

CASE 1998-6

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Clinical History: The patient was a 42 year old male with a history of intravenous drug abuse, alcohol abuse, and AIDS. He was diagnosed with AIDS at age 38 when he presented with *Pneumocystis carinii* pneumonia, pneumococcal pneumonia, and hepatitis. Toxoplasma and CMV titers at that time were both high positive for IgG and negative for IgM. Serologies were also positive for hepatitis B and C viruses. Twenty-eight months later, he developed pulmonary tuberculosis, which was multidrug-resistant by culture. Sputum samples also suggested colonization by *P. aeruginosa*. His CD4 count was less than 20 when last measured two months later.

The patient's neurologic history began at age 41, when he experienced sudden-onset of left-sided weakness and brief loss of consciousness. He was unable to ambulate for the next few days, then came to the hospital. Physical examination findings included a left facial droop, left hemiparesis, and brisk reflexes. Multiple brain lesions were detected radiographically, which involved bilateral frontal and parietal cortex and subcortical white matter, thalamus, and cerebellum. He was treated for presumptive Toxoplasmosis, with subsequent clinical improvement and radiographic regression of the CNS lesions. He was eventually discharged on an anti-Toxoplasma regimen.

Nine months later, the patient was readmitted to the hospital complaining of poor balance following a period of complete noncompliance with his medical therapy. Further history revealed fever, chills, dry cough, weakness and lethargy. The patient was alert, oriented and slightly dysarthric, with a right facial droop and left pronator drift. Brain imaging revealed new lesions, including a large one in the right basal ganglia. After reinstating anti-Toxoplasma therapy, the patient again improved clinically and was discharged.

One month later, the patient was readmitted after experiencing a probable seizure despite reported compliance with medications. Additional history revealed only mild fever and headache. He was alert with a temperature of 102. Examination was notable for diffuse cervical and supraclavicular lymphadenopathy. Laboratory examination revealed a therapeutic Dilantin level, and toxicologies were negative. Cerebrospinal fluid analysis showed elevated protein, normal glucose, and rare blood cells; studies for organisms (Gram stain, bacterial culture, AFB, fungal culture, cryptococcus, and RPR) were negative. Brain imaging revealed the old right basal ganglia lesion, which had increased in size, as well as new lesions in the cerebellum and cerebrum. On hospital day 2, the patient had increasing unresponsiveness and speech difficulty. On hospital day 3, brain biopsy was considered, but the patient deteriorated rapidly and died later that day.

Necropsy findings: The fresh brain weighed 1340 grams. External examination of the brain revealed mild cerebral edema, but was otherwise unremarkable. Sectioning revealed over 20 discrete lesions in the cerebrum and cerebellum, the largest of which involved the right basal ganglia and measured 4 cm in greatest dimension. The lesions were hemorrhagic, soft, and slightly to moderately expansile. All of the lesions looked similar grossly, except for the presence of small, yellow, overtly necrotic areas within two of these lesions. No lesions were detected in the brainstem, and the remainder of the macroscopic brain examination was unremarkable. General autopsy findings included a hemorrhagic necrotizing pneumonia with macroscopic abscesses involving both lungs, interstitial nephritis with microabscesses, generalized AIDS lymphadenopathy, and mild hepatitis consistent with the history of hepatitis B and C virus seropositivity. Immunohistochemical studies demonstrated scattered Toxoplasma cysts within the lung and kidney abscesses. Postmortem lung cultures were also positive for *S. aureus* and *P. aeruginosa*.

Material submitted: H&E section of a representative cerebral lesion.

- Points for discussion:
1. Diagnosis
 2. Classification and epidemiology of the etiologic agent