Letters to the Editor

Severe Toxoplasmosis Caused by a *Toxoplasma gondii* Strain with a New Isoenzyme Type Acquired in French Guyana

Disseminated toxoplasmosis with lung involvement is rare in immunocompetent patients. We describe a case with unusual epidemiological aspects associated with a new strain genotype.

A 35-year-old military man presented with malaise, fever, chills, myalgias, headache, bilateral conjunctivitis, maculopapular rash, and leukopenia \((2.3 \times 10^9/\text{liter})\) after a 4-month stay in the deep forest of French Guyana. On day 13, he developed cervical, axillary, and inguinal lymphadenopathy. Laboratory values were as follows: leukocyte count, \(6 \times 10^9/\text{liter}\) (41% neutrophils, 51% lymphocytes, 8% monocytes); aspartate aminotransferase, 125 U/liter; alanine aminotransferase, 113 U/liter; proteinuria, 312 mg/24 h; and cytorachia, 12 cells/mm\(^3\) (95% lymphocytes). On day 15, he developed diarrhea and rales at the base of the right lung. Despite amoxicillin-ofloxacin therapy, he developed respiratory failure with bilateral pulmonary infiltrates on day 17. Numerous *Toxoplasma gondii* trophozoites were detected by immunofluorescence assay in bronchoalveolar lavage fluid but not in cerebrospinal fluid or bone marrow. The strain was isolated by cell culture; it was virulent in Swiss mice, and genetic study by isoenzymic analysis \(2\) yielded an unknown profile \(\text{zymodeme 6}.\) The *Toxoplasma* serology was typical of acute infection, with increasing levels of immunoglobulin G \((\text{IgG})\) and IgM, IgA, and IgE antibodies. Repeated serology tests for human immunodeficiency virus type 1 \((\text{HIV}-1)\) and HIV-2 were negative. The CD4 cell count was 344/\(\mu\)l, and the CD8 cell count was 1,031/\(\mu\)l \((\text{CD4}/\text{CD8 ratio, 0.33}).\) The patient improved rapidly on sulfadiazine \((6 \text{ g/day})\) and pyrimethamine \((200 \text{ mg/day}).\) However, renal function deteriorated on day 22 and he developed peritoneal pleural and pericardial effusion which slowly improved over a 2-week period. Results of clinical and biological examinations were normal 8 months after onset \((\text{CD4}/\text{CD8 ratio, 0.66}).\)

A transiently low \(\text{CD4}/\text{CD8}-\text{cell ratio}\) is frequent in symptomatic toxoplasmosis \((6).\) and the severity of this case could not be explained by immunodeficiency. Several features point to a highly pathogenic *Toxoplasma* strain. During the same period, four other cases of severe toxoplasmosis in immunocompetent military personnel returning from French Guyana were observed \((4).\) As wild animals had not been eaten, the source of infection could have been oocysts in chemically disinfected river water. A role of wild felidae \((\text{ocelots and jaguarunders})\) is probable, as no domestic cats live in this region and these animals can shed *Toxoplasma* oocysts \((5).\) The unusually severe manifestations in the case we describe could be explained by poor host adaptation to this uncommon parasite strain. This can be compared to the severe toxoplasmosis acquired by New World monkeys in European zoos \((1).\) Their evolution without contact with *Toxoplasma* prevented these species from developing an adapted response to this parasite. Indeed, this strain, circulating in a region where humans rarely venture, might preferentially induce a Th2-type immune reaction \((3),\) unlike strains generally encountered in inhabited countries.

REFERENCES


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