monia is a rare presentation or a more common but unrecognized manifestation because of failure to recover the organism from sputum is uncertain. Furthermore, our patient was cirrhotic. It is possible that cirrhosis predisposed him to have more severe pneumonia. In comparison with infections caused by *Streptococcus pneumoniae*, those due to the *S. milleri* group affect hosts with underlying conditions and present with a more protracted course [4]. Extrathoracic manifestations of infections caused by the *S. milleri* group include dental abscess, endocarditis, and visceral abscesses [2, 3, 5, 6].

Our patient presented with a triad: pneumonia, meningitis, and brain abscesses. Although *S. pneumoniae*, *Haemophilus influenzae*, and *Neisseria meningitidis* are known to cause simultaneous lung and brain infections, CNS involvement is typically associated with meningitis and not with brain abscess. The characteristics of our patient suggest some unique features: subacute presentation, lack of bacteremia, and difficulty in recovering the organism from sputum and CSF. All these features are recognized characteristics of infection with the *S. milleri* group [4]. Therefore, we believe that *S. intermedius* infection should be considered in the differential diagnosis for patients with concomitant lung and brain infections, especially those with brain abscesses. Although *S. pneumoniae* more commonly causes associated lung and CNS infections, the subacute presentation, lack of bacteremia, and development of brain abscesses are perhaps more characteristic of infection with *S. intermedius* and possibly other species within the *S. milleri* group.

**Central Nervous System Pneumocystosis in AIDS: Antemortem Diagnosis and Successful Treatment**

CNS pneumocystosis is an extremely rare event in patients with AIDS. In a recent article published in *Clinical Infectious Diseases*, Bartlett and Hulette reported 1 case and reviewed 6 additional cases published in the English-language literature [1]. A striking feature is that all 7 cases were diagnosed after death, during necropsy. Recently we diagnosed CNS pneumocystosis in a patient with AIDS, which was treated successfully.

A 38-year-old homosexual man was admitted because of cephalalgia and fever, which had started 1 week previously. His medical history was unremarkable. At the physical examination he was 37.8°C, the blood pressure was 122/78 mm Hg, and the heart rate was 78 beats per minute. He had some degree of confusion and mild neck rigidity.

Chest radiographic findings were normal. A cranial CT scan indicated mild cerebral atrophy. A lumbar puncture yielded clear CSF with a protein content of 2.4 mmol/L (glycemia, 6.1 mmol/L), and 42 leukocytes/mm³ (90% lymphocytes). Pathological examination revealed cryptococci and *Pneumocystis carinii* (figure 1), and culture of the CSF yielded *Cryptococcus neoformans*. The titer of cryptococcal antigen in CSF was positive, at 1 : 2048. Serological tests for HIV (ELA and Western blotting) were positive. The CD4⁺ cell count was 40/mm³, and the HIV-1 viral load was 73,240 copies/mL. The patient was treated with iv amphotericin B at doses ≤0.1 mg/kg/d for 21 days and with cotrimoxazole (800/160 mg q.i.d.) administered intravenously for 15 days and then orally for 28 days, resulting in marked improvement. Later, he started secondary prophylaxis with oral fluconazole (400 mg/d) and cotrimoxazole (800/160 mg 3 times a week), plus antiretroviral therapy with lamivudine, stavudine, and indinavir, at current standard doses.

Six weeks later, biochemical parameters of the CSF were near normal, and no cryptococci or *P. carinii* were detectable pathologically. When the CSF was examined 6 months later, it was entirely normal. At the time of this writing (>1 year later), the patient was asymptomatic, and his condition was evolving well. His current viral load is <20 copies/mL, and the CD4⁺ cell count is 280/mm³. No relapses of CNS pneumocystosis have been detected.

**References**


Pathology for a man with AIDS who had CNS pneumocystosis revealed *Cryptococcus neoformans* (large arrows) and *Pneumocystis carinii* (small arrows) (Giemsa stain; original magnification, ×2000). Immunohistochemistry with monoclonal antibodies confirmed identification of latter organisms.

To our knowledge, the present report is the first of premortem diagnosis of CNS pneumocystosis. This condition has been reported in 7 other cases, all diagnosed after death [1–7]. Six of these had some concomitant infectious CNS involvement: cryptococcal meningitis in 2 [6, 7] (as in the present case), HIV-1 encephalopathy in 2 [1, 2], and CNS toxoplasmosis in 2 [4, 5]. This finding suggests that CNS pneumocystosis rarely presents as an isolated condition and should be considered in the differential diagnosis for patients with some other kind of CNS involvement due to HIV-1.

This patient was treated successfully with high doses of cotrimoxazole. Since this is the drug of choice for treating pneumocystosis and since it crosses the hematoencephalic barrier reasonably well (its concentration in CSF may reach 30%–50% of serum level if the meninges are inflamed), we expected that the drug would be effective, as indeed it was in our case patient.

The present case, together with the cases reported previously, confirms that CNS pneumocystosis, although rare, does occur in patients with AIDS. It is always diagnosed in advanced stages of the disease and usually postmortem, but if diagnosed while the patient is alive, it can be treated successfully with cotrimoxazole.

**References**