

*Diagnostic Challenge*

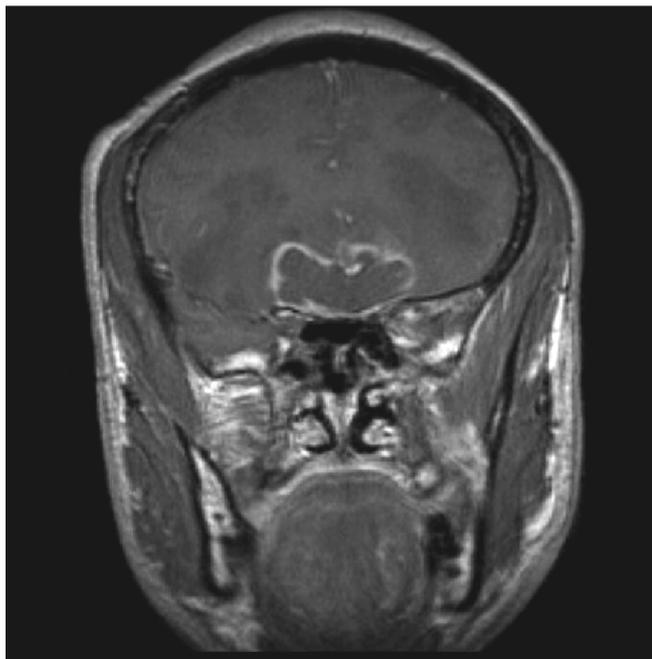
**Answer**

Pierre-Nicolas Carron, MD;\* Mathias Cavassini, MD;† Philippe Maeder, MD;‡ Olivier William Hugli, MD\*

The  $T_1$ -weighted magnetic resonance images showed a focal enhancing lesion with diffuse surrounding edema, extending in the frontal white matter (Fig. 1). The diagnosis of cerebral toxoplasmosis was confirmed by histology and polymerase chain reaction on a stereotaxic frontal biopsy. Despite the patient's report of a recent negative test, the patient had a positive HIV-1 result with a CD4 count of 8 cell/mm<sup>3</sup> (2%) and viremia of 17 600 copies/mL. The outcome was favourable with a standard treatment of pyrimethamine and sulfadiazine. Highly active antiretroviral therapy (HAART)

was introduced 4 weeks later, and the patient's neuropsychologic status and behaviour improved over the following 2 months.

This case illustrates the highly protean radiologic presentations of cerebral toxoplasmosis, such as the "bat-like" computed tomography images seen on page 223. Cerebral toxoplasmosis is one of the most common opportunistic neurologic infections in AIDS patients, in spite of the introduction of HAART.<sup>1</sup> Toxoplasmosis usually presents as a solitary focal lesion or as multiple nodular- or ring-enhancing lesions with surrounding vasogenic edema, preferentially located at the cortico-medullary junction, in the basal ganglia or thalamus.<sup>2</sup> The absence of enhancement with contrast and the unusual images are features associated with low CD4 count.<sup>2</sup> The differential diagnosis includes primary central nervous system lymphoma, progressive multifocal leukoencephalopathy, glioblastoma or HIV encephalitis. The histologic findings and the polymerase chain reaction on cerebrospinal fluid samples are valuable for the diagnosis of cerebral toxoplasmosis. Since the HAART era, the number of stereotaxic brain biopsies has sharply declined.<sup>3</sup> Nevertheless, this procedure is still justified for some patients, particularly in cases of nonenhancing lesions, atypical radiologic appearance for toxoplasmosis or lack of improvement with empiric toxoplasmosis treatment, or if there is a mass effect.<sup>3,4</sup> Early diagnosis may be essential to ensure early treatment and to prolong survival for certain pathologies such as central nervous system lymphoma.



**Fig. 1.** Coronal  $T_1$ -weighted magnetic resonance image showing a large intra-axial mass with rim enhancement and extensive surrounding edema.

**Competing interests:** None declared.

**Keywords:** cerebral toxoplasmosis, HIV, head CT

From the \*Emergency Department, the †Service of Infectious Diseases and the ‡Department of Radiology, University Hospital of Lausanne University, Lausanne, Switzerland.

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**For the challenge, see page 223.**

**Correspondence to:** Dr. Pierre-Nicolas Carron, Emergency Department, University Hospital of Lausanne University, CHUV, BH 06-428, CH-1011 Lausanne Switzerland; pierre-nicolas.carron@chuv.ch

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