Psychiatric disorders in seropositive human for *Toxoplasma gondii*, with calcification in left temporal lobe - case report

Perturbações psiquiátricas em humano seropositivo para *Toxoplasma gondii*, com calcificação no lobo temporal esquerdo - relatório de caso

Trastorno psiquiátrico en humano seropositivo para *Toxoplasma gondii*, con calcificación en lóbulo temporal izquierdo - informe de caso

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**Willian Marinho Dourado Coelho**
PhD in Preventive Veterinary Medicine by Universidade Estadual Paulista (UNESP)
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: willianmarinho@hotmail.com

**Thomas Oliver Carvalho Fox**
Graduating in Veterinary Medicine
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: chrysfox2008@hotmail.com

**Bruno Freitas Rodrigues**
Graduating in Veterinary Medicine
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: bfrrodriengues095@gmail.com

**Izabela Maziero**
Graduating in Veterinary Medicine
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: Izamaziero13@gmail.com

**Luiz Henrique Ferreira dos Santos**
Graduating in Veterinary Medicine
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: lferreira@hotmail.com

**Juliana de Carvalho Apolinário Coelho**
PhD in Physiological Sciences
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: ju.apolinario@yahoo.com.br
Patrícia Raquel Basso Rosa
Master in Animal Science
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: patriciaraquelbrosa@hotmail.com

Silvia Maria Marinho Storti
Master in Animal Production
Institution: Faculdade de Ciências Agrárias de Andradina (FCAA)
Address: Andradina, São Paulo, Brasil
E-mail: silviastorti@gmail.com

ABSTRACT
The aim of this study was to report the occurrence of chronic psychiatric disorders in an elderly woman, seropositive for *Toxoplasma gondii* and with calcification formation in the left temporal lobe. The patient aged 65 years old was diagnosed with depressive disorder and panic with no obvious cause, after an episode of infection by dengue hemorrhagic fever. There were no changes in biochemical, hematological and hormonal parameters. By means of magnetic resonance imaging was detected a small calcification in the right temporal lobe. The patient was shown unresponsive to treatment with antidepressants and other therapeutic methods. Was detected in the serological analysis high titer of IgG, low titers for IgA and negative for IgM anti-*T. gondii*. Thus, neuropsychiatric disorders were described in an elderly woman seropositive for *T. gondii*, with calcification in the left temporal lobe, manifesting itself primarily in forms of depressive syndrome and panic, with poor response to treatment with antidepressant drugs and neurostimulation.

Keywords: Depression, behavior, neurotoxoplasmosis, neuroinfection, panic syndrome.

RESUMO
O objetivo deste trabalho foi relatar a ocorrência de desordens psiquiátricas crônicas em uma mulher idosa, sororreagente para *Toxoplasma gondii* e com formação de calcificação em lobo temporal esquerdo. A paciente de 65 anos foi diagnosticada com transtorno depressivo e do pânico, sem causa evidente, após ser acometida por febre hemorrágica da dengue. Não foram observadas alterações nas análises bioquímicas, hematológicas e hormonais. Por meio da ressonância magnética foi detectada uma pequena calcificação no lobo temporal direito. A paciente demonstrou-se arresponsiva ao tratamento com antidepressivos e aos demais métodos terapêuticos. Foi detectado na análise sorológica título elevado de IgG, baixa titulação para IgA e negativo para IgM anti-*T. gondii*. Deste modo, desordens neuropsiquiátricas foram descritas em uma mulher idosa sororreagente para *T. gondii*, com calcificação em lobo temporal esquerdo, manifestando-se principalmente nas formas de síndrome depressiva e do pânico, com pobre resposta aos tratamentos com drogas antidepressivas e neuroestimulação.

Palavras-chave: Depressão, comportamento, neurotoxoplasmosise, neuroinfeção, síndrome do pânico.

RESUMEN
El objetivo de este estudio fue informar sobre la aparición de trastornos psiquiátricos crónicos en una anciana serorreagente para Toxoplasma gondii y con calcificación en el lóbulo temporal izquierdo. La paciente, de 65 años, fue diagnosticada de trastorno depresivo y de pánico, sin causa evidente, después de haber sido afectada por dengue hemorrágico. No se observaron
cambios en los análisis bioquímicos, hematológicos u hormonales. La resonancia magnética reveló una pequeña calcificación en el lóbulo temporal derecho. La paciente no respondía al tratamiento con antidepresivos y otros métodos terapéuticos. El análisis serológico reveló un título elevado de IgG, un título bajo de IgA e IgM anti-T. gondii negativo. Así pues, se describieron trastornos neuropsiquiátricos en una anciana serorreagente para T. gondii, con calcificación en el lóbulo temporal izquierdo, que se manifestaban principalmente en forma de síndrome depresivo y de pánico, con escasa respuesta al tratamiento con fármacos antidepresivos y neuroestimulación.

**Palabras clave:** Depresión, comportamiento, neurotoxoplasmosis, neuroinfección, trastorno de pánico.

1 INTRODUCTION

The changes in the behavior of animals (Hutchinson et al., 1980) and humans (Webster et al., 2006) due to infection with *Toxoplasma gondii* has been widely reported by researchers worldwide. The scientific literature reports several cases of psychiatric disorders associated with human seropositive for *T. gondii*, especially schizophrenia (Yolken et al., 2001), depression (Kar and Misra, 2004), bipolar disorder (Jones-Brando et al., 2003) and psychosis (Zhu, 2009).

The aim of this study was to report the occurrence of chronic psychiatric disorders in an elderly woman, seropositive for *T. gondii* and with calcification formation in the left temporal lobe.

2 METHODS

The patient was diagnosed in 2005 with major depressive disorder and panic, without obvious cause, after being hit by a severe episode of dengue hemorrhagic fever (DHF).

Manifestations of depression, fear, fatigue, malaise, various somatic complaints, derealization, depersonalization, need to use antidepressants, isolation, restlessness, anorexia and a feeling of death are some of the symptoms related to patient.

During this period, the monitoring was done through routine testing of diagnostic imaging, biochemical analysis, hormonal and hematological.

The therapy consisted of co-administration of sertraline chloridrate (200 mg/day) and diazepam (5 mg/day), chlorpromazine (50mg/2times/day), subsequently replaced by
clonazepam (10mg/day). At the same time, the methods of electrical stimulation and transcranial magnetic stimulation were performed

3 RESULTS

By means of magnetic resonance imaging was found a small calcification in the left temporal lobe (Fig. 1).

Figure 1. Calcification in the left temporal lobe (arrow), detected by magnetic resonance imaging in a human seroreagent for *Toxoplasma gondii*.

Biochemical analysis consisted of quantification of urea, creatinine, alanine-amino transferase, aspartate-aminotransaminase, alkaline phosphatase, gamma-glutamyl transferase, thyroid and pituitary hormones, and hematological examinations. The results obtained in these analyses were all within normal limits, according to values adopted by
laboratories. During the course of DHF, was found a discret leukopenia by lymphopenia, which normalized after this period. The patient showed poor response to all treatment modalities used to date.

Serological analysis with the fluorescent immunoassay test showed the detection of immunoglobulins IgG and IgA anti-\textit{T. gondii} with titer of 45.5 IU/mL and 6.0 UA/mL, respectively. The analysis of IgM anti-\textit{T. gondii} by capture ELISA was negative. The reference values for seropositive by this method is IgG greater than or equal to 8.0 IU/mL and IgA greater than or equal to 20.0 UA/mL.

The biochemical analysis of urinary catecholamines were not conclusive, due to medical judgment of not stop the treatment with antidepressants.

Front of the inefficiency therapeutic adopted, was performed treatment anti-\textit{Toxoplasma} with Pyrimethamine (Daraprim®), initial dose of 100mg, followed by 50mg daily. Was administered concomitantly 150 mg/kg of Sulfadiazine (Labdiazina®) for four days.

After appropriate treatment for toxoplasmosis, was observed excellent response to treatment with antidepressants and neurostimulation, through the progressive regression of clinical signs and symptoms.

4 DISCUSSION

Corroborating our findings, Kar and Misra (2004) associated the occurrence of depression with the infection by \textit{Toxoplasma}, where the antidepressant therapy was effective only after adequate treatment with drugs anti-\textit{Toxoplasma}.

Hypothetically, the leukopenia by lymphopenia observed by the beginning of this report, due to the occurrence of DHF, may have promoted the reactivation of the cyst of \textit{T. gondii}, resulting in the genesis of behavioral changes observed.

Thus, neuropsychiatric disorders were described in an elderly woman seropositive for \textit{T. gondii}, with formation of calcification in the left temporal lobe, manifesting itself primarily in forms of depressive syndrome and panic, with poor response to treatment with antidepressant drugs and neurostimulation when performed without the anti-\textit{Toxoplasma} treatment, indicating the occurrence of this infection and manipulation of host behavior.
REFERENCES


