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NEUROLOGICAL PICTURE

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Brain involvement in a *Schistosoma mansoni* myelopathy patient

A 65 year old Brazilian man developed a progressive paresis in lower limbs. Urinary and fecal dysfunction, pain, and tingling in lumbosacral dermatomes appeared in the following weeks. A diagnosis of inflammatory myeloradiculopathy was done at that point. The patient received pulse with methyl-prednisolone, having improved from paraparesis. Six months later, he suffered several tonic-clonic partial seizures. He was admitted to our hospital with symptoms of headache, nausea and vomiting, right arm and leg hemiparesis, and dysphasia. Neurological examination at admission disclosed T6 hyperesthesia level, lower limb paraparesis (Medical Research Council (MRC) grade 2/5), absent ankle tendon reflex, lower limb hypo-palaeesthesia, urinary and rectal sphincter dysfunction, and bilateral Babinski sign. A right faciobraquicrural hemiparesis (MRC grade 0/5) was also observed.

S. mansoni antibodies (indirect immunofluorescence assay) in serum were positive. Analysis of CSF disclosed absence of pleiocytosis (5 white cells; 85% lymphocytes); IgG index, CSF protein (0.39 g/l) and glucose (2.66 mmol/litre) levels were normal. Microscopical examination of urine and stool specimens disclosed no ova or parasites. A rectal biopsy was negative. Magnetic resonance imaging of the brain showed hyper-

intensity areas in the left frontal-parietal white matter; these lesions heterogeneously enhanced after the administration of gadolinium (figure 1A, B). Spinal cord MRI showed swelling of lower thoracic spinal cord and conus medullaris.

A stereotactic needle biopsy of the brain lesion was performed. Pathological examination of the biopsy specimen revealed multiple sclerosing granulomas scattered within the parenchyma of the brain, with deposits of helminth ova in the centre of these granulomas. Granulomas had giant cells and lymphomononuclear infiltrates around *S. mansoni* eggs (fig 1C). The patient was treated with praziquantel and dexamethasone; nevertheless, no improvement of haemiparesis was observed during follow up.

Schistosomiasis (bilharziasis) is a parasitic disease caused by blood flukes of the genus *Schistosoma*.¹ Neuroschistosomiasis, the infection of the central nervous system by *S. mansoni*, *S. japonicum* or *S. haematobium*, constitutes a severe presentation of the disease.² *S. mansoni* related neuroschistosomiasis involves the spinal cord far more frequently than the brain.³ The extraordinary collection of ova in the frontal-parietal cortex in our patient suggests the ectopic location of a worm pair in the intracranial venous circulation, with local deposition of ova in brain parenchyma.

Our case illustrates that: (1) *S. mansoni* encephalitis should be considered in the differential diagnosis in patients presenting with seizures and focal motor deficits from areas where schistosomiasis is endemic; and (2) brain involvement in schistosomal myeloradiculopathy can occur simultaneously.

F J C Artal, H M Mesquita

Departments of Neurology, of the Hospital Sarah, Brasília DF, Brazil

R de A Gepp

Departments of Neurosurgery, of the Hospital Sarah, Brasília DF, Brazil

J S Antunes, R K Kalil

Departments of Pathology, of the Hospital Sarah, Brasília DF, Brazil

Correspondence to: Francisco J Carod Artal, Neurology Department, Sarah Hospital-Brasília, The Sarah network of Rehabilitation hospitals, SMHS, quadra 501, conjunto A, CEP 70330-150, Brasília DF, Brazil; javier@bsb.sarah.br; FJCarod@aol.com

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Figure 1 (A) Axial T2-weighted MRI of the brain demonstrating hyperintense signal in the left frontal parietal white matter. (B) Contrast-enhanced coronal T1-weighted brain MRI revealing enhancement throughout the left frontal and parietal lobes. (C) Photomicrograph showing nodular granulomas within the parenchyma containing deposits of *S. mansoni* ova circumscribed by chronic inflammatory cell infiltrates (Haematoxylin-eosin stain; original magnification, $\times 100$).