

A case of disseminated cryptococcal infection in an immunocompetent patient

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Background: Cryptococcosis is an opportunistic fungal infection primarily seen immunocompromised patients, such as those with HIV or undergoing transplantation. Disseminated disease is exceptionally uncommon in healthy individuals without risk factors.

Case presentation: An 81-year-old female patient visited the neurology clinic complaining of a headache. An incidental 15 mm-sized nodule was discovered in the right upper lobe during brain angiography computed tomography (CT) (Figure 1). No other brain lesions were found. The patient had no previous medical or travel history and denied exposure to birds. Cryptococcal pneumonia was confirmed via percutaneous lung biopsy (Figure 2). The patient experienced sudden loss of consciousness, fever, and hypotension on the 6th day of hospitalization. A lumbar puncture was performed. The cerebrospinal fluid (CSF) analysis showed an opening pressure of 19.7 cmH₂O, white blood cell count of 62mm³ (polymorphs 5%, lymphocytes 76%, eosinophils 9%), no red blood cells, protein level of 168mg/dL, glucose level of 24mg/dL, positive *Cryptococcus neoformans* polymerase chain reaction, and positive india ink examination. Brain MRI showed prominent leptomeningeal enhancement in both cerebellar sulci and brainstem (Figure 3). Cryptococcal encephalomeningitis was diagnosed, and treatment with liposomal amphotericin B 4mg/kg and fluconazole 800mg was initiated, as flucytosine was not available in South Korea at that time. Cryptococcemia was also confirmed through blood culture tests. While undergoing antifungal treatment, the patient regained consciousness and stabilized. However, she experienced two more episodes of altered mental status accompanied by shock and subsequent recovery. Despite switching to flucytosine instead of fluconazole, the cryptococcal infection remained uncontrolled, ultimately leading to the patient's death.

Conclusion: This represents an extremely rare case of disseminated cryptococcosis in an immunocompetent individual, highlighting the significance of timely and accurate identification, along with prompt intervention, in influencing patient outcomes.

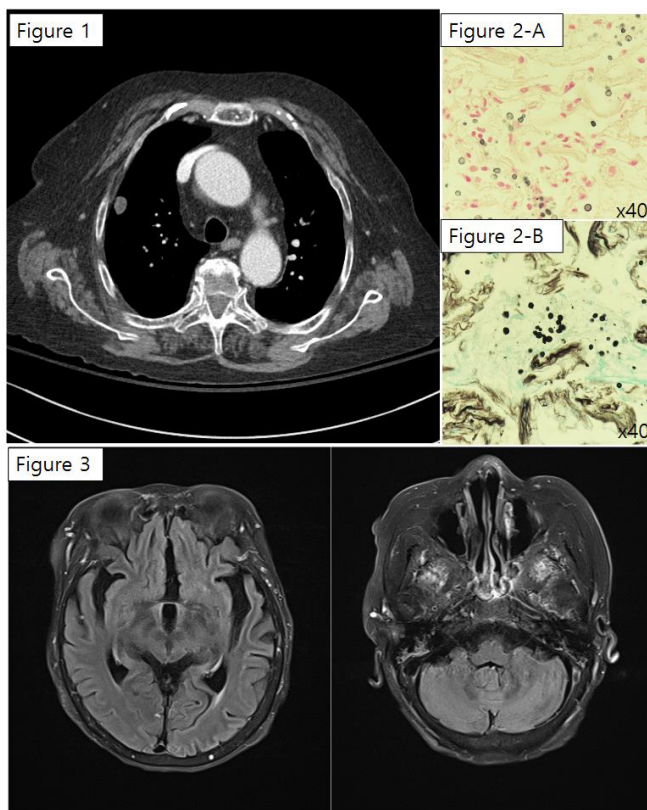


Figure 1. A non-enhancing low-attenuation nodule with an oval shape was detected in the right upper lobe on the Chest CT.
Figure 2. (A) Gomori methenamine silver (GMS) and (B) Fontana-Masson stained the fungi black. Numerous cryptococci were seen in the specimen obtained through percutaneous lung biopsy.
Figure 3. Prominent leptomeningeal enhancement at both cerebellar sulci and occipital lobe was detected using fluid-attenuated inversion recovery (FLAIR) T2-weighted magnetic resonance imaging.