A 35-Year-Old Woman With Prior Renal Transplantation Admitted With a Temporal Brain Abscess

(See page 797 for the Photo Quiz)

Diagnosis: *Cladophialophora bantiana* brain abscess.

*Cladophialophora* are dematiaceous molds typically found in soil and decaying plants [1]. The various *Cladophialophora* species are responsible for a diversity of disease states, including brain abscesses (*C. bantiana*), chromoblastomycosis, and other skin infections (*C. carionii* and *C. boppii*) [2]. *C. bantiana* is the most common fungus to cause phaeohyphomycosis of the central nervous system (CNS) and does so in both immunocompetent and immunocompromised hosts [3, 4]. Animal models and case reports suggest that the route of acquisition is through inhalation followed by hematogenous dissemination to the CNS [5, 6].

In a recent case series of 101 CNS phaeohyphomycosis cases, 48 of which were due to *C. bantiana*, the average age of individuals infected with *C. bantiana* was 35 years, the majority (77%; 37/48) were male, and most were immunocompetent (at least 73%; 35/48) [3]. Presenting symptoms of CNS disease may include headache, focal neurologic deficit, seizures, altered mental status, behavioral change, and fever [4].

The diagnosis is suggested by one or more ring-enhancing masses on brain imaging (Figure 1) but is ultimately based on tissue pathology and culture. *Cladophialophora* spp. form wooly spreading colonies on Sabouraud dextrose agar or potato dextrose agar, colonies that are olive green to black on the surface and black on the reverse owing to melanin in their cell walls [7]. In addition to being distinguished from other *Cladophialophora* species by its propensity to cause CNS disease, *C. bantiana* can be distinguished microbiologically by its moderate to rapid growth and ability to grow at temperatures as high as 42°C–43°C. Histopathologically, *Cladophialophora* spp. have brown, septate hyphae and brown, unicellular, elliptical, long chain-forming conidia (Figure 2). *C. bantiana* is distinguished from the other species by its larger conidia that form sparsely branching, long chains [7].

Retrospective case series highlight the need for complete excision along with double- or triple-antifungal therapy during the wait for antifungal drug susceptibility results. Recent in vitro antifungal susceptibility data on 37 *C. bantiana* isolates found the MIC required to inhibit 90% of organisms to be 0.125, 0.125, 1, and 2 μg/mL, respectively, for posaconazole, itraconazole, amphotericin, and voriconazole; however, clinical outcome data concerning the use of these MICs to evaluate antifungal

![Figure 1](image1.png)

**Figure 1.** T2-weighted brain magnetic resonance image demonstrating anterior right temporal lobe T2-hyperintense lesion with hypointense rim (arrow) and surrounding T2 hyperintensity (arrowhead).

![Figure 2](image2.png)

**Figure 2.** A, Tease preparation from the slide culture of brain tissue stained with lactophenol cotton blue stain (magnification, ×400), showing smooth conidia (arrow) arranged in long, wavy chains formed from undifferentiated conidiophores (arrowhead). B, Histopathologic evaluation of brain tissue with hematoxylin-eosin stain (magnification, ×400), showing chains of light-brown pigmented conidia (arrow) within necrotizing granulomatous inflammation.
susceptibility and resistance remain limited. In spite of antifungal therapy, however, mortality remains high (50%–63%) [3]. The optimal duration of therapy has not been established, although current expert opinion suggests that therapy should be continued at least through complete radiographic resolution.

In spite of aggressive antifungal therapy and temporal lobectomy, the patient’s mental status continued to decline postoperatively. Her condition was further complicated by a methicillin-resistant *Staphylococcus aureus* ventilator-associated pneumonia and urinary tract infection. On the fifth postoperative day, she developed progressive hypotension with increasing oxygenation requirements and suffered an asystolic arrest, resulting in her death.

**Notes**

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