INTERNAL MEDICINE

□ PICTURES IN CLINICAL MEDICINE □

Disseminated Mucormycosis (Zygomycosis) in Acute Myeloid Leukemia

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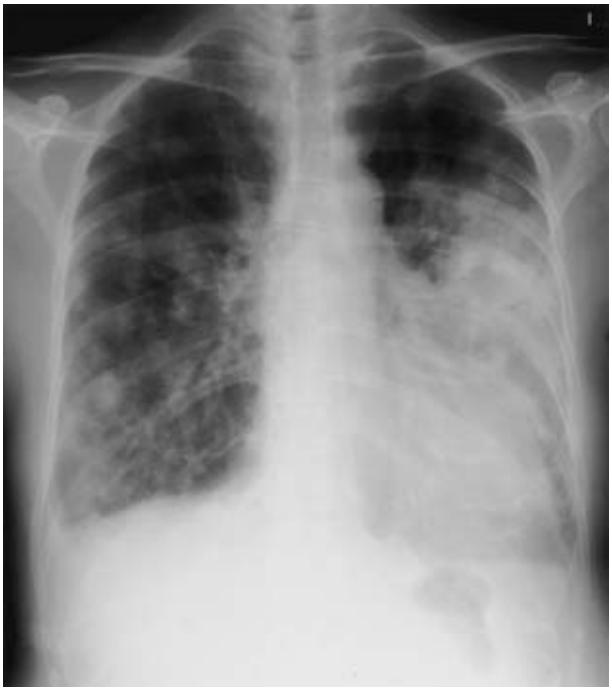

Figure 1. **Chest radiogragh showing nodular infiltrates on the right and confluent opacity on the left.**

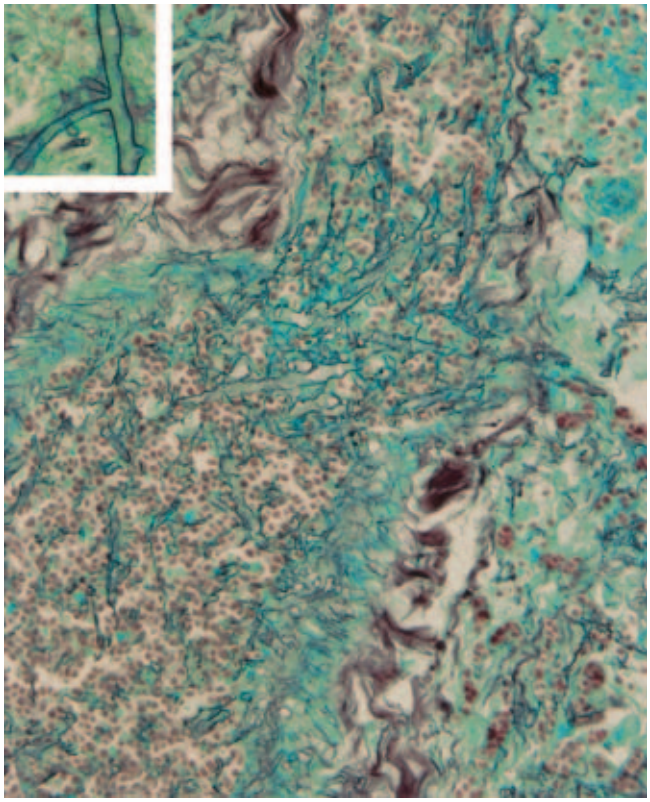

Figure 2. **Section from the lung showing numerous hyphae in the wall and lumen of the blood vessel and in the alveoli (Grocott's stain).**

A 50-year-old non-diabetic woman was admitted for hemorrhagic diathesis. Laboratory examination indicated that she was suffering from t(15;17)-positive acute promyelocytic leukemia associated with disseminated intravascular coagulation. She was started on all-*trans* retinoic acid plus idarubicin and cytarabine. However, due to the development of retinoic acid syndrome, all-*trans* retinoic acid was suspended and dexamethasone was begun. Leukemic promyelocytes disappeared from the peripheral blood and bone marrow but there was prolonged neutropenia. After 3 weeks, she developed rapidly progressive pneumonia recalcitrant to antibacterial and antifungal (micafungin) agents (Fig. 1) and died of respiratory failure on day 24. Blood culture was negative for fungi. Postmortem examination revealed disseminated mucormycosis involving the

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lungs, heart, liver, spleen, kidneys, adrenals, and gut. The affected organs showed areas of hyphal invasion of the blood vessels, thrombosis, infarction, and hemorrhagic necrosis. The fungi consisted of broad nonseptate hyphae with right-angled branching (Fig. 2). Mucormycosis is a rare life-threatening fungal infection that occurs mostly in immunocompromised patients with hematologic malignancy or organ transplant. Other risk factors include diabetes mellitus, immunosuppressive treatment, and iron overload. Our patient was rendered vulnerable to this infection probably by means of mini-pulse dexamethasone therapy and profound neutropenia. Fungi of the class zygomycetes and order mucorales (rhizopus, mucor, absidia) have a predilection for invading blood vessels. Rhinocerebral and pulmonary forms predominate but disseminated disease may ensue as in this case. Most clinical isolates of zygomycetes are reported to be resistant or less susceptible to flucytosine, micafungin, and azole compounds. In retrospect, we should have used high-dose amphotericin B instead of micafungin. The antemortem diagnosis of mucormycosis is difficult and it could be mistaken for aspergillosis even at postmortem examination.