Case Report

Persistent Limb Dystonia in a HIV Positive Patient With Cerebral Toxoplasmosis

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Abstract

We describe a HIV positive woman who developed a left forearm dystonia associated to bilateral basal ganglia lesions, proven to be secondary to cerebral toxoplasmosis as demonstrated by Brain Magnetic Resonance Imaging (MRI) and positive antibody titers. Despite treatment with antiparasitic drugs and resolution of the lesions on the MRI, dystonic features remained unchanged. However, botulinum toxin injections provided marked benefit. This case represents one of the few reported cases of persistent segmental dystonia due to basal ganglia toxoplasmosis.

Keywords: cerebral toxoplasmosis, Human Immunodeficiency Virus (HIV), limb dystonia.

INTRODUCTION

Opportunistic infections in the basal ganglia in patients with Acquired Immune Deficiency Syndrome (AIDS) can cause movement disorders, including tremor, parkinsonism, hemichorea-hemiballism, myoclonus, tics, paroxysmal dyskinesias and choreoathetosis.

We describe a 34-year-old woman, HIV positive, with segmental dystonia in the left hand and forearm secondary to cerebral toxoplasmosis lesions located in basal ganglia.

CASE PRESENTATION

The patient was admitted to the movement disorders clinic in August 2002. She had history of multiple sexual partners, and abdominal surgery at the age of 18, due to ectopic pregnancy. No other relevant information was available.

In June 1998 she abruptly developed an encephalitic episode, featuring hypersomnia, fever, cloudiness of sensorium, mutism and headache, followed by a slight left hemiparesis and focal tonic-clonic seizures 48 hours later. She was hospitalized and a brain MRI was carried out, demonstrating lesions in the basal ganglia between 2 and 30 mm diameter, showing ring enhancement with the administration of gadolinium (Fig. 1). Serum titers for Toxoplasma gondii and HIV serology were positive.

Treatment was initiated with pyrimethamine and sulfadiazine. Given the improvement achieved, she was discharged from hospital. Four months later, she developed involuntary movements of the her left hand with progressive impairment in handling objects with the left hand. She consulted our movement disorders clinic in August, 2002. Her physical exam was normal, the neurologic examination showed a cooperative patient, fully oriented in time and space. Fundus oculi were normal and visual fields full. Cranial nerve testing showed no abnormalities. Abnormal
involuntary movements involving her left arm consistent with dystonia were evident both at rest and action, severely impairing the use of the left hand. A mild mobile neck dystonia was also evident. The remainder of the neurological examination was unremarkable. Follow up MRIs showed marked improvement of the basal ganglia images (Fig. 2).

Figure 1: Bilateral basal ganglia lesions with ring enhancement are shown in the T1 weighted images, before antitoxoplasma treatment.

Figure 2: Follow up MRI after treatment, showing improvement of the basal ganglia lesions

Although several drugs proved unsuccessful to ameliorate her dystonia, botulinum toxin injections every three months in the left hand and forearm, starting in October 2002 and continuing to date, substantially improved her condition.

DISCUSSION

Dystonia is a rather frequent movement disorder secondary to sustained involuntary contractions of antagonist muscles, featuring twisting and often bizarre and at times painful movements or postures. It is usually a chronic disorder with an uncertain outcome.

Hereditary dystonia, as well as cases in which the cause is unknown exhibiting no other associated movement disorders except tremor or myoclonus are classified as primary dystonia when no structural brain lesions are present. However, dystonia secondary to diverse basal ganglia lesions is also well recognized.

Secondary dystonia cases have been resulted from damage to the basal ganglia, specially the contralateral caudate, the
thalamus and the lentiform nucleus, or a combination of these structures, as in our patient’s case. It has been proposed that the thalamic input to the premotor cortex is altered, and the same is true for the striatal projections to the globus pallidus and the thalamus. Our patient developed a left limb dystonia associated to bilateral basal ganglia lesions.

It has been shown that movement disorders related to brain toxoplasmosis benefit from antitoxoplasma therapy, but unfortunately such treatment failed to improve dystonic signs in our patient. Conversely, despite improvement in imaging studies, she developed dystonic symptoms four months after the initiation of antitoxoplasma therapy. However, based on MRI findings and positive toxoplasma antibody titers as well as on the fact that she was HIV positive, the lesion was assumed to be a toxoplasmic granuloma of the Central Nervous System since this parasite is often associated with HIV and other immunodeficient conditions.

Not uncommonly, HIV infection is related to movement disorders. More than half of the AIDS patients develop some kind of involuntary movement during the disease. It is well known that movement disorders occur in some patients with cerebral toxoplasmosis and HIV-1 infection. Curiously, while toxoplasmosis is the most frequent brain lesion associated to HIV infection, and has a marked predilection for basal ganglia, dystonia is an uncommon feature and has been only reported in a few cases.

Quite likely the critical localization of the opportunistic lesions in the basal ganglia, possibly associated to HIV related neurotoxicity may well have contributed to cause this clinical picture in our patient. However, the fact that dystonia was unilateral while the basal ganglia lesions were bilateral is difficult to interpret. In addition, persistent dystonia is unusual in patients with toxoplasmosis when they are promptly treated. The delayed onset of dystonia in our case is also rather atypical and could be explained as caused by coagulation necrosis as the sequelae of the toxoplastic lesion. While our patient failed to improve with oral medication, dystonia markedly benefited from botulinum toxin treatment.

Our case illustrates that dystonia though infrequent in AIDS patients with toxoplasmic granulomas, should be kept in mind to avoid misdiagnosis and furthermore illustrates that this movement disorder may become persistent despite adequate treatment with antiparasitic drugs.

REFERENCES


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