Timing of Sputum Cultivation in Cases of Pulmonary Mucormycosis

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Picture 1.

Picture 2.
A 64-year-old Japanese man was hospitalized with acute lymphocytic leukemia. The administration of imatinib-containing chemotherapy resulted in febrile neutropenia. Computed tomography (CT) showed the reversed halo sign (1) (RHS, Picture 1A); however, the serum β-D-glucan level was not elevated. Treatment with liposomal amphotericin B (L-AMB) (2.5 mg/kg) was administered based on the suspicion of mucormycosis. A culture of the sputum obtained prior to L-AMB administration revealed *Rhizopus oryzae* (Picture 2A). Within one week, the RHS transitioned to the air crescent sign (ACS) (Picture 1B). The patient ultimately died of general prostration.

The gross autopsy findings revealed a lesion corresponding to ACS (Picture 3). A microscopic examination showed hemorrhagic infarction with hyphae occluding the blood vessels apparent on Grocott’s staining (Picture 2B). The tissue culture yielded negative results.

Considering the difficulty in culturing sputum (2), we postulate that relatively fresh substances derived from the periphery of the site of infarction may have been ejected via air infiltration, thus allowing *Rhizopus oryzae* to remain adequately viable to be cultivated.

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References