Pulmonary toxoplasmosis is a challenging diagnosis in immunosuppressed patients with nonspecific clinical picture and radiologic findings. We present a case of pneumonia due to Toxoplasma gondii diagnosed by polymerase chain reaction (PCR) in the bronchoalveolar lavage (BAL) fluid of a patient with acquired immunodeficiency syndrome (AIDS). Coinfection with Pneumocystis jirovecii was found in the same specimen. Direct examination and culture for bacteria, mycobacteria and other fungus were negative. Despite the intensive management, respiratory compromise evolved rapidly, with the need for ventilatory support. Acute respiratory distress syndrome developed, and the patient died of multiple organ failure. This case illustrates that a high index of suspicion is necessary for diagnosis of pulmonary toxoplasmosis, a potentially fatal condition. Due to high diagnostic performance, PCR in BAL fluid should be included in the evaluation of immunosuppressed patients with nonspecific pulmonary diseases.

Keywords: PCR; HIV; AIDS; toxoplasmosis; disseminated toxoplasmosis

ABSTRACT

Pulmonary toxoplasmosis is a challenging diagnosis in immunosuppressed patients with nonspecific clinical picture and radiologic findings. We present a case of pneumonia due to *Toxoplasma gondii* diagnosed by polymerase chain reaction (PCR) in the bronchoalveolar lavage (BAL) fluid of a patient with acquired immunodeficiency syndrome (AIDS). Coinfection with *Pneumocystis jirovecii* was found in the same specimen. Direct examination and culture for bacteria, mycobacteria and other fungus were negative. Despite the intensive management, respiratory compromise evolved rapidly, with the need for ventilatory support. Acute respiratory distress syndrome developed, and the patient died of multiple organ failure. This case illustrates that a high index of suspicion is necessary for diagnosis of pulmonary toxoplasmosis, a potentially fatal condition. Due to high diagnostic performance, PCR in BAL fluid should be included in the evaluation of immunosuppressed patients with nonspecific pulmonary diseases.

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**RESUMO**

O diagnóstico de toxoplasmose pulmonar em pacientes imunossuprimidos é difícil, devido ao quadro clínico e aos achados radiológicos inespecíficos. Neste artigo, relatamos o caso de uma paciente com síndrome da imunodeficiência adquirida (SIDA), que apresentou pneumonia por *Toxoplasma gondii* diagnosticada através de reação em cadeia da polimerase (PCR) no lavado bronco-alveolar (LBA). A paciente apresentava co-infeção com *Pneumocystis jirovecii*. Os demais exames microbiológicos, como bacterioscópico, cultural para bactérias, micobactérias e fungos, foram negativos. Apesar do manejo intensivo, a paciente evoluiu com síndrome do desconforto respiratório agudo e obito por falência múltipla dos órgãos. Este caso demonstra que um alto índice de suspeita clínica é necessário para o diagnóstico de pneumonia por *Toxoplasma gondii*. Devido ao seu desempenho diagnóstico, o PCR para *Toxoplasma gondii* no LBA deve ser incluído na avaliação de pacientes imunossuprimidos com quadros pulmonares inespecíficos.

**Unitermos:** PCR; HIV; SIDA; toxoplasmose; toxoplasmose disseminada

**CASE REPORT**

A 63-year-old, white, female patient was referred to a tertiary hospital because of a 2-week history of dry cough and fever. Her medical records disclosed a history of an infiltrating ductal carcinoma of the breast, stage IIIA (pT2pN2M0), resected 7 months earlier and treated with three cycles of adjuvant chemotherapy with cyclophosphamide, doxorubicin and fluorouracil (CAF). After the third cycle, 2 months earlier, she developed febrile neutropenia, which resolved after treatment with cefepime. Despite resolution of fever, incomplete hematological recovery was observed (persistent leukopenia), and chemotherapy was withheld. On admission, the patient was febrile, in breathing distress and oral thrush was noted. She had pancytopenia, hypoxemia with an elevated alveolar-arterial gradient and...
lactate dehydrogenase (LDH) of 1,590 mg/dL. Thoracic radiograph showed bilateral diffuse infiltrates. Antibiotics for coverage of community acquired pneumonia and *Pneumocystis jirovecii* infection were started. The patient developed mental confusion and underwent brain computed tomography (CT) that showed a left frontal hypodensity with discrete contrast impregnation and another hypodensity on the right thalamic region that did not enhanced on contrast imaging. Lumbar puncture showed the following results: opening pressure = 180 cmH$_2$O, leucocytes = 1/mm$^3$, protein = 30 mg/dL, glucose = 40 mg/dL (serum = 74 mg/dL), adenosine deaminase (ADA) = 3 U/L. Non-reactants venereal disease research laboratory (VDRL) and fluorescent treponemal antibody absorbed (IFI-FTABs) tests, direct examination and culture for bacteria, fungus and mycobacteria where negative. PCR for mycobacteria, toxoplasmosis, herpes zoster (HZV) and John Cunningham virus were negative. Despite the intensive management, respiratory compromise evolved rapidly, with the need for ventilatory support. Acute respiratory distress syndrome developed, and the patient died of multiple organ failure.

**DISCUSSION**

Most patients with pulmonary toxoplasmosis present with dry cough, dyspnea, and fever (1). Due to the infrequency of this clinical entity, diagnosis of pulmonary toxoplasmosis can be easily overlooked. Clinical and radiologic findings are nonspecific and cannot be distinguished from other more common opportunistic infections (6). In spite of morbidity, thoracoscopic or open lung biopsy remain the gold standards for diagnosis of extracerebral toxoplasmosis (6). In immunosuppressed patients (1,6), cases of pulmonary coinfection of *Pneumocystis jirovecii* and *T. gondii* have been previously reported (15-17). In this case, clinical deterioration with acute respiratory distress syndrome and multiple organ dysfunction syndrome could be explained by either infection (18).

This case illustrates that a high index of suspicion is necessary for diagnosis of pulmonary toxoplasmosis, a potentially fatal condition. Due to high diagnostic performance, PCR in BAL should be included in the evaluation of immunosuppressed patients with nonspecific pulmonary diseases.

**REFERENCES**


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