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Case Report

Delirium as a Symptom of Previously Asymptomatic HIV Patient with Brain Toxoplasmosis - Case Report and Review of Literature

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Abstract

Introduction: Studies suggest AIDS-associated CNS illnesses are in many instances underdiagnosed. The incidence of opportunistic illnesses, such as brain toxoplasmosis, among HIV infected patients tends to grow as patients become ever more asymptomatic even when not in use of HAART. We report the case of a 33-year- old male who presented with sudden acute confusional state due to opportunistic toxoplasmosis in a HIV+ condition. Patient tested positive for HIV and Toxoplasmosis IgG. Treatment was started with oral corticosteroids, IV Bactrim, and HAART. After remission of symptoms, fever started to pick up probably due to progressively lower corticoid dosage being administered. After a follow-up, patient showed remission of symptoms. If not appropriately linked to an opportunistic toxoplasmosis infection in a HIV active state, an acute confusional state might go unrelated and not allow for a correct and early diagnosis. Acute confusional state symptoms, even without full motor or sensitive involvement must raise a flag for possible infectious origin, as this disease without proper treatment increases patient morbidity and mortality.

Keywords: *CNS Infectious Disease; HIV; Toxoplasmosis; Delirium; Acute Confusional State*

Abbreviations

HIV: Human Immunodeficiency Virus; IV: Intravenous; HAART: Highly Active Antiviral Therapy; IgG: Immunoglobulin G

Introduction

Studies suggest AIDS-associated CNS illnesses are in many instances underdiagnosed [1-4]. The incidence of opportunistic illnesses, such as brain toxoplasmosis, among HIV infected patients tends to grow as patients become ever more asymptomatic even when not in use of HAART [5]. Acute confusional states (delirium) in young patients are clinical challenges as they span a large array of differential diagnosis, especially if the HIV infection is not previously known. Delirium is more commonly seen in the elderly [6], characterized by an acute fluctuating impairment of cognitive functions and inattention. Recognition and prompt etiology treatment is crucial to decrease the mortality associated with delirium in HIV positive patients. Delirium may be the result of a variety of systemic, cerebral diseases or even due to drug intoxication and/or withdrawal, but sometimes it is due to a hidden infectious agent such as *Toxoplasma gondii* [7].

Case Report

A previously healthy 33-year-old male presented with sudden acute confusional state. A holocranial headache had started six months before, but for the first time it was accompanied by space disorientation, however with no time disorientation nor motor deficit present.

Patient had no significant findings on physical examination. Computerized Tomography (CT) scan showed hypodense lesion exerting a discrete mass effect on the left hemisphere, nonspecific capsule-nuclear region, justifying immediate further investigation with magnetic resonance imaging (MRI). The first MRI was suggestive of intra-parenchymal hemorrhage in the left cerebellar hemisphere (Figure 1). Other possible etiological factors, i.e. hepatitis B and C, and/or meningitis were also excluded due to unspecific elevated protein count in cerebrospinal fluid. Patient tested positive for HIV, both in rapid and supplemental tests, and positive for toxoplasmosis IgG antibody. Treatment administered involved oral dexamethasone and intravenous trimethoprim/sulfamethoxazole (Bactrim®) - due to unavailability of sulfadoxine/pyrimethamine (Fansidar®) - and patient also started on a highly active antiretroviral therapy (HAART). Eight weeks after the first MRI and initiation of treatment, a second brain MRI showed multiple focal lesions in both cerebellar hemispheres (Figure 2) and also in the left cerebral hemisphere (Figure 3,4). Add another four months and a third MRI follow-up (Figure 5, 6) showed that those same lesions were better defined and with less perilesional edema than those in the first and second MRI exams (Figure 1-4), with an also stronger contrast enhancement in their periphery in T1, showing some radiological improvement. Patient also showed clinical remission of symptoms at this time.

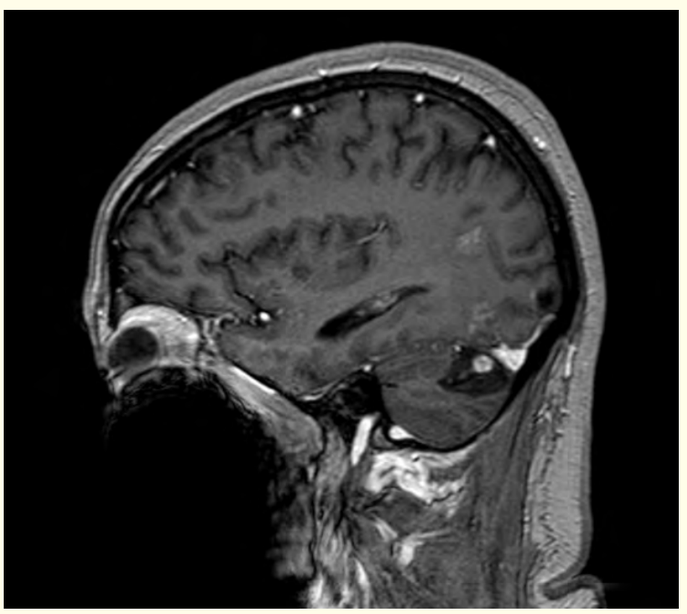

Figure 1: *Sagittal T1-weighted MRI suggestive of intra-parenchymal hemorrhage in the left cerebellar hemisphere.*

Figure 2: *Axial T2-weighted MRI suggestive of multiple focal hyperintense lesions in both cerebellar hemispheres.*

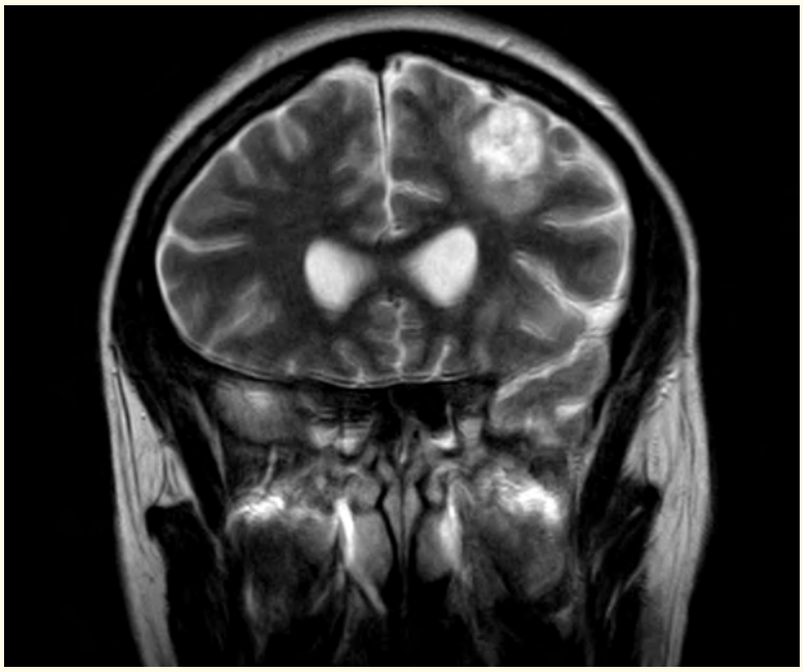

Figure 3: *Coronal T2-weighted image showing an irregular hyperintense lesion in the left frontal lobe. The mass is surrounded by perilesional edema. Lateral ventricles are dilated ex-vacuum. Inferred global brain atrophy beyond what is expected for patient's age.*

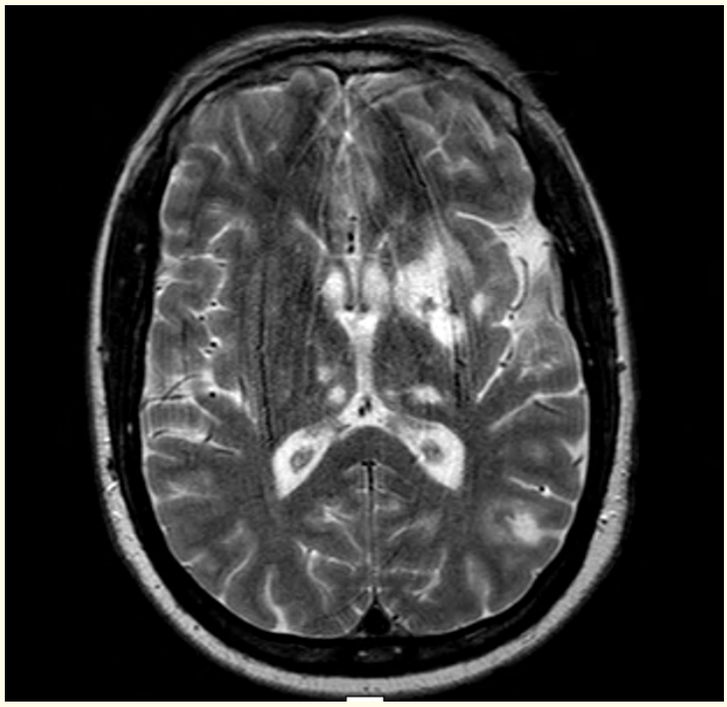

Figure 4: *Axial T2-weighted image showing an irregular hyperintense lesion in the left capsule-nuclear region. Lateral ventricles are dilated ex-vacuum. Inferring global brain atrophy beyond what is expected for patient's age.*

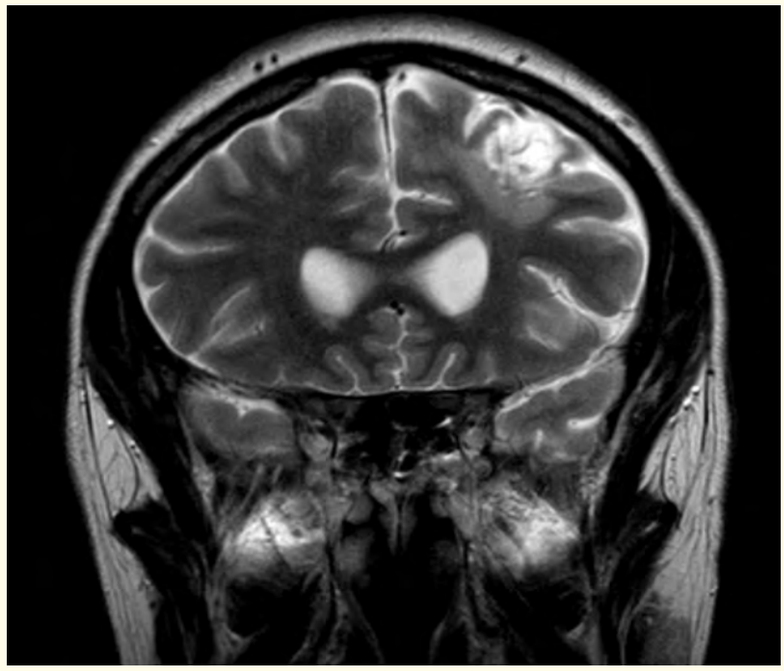

Figure 5: *Coronal T2-weighted image showing an irregular hyperintense lesion in the left frontal lobe. The mass is better defined and surrounded by diminished perilesional edema. Lateral ventricles dilation remains as does brain atrophy beyond what is expected for patient's age.*

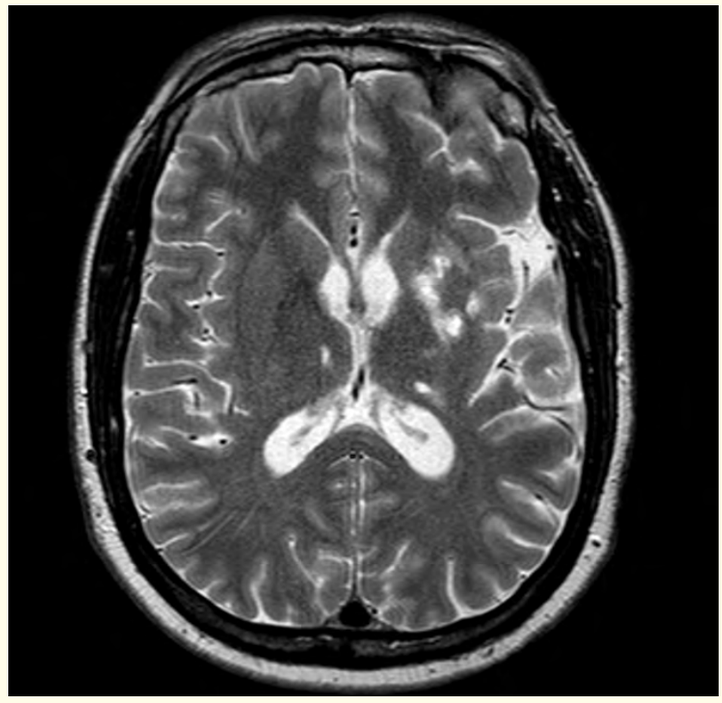

Figure 6: *Axial T2-weighted image showing an irregular hyperintense lesion in the left capsule-nuclear region. The mass is better defined and surrounded by diminished perilesional edema. Lateral ventricles dilation remains as does brain atrophy beyond what is expected for patient's age.*

Results and Discussion

If not appropriately linked to an opportunistic toxoplasmosis infection in a highly active HIV state, delirium might go unrelated and hence not allowing for a correct and early diagnosis of the hidden infection. Acute confusional state symptoms, even without full motor or sensitive involvement must raise a red flag for possible infectious origin, as such diseases without proper treatment increase patient morbidity and mortality. Unfortunately, younger patients have become more likely to present with asymptomatic advanced immunodeficiency as patients are increasingly less afraid of AIDS onset and do not screen for HIV as frequently as they did in the past decades [5,8]. So advanced that associated infections such as toxoplasmosis have become gradually more dangerous as diagnosis becomes harder and at a later time with HIV present.

In addition, in 50 to 80% of cases, the brain toxoplasmosis radiological findings of this case report can be very similar to brain lymphomas [9], adding to the confusion. Typically, lymphoma is solid whereas toxoplasmosis demonstrates ring or nodular enhancement [9], as was the case. However, in HIV patients those with primary brain lymphoma may also demonstrate ring enhancement. But regardless of enhancement, haemorrhage was present in this case, and as it does not typically happen in patients with brain lymphomas before treatment, it does in toxoplasmosis cases, a finding that can help differentiate between them. And lastly, multiple lesions as seen in MRI (Figure 1-6) speak in favor of toxoplasmosis and not in favor of a singular brain lymphoma lesion [9].

Conclusion

Delirium is an unspecific symptom for brain toxoplasmosis, since non-HIV patients who have similar symptomatology and radiological findings to the ones presented here would most probably not have a brain parasitic infection. These findings highlight the need for first-care physicians to better screen their patients for HIV, as an earlier diagnosis and therapy of this viral infection may help prevent patients from developing secondary opportunistic infections with unspecific symptoms.

Conflict of Interest

Authors declare no financial interest or any conflict of interest.

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