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CNS cryptococcoma in an HIV-positive patient

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Abstract

This is the first case of brain cryptococcoma in an AIDS patient reported in Argentina. The patient was a 28-year-old white heterosexual man with AIDS who presented with altered mental status, seizures, visual hallucinations, headache, and fever without significant focal neurological deficit. He had a lumbar puncture, and was treated for cryptococcal meningitis. Subsequent brain CT scanning and MRI disclosed a mass lesion in the occipital lobe. Histopathological examination of biopsy was compatible with cryptococcoma, and tissue culture revealed *Cryptococcus neoformans*. Resolution of the mass and edema resulted after treatment with intravenous amphotericin B for six weeks, which was followed with maintenance oral fluconazole.

Intracranial mass is an uncommon complication in AIDS patients with cryptococcosis, and cryptococcoma should be considered as differential diagnosis of brain mass lesion in these patients. The etiologic diagnosis is necessary because central nervous system (CNS) toxoplasmosis, lymphoma, and tuberculoma can produce similar clinical syndromes and MRI or CT findings to cryptococcoma. Also, these pathologies may coexist with meningeal cryptococcosis.

Key words: *cryptococcoma, HIV infection, central nervous system, neurologic complications*

Introduction

Cryptococcosis is the most frequent systemic mycosis observed among AIDS patients at the Francisco J Muñiz Hospital in Buenos Aires, Argentina, where approximately 100 new cases are diagnosed annually. Its prevalence is 15 percent of HIV/AIDS cases.¹

Cryptococcal infection of the CNS may produce symptoms and signs of meningitis, meningoencephalitis, or manifest as single or multiple space-occupying lesions with focal neurologic deficit, which is referred to as cryptococcoma.^{1,2} Three different forms of focal lesions have been described as intracerebral abscesses, gelatinous pseudocysts, and rarely septated lesions within the intraventricular spaces around the choroid plexus.²

Cryptococcosis is present in most AIDS patients at our hospital as meningitis or meningoencephalitis with clear cerebrospinal fluid (CSF), and is only occasionally observed as mass, or space-occupying lesion.³ We report on an HIV-positive patient with cryptococcal meningitis and CNS cryptococcoma, diagnosed by microscopy and cultures of tissue after stereotactic brain biopsy.

Case report

A 28-year-old white heterosexual man with a history of intravenous drug use had been diagnosed with HIV infection eight years earlier. He became ill two weeks prior to his admission with symptoms of fever, severe headache, visual hallucinations, seizures, and altered level of consciousness. At the time, his medications included double-strength trimethoprim-sulfamethoxazole tablets three times weekly. His only previous opportunistic infection had been tuberculosis.

Physical examination showed reduced alertness, hepato- and splenomegaly, pseudomembranous oropharyngeal candidiasis, hairy leukoplakia, tachycardia, and fever. Kernig, Brudzinski, and Romberg signs were negative, and the Babinski reflex and nuchal rigidity were absent. Pupils were equal and reactive. There was no papilledema. Skin sensation, reflexes, muscle tone, and cranial nerves were intact. Deep tendon reflexes were normal without clonus.

Blood chemistry was unremarkable except for a white blood cell count of 2,100/ μ L, and hemoglobin of 10.9 g/dL. CD4 lymphocyte count was 28 cells/ μ L, and HIV-1 plasma viral load greater than 750,000 copies/ μ L. Lumbar puncture was done. The CSF fluid was under

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CT and MRI have revolutionized the diagnosis and management of CNS mass lesions. The radiological evaluation of the lesions included both CT scan and MRI with gadolinium enhancement, that are shown to be more sensitive than a standard MRI in identifying focal brain lesions of specific cause, or in the evaluation of patients with meningeal findings when other studies are inconclusive. Contrast enhancement is also beneficial in differentiating a mass lesion from surrounding edema in preparation for a stereotactic biopsy, and in defining multiple lesions that may not be apparent or that appear as solitary lesions on a CT scan.¹³

Our patient had a subacute presentation of illness. CSF was negative for *Toxoplasma gondii* DNA by polymerase chain reaction (PCR). The lesion did not have a typical appearance of a lymphoma or a metastatic carcinoma, and there was no evidence of a primary tumor outside the CNS. We considered *Mycobacterium tuberculosis* and non-tuberculous mycobacterial infections in the differential diagnosis, particularly in this setting of HIV and past tuberculosis. Mycobacterial abscesses are also frequently multiple and occur in the setting of meningitis or disease outside the central nervous system.^{1,14,15} We performed the stereotaxic procedure to obtain the etiologic diagnosis because of the similarity among the lesions produced by different etiologic agents in the brain, the occasional concomitance of these various lesions, and a lack of initial therapeutic response observed in our patient.

Delay in specifically diagnosing a treatable space-occupying lesion can lead to increased mortality. When assessing these patients, it is important to remember that HIV patients may have concomitant conditions with a variety of noninfectious and infectious diseases that mimic cryptococcoma (eg, toxoplasmosis, lymphoma, tuberculosis). Parasitic causes such as Chagas' disease (*Trypanosoma cruzi*) deserve inclusion, despite being an unlikely pathogen, because they can occur in South America.¹⁶ Biopsy may be helpful in certain contexts, such as lack of a specific diagnosis, or likelihood of identification of a specifically treatable second condition. This case illustrates the presentation, diagnosis, and course of treatment of cryptococcal meningitis with cryptococcoma in AIDS. ■

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