient had a one episode of pyelonephritis a month ago. There was no history of any chronic illness. On admission clinical examination showed temperature of 38,5°C, pulse rate–90beats/min, blood pressure -120/90mm Hg, respiratory rate-20/min and physical examination revealed no respiratory and cardiovascular system abnormalities. All groups of lymph nodes were enlarged to 2,5cm, liver was enlarged to 2,0cm, spleen – to 5,0cm. Meningeal sings were positive. CITO test HIV ½(Pharmasco) was positive. CSF analysis: protein- 0.36g/L, sugar-2,39mmol/L, cell count- 5×10^6cells/L (all – lymphocytes). Blood analysis: leukocytes count to 5,0x10^9/L, with 10% bands, 67% segments, 13% lymphocytes, 4% eosinophils, and 6% monocytes, Hb-120g/L, ESR-10mm/hr. Liver function tests, kidney function tests, urine analysis were within normal levels.

On day 4 was worsening of general condition: appeared generalized tonic-clonic seizures, score of E4V5M6 on Glasgow Coma scale, pulse 59beats/min, blood pressure -144/88mm Hg, respiratory rate-18/min, persisted meningeal sings, decreased level of hemoglobin, erythrocytes, thrombocytes. Gram's stain of CSF and blood showed Gram-positive budding yeast-like structures (Figure 1). CSF and blood were cultured by standard procedures. Creamy white colonies were seen on Sabouraud dextrose agar medium. The identification and pathogenicity of *Cryptococcus neoformans* was established by growth at 37^{0}C, urease production and mouse pathogenicity test. Sputum was also cultured which was negative for *Cryptococcus neoformans*. Sputum sample for AFB staining was negative. Western Blot test for HIV-1 was positive. Chest X Ray and CT showed patchy nodular consolidation of right middle lobe. CD4 counts were 6,5cell/mcL, CD4/CD8–0,05. The patient was given amphotericin B (0.7-1mg/kg per day) and fluconazole (12mg/kg/day) from 3-rd day of hospital treatment.

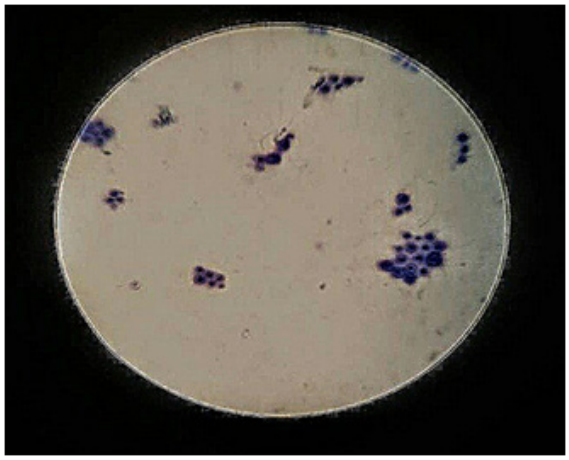

Figure 1 Gram's positive budding yeast-like structures seen in gram's stain of CSF.

Despite intensive treatment, signs of multiple organ dysfunction syndrome intensified. The therapy was unsuccessful: the patient died during the 23rd day of treatment.

Discussion

Cryptococcosis is an infrequent but treatable opportunistic infection of HIV-infected children. The diagnosis of HIV in this case was not clear at admission but clinical history was consisted of several typical signs like body weight loss and episode of severe bacterial disease. In view of all these findings, a sample for HIV was

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taken and found to be reactive. According to the available review cryptococcosis in children often presents with subtle and non-specific findings, such as fever and headache, and typically evolves over days to weeks with fever and headache.[7] But clinical symptoms in this case were clearly indicative of meningitis and characterized by rapid neurological deterioration. CD4+T-lymphocyte deficiency is one of a main predisposing factors of cryptococcosis, especial meningitis, and in this boy CD4 count was found to be significantly decreased (6,5/mcL). Initial antifungal treatment of cryptococcal meningitis according to the recent guidelines includes amphotericin B (with or without flucytosine) and fluconazole.[10] However, disease often be fatal even proper treatment is timely determined.[11] This case also was associated with treatment failure despite early recognition of cryptococcal infection and using of approved medicines.

Conclusion

Cryptococcal meningitis may occurred as early presentation in children with HIV infection. In all patients with fever, headache, meningismus and CD4+T-lymphocyte deficiency should be suspected cryptococcosis.

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None.

Conflict of interest

The author declares no conflict of interest.

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