A 24-YEAR-OLD MAN presented with a 2-day history of headache, confusion, and left hemiparesis. He was previously in good health, was not immunocompromised, and tested negative for human immunodeficiency virus infection. Magnetic resonance imaging showed a progressive, nonenhancing lesion involving the basal ganglia that extended into the midbrain with mass effect (Figure, A and B). Analysis of a biopsy specimen from the right caudate lobe showed neutrophil infiltration with broad fungal hyphae with irregular branching (Figure, C). A *Rhizomucor* species was grown on culture. Specific questioning revealed one occasion of intravenous amphetamine use in the week before admission. The patient died despite antifungal therapy with amphotericin B and external ventricular drainage.

Cerebral rhizomycosis is a much less common variant of mucormycosis than is rhinocerebral mucormycosis; it is distinguished from the latter by hematogenous spread rather than by contiguous spread (usually from the nasal sinuses). It is typically reported in association with immunosuppression, but association with intravenous narcotic use has been recognized. As was observed in our case, this fungal infection appears to have a preference for involvement of the basal ganglia. One potential link is the iron metabolism that takes place within the basal ganglia. Increased expression of divalent metal transporter type 1 occurs in the basal ganglia, which may account for high levels of iron in these regions. We speculate that the basal ganglia affords this fungus an environment for rapid growth and proliferation because of its iron content. Treatment of iron overload with deferoxamine mesylate is a recognized risk factor for rhizomycosis, for not only iron overload but deferoxamine therapy itself stimulates the growth of *Rhizopus* species.

Although reports of survival exist, this fungal infection has a poor prognosis. Effective management generally requires aggressive surgical debridement, along with antifungal chemotherapy.

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**REFERENCES**

Figure. Imaging results (A and B) and microscopic analysis of the biopsy specimen (C) in our patient. A and B, Fluid-attenuated inversion recovery (FLAIR) magnetic resonance imaging on admission (A) showing increased signal in the right basal ganglia. There was hypointensity on T1 imaging and patchy restricted diffusion, but no enhancement following administration of intravenous gadolinium. Repeat FLAIR imaging 48 hours later (B) showed spread to the left basal ganglia. C, Photomicrograph showing the broad hyphae with irregular branching typical of zygomycosis in an area of suppuration with background neutrophils (hematoxylin-eosin, original magnification ×400).