Clinical Vistas

Cerebral trypanosomiasis in an incarcerated man

A 40-year-old First Nations man was transferred to hospital from a Manitoba correctional facility following a 2-week history of headache, nausea, vomiting and drowsiness. He denied any travel outside of Manitoba; family members confirmed this. He admitted to a history of intravenous substance abuse.

On examination the patient was afebrile with no meningism. He had a sudden decrease in level of consciousness associated with a left fixed and dilated pupil and right-sided hemiparesis. Head CT revealed an extensive enhancing space-occupying lesion involving both frontal lobes (Fig. 1). An urgent craniotomy was performed to reduce the tumour and obtain a tissue sample.

Microscopically, the biopsy specimen of the lesion had the appearance of a granulomatous abscess with necrosis. The most striking finding was the presence of many small organisms within the macrophages (Fig. 2, left panel). Electron microscopic features of the organism included parallel microtubules under the cell membrane, a kinetoplast and a flagellar pocket with rudimentary flagellae (Fig. 2, right panel). The morphologic features were consistent with the amastigote form of *Trypanosoma* protozoans. Despite treatment with benzonidazole, the patient died within a week. He was found to have a low CD4 count (0.04×10^9/L), but he died before a test for HIV infection could be done.

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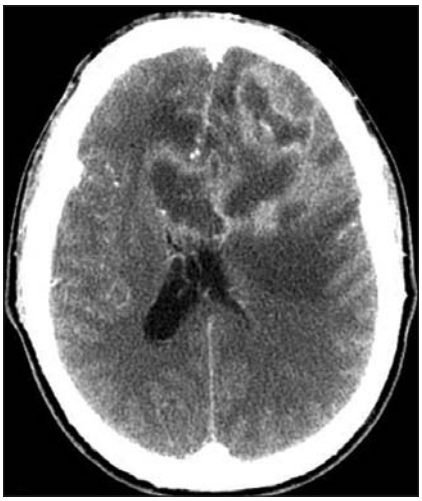

Fig. 1: Infused CT scan showing heterogenously enhancing lesion in frontal lobes.

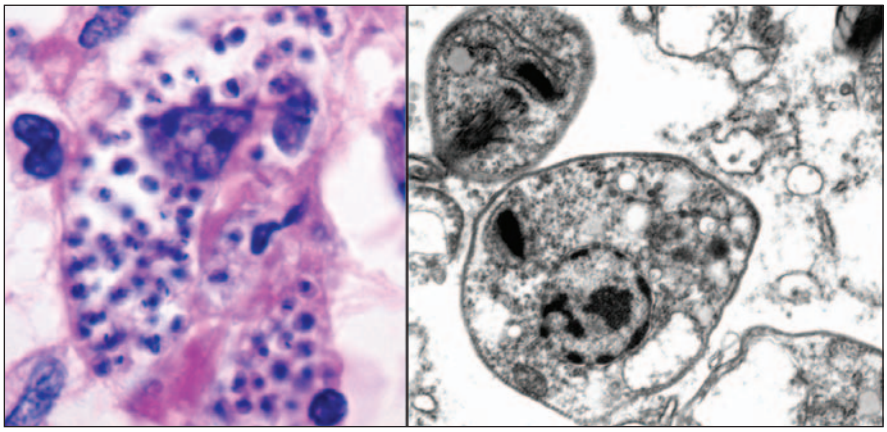

Fig. 2: Left: Photomicrograph of biopsy specimen showing many small organisms with eosinophilic cytoplasm and central basophilic structures within the cytoplasm of a macrophage (hematoxylin and eosin stain; original magnification × 400). Right: Electron micrograph showing nucleus and kinetoplast as well as rare rudimentary flagellae in the individual amastigotic forms of *Typanosoma cruzi* (original magnification × 40 000).

American trypanosomiasis (Chagas disease) is a parasitosis endemic to South America that rarely occurs in the southern United States. *Typanosoma cruzi*, the causative flagellate protozoan, is transmitted to humans by various species of hematophagous triatomine insects and less frequently through blood transfusion, congenital transmission, consumption of raw meat from an infected reservoir, accidental laboratory infection or organ transplants from an infected donor.[1] In younger children, acute meningoencephalitis occurs rarely and is usually fatal. Similar to previous reports,[2,3] our case is an example of the rare patient, particularly someone with a compromised immune system, who presents with an intracranial tumour-like lesion that has been called a "chagoma." It is peculiar that our patient was a native of Manitoba with no known travel history. We speculate that he may have shared an intravenous needle with an infected person or that he travelled without anyone's knowledge. His apparent immunocompromised state of unknown cause may have resulted in reactivation of *T. cruzi*.

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