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## Cerebral Schistosomiasis

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Schistosomiasis (bilharziasis) is one of the most widespread parasitoses in the world (about 300 million affected people). The central nervous system may be involved. We were unable to find a published description of the computed tomographic (CT) appearance of intracerebral schistosomiasis. This article reports a case. CT disclosed a large infiltrating mass lesion that mimicked a glioblastoma. Histology established the diagnosis of granulomatous infection caused by *Schistosoma* (*S. mansoni*).

### Case Report

A 27-year-old woman was admitted after 1 week of constant right-sided headache without pyrexia. Concomitantly she developed progressive left hemiparesis. Nausea and vomiting were present for 2 days before admission. She was referred from a general hospital with a positive cerebral scintigram showing right frontoparietal hyperactivity. Anamnesis revealed a prolonged stay in Africa 16 years before and a recent journey near Lake Tanganyika 1 year before. Pertinent physical findings were slowness of ideation and discrete left hemiparesis with inferior facial hypotonia. Laboratory findings were non-

contributory. Electroencephalography showed right focal nonspecific abnormalities.

CT of the head (fig. 1) demonstrated a huge hypodense area with poorly defined contours in the right frontal region. After intravenous administration of contrast material there was moderate nodular enhancement in the parasagittal region adjacent to the displaced anterior falx. An important associated mass effect was present. No calcifications were seen within the lesion. A large frontal mass with no pathologic circulation was confirmed by carotid angiography. At surgery a right infiltrating frontocollal tumor was found. Macroscopic aspects of the lesion suggested the diagnosis of glioma.

Pathologic specimens showed granulomatous encephalitis caused by *S. mansoni* (fig. 2). Later examination of feces disclosed ova of *S. mansoni*.

### Discussion

Schistosomiasis is a very widespread disease affecting large populations [1]. *Schistosoma mansoni* is found in Africa and Brazil [1]. The central nervous system is a less common site of schistosomal infection than the hepatosplenic, pulmo-

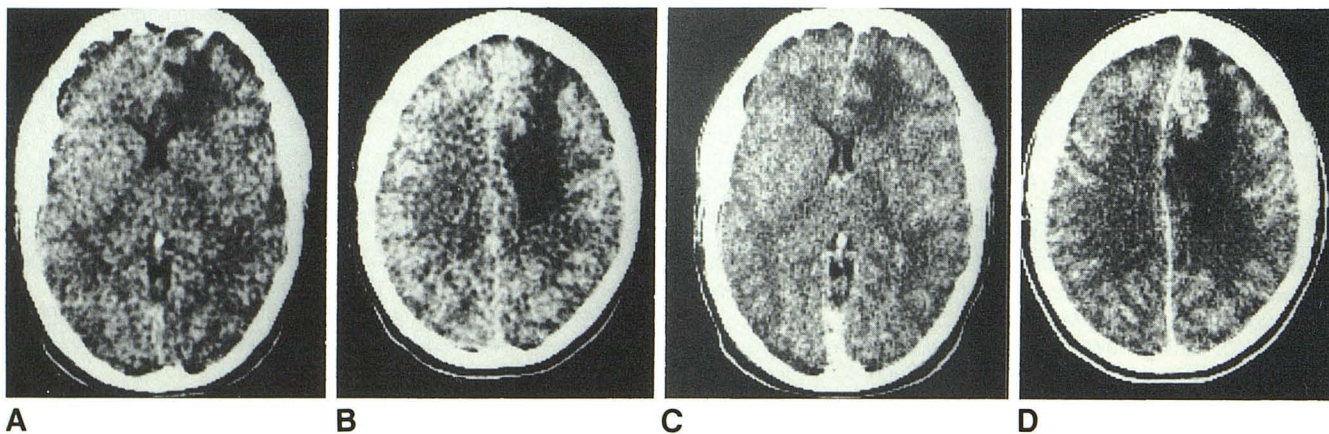


Fig. 1.—A and B, Unenhanced CT scans. Large area of low density suggesting edema in right frontal lobe. Associated compression of right frontal horn. Sulci not visible. C and D, Contrast-enhanced scan. Moderate nodular

enhancement localized in right frontal parasagittal region adjacent to displaced anterior falx. No density changes within large area of reactive edema, extending posteriorly into parietal lobe.

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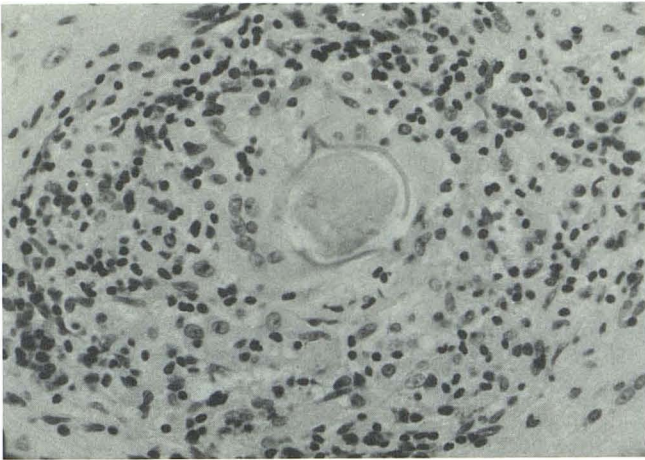


Fig. 2.—Granuloma around ovum of *Schistosoma*.

nary, or urinary tract. The central nervous system may be involved by any type of *Schistosoma*, although different tropisms are observed. *S. haematobium* almost exclusively penetrates the spinal cord. *S. mansoni* has a greater tropism for the spinal cord than for the brain. *S. japonicum* more electively affects the brain [2].

Nevertheless, as many as 26% of patients infected with *S. mansoni* may have cerebral involvement [2, 3]. Histologic studies of autopsied cases describe involvement of the brain, which may be affected in any location including choroid plexus [4]. Cerebral and cerebellar hemorrhage due to fibrinoid ne-

crotic arteritis have been reported [5]. We found no reports of the CT appearance of cerebral schistosomal lesions.

In our case, *S. mansoni* granuloma produced the appearance of a nonspecific, space-occupying lesion that led to the diagnosis of a malignant glioma. Infectious disease had erroneously been ruled out, as there were no clinical nor biologic signs of infection before surgery. No hemorrhagic lesion was disclosed on CT. Calcifications were absent. The absence of a CT description of schistosomal lesions is due to the geographic spread of the disease. Our report stresses the need for CT in countries where widespread *S. mansoni* is endemic. With the high prevalence of international travel, there should be an increased awareness of the possibility of central nervous system infestation in countries in which these diseases are not endemic.

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