
A CASE OF INVASIVE PULMONARY ASPERGILLOSIS CAUSED BY COMBINED INFECTION OF ASPERGILLUS FUMIGATUS AND NIGER CONFIRMED BY BOTH HISTOPATHOLOGICAL EXAMINATION AND IN SITU HYBRIDIZATION

Omuta J¹, Murayama SY², Hasegawa C³, Hamatani S³, Hanazawa R³, Toyama K⁴, Sugino K⁴, Nakata K⁴, Shibuya K³

¹ ^{1st} Dept. of Ophthalmology, Toho University School of Medicine, Tokyo, Japan

² Dept. of Bacteriology, Teikyo University School of Medicine, Tokyo, Japan

³ Dept. of Surgical Pathology, Toho University School of Medicine, Tokyo, Japan

⁴ Dept. of Respiratory Medicine, Toho University School of Medicine, Tokyo, Japan

Invasive aspergillosis has become one of the serious opportunistic infection in patients with induced immunosuppression. In the paper, a case of pulmonary aspergillosis caused by two different species is described with a detailed histopathological and molecular biological examination. A patient, 68 year-old, male, showed the diffuse interstitial shadow in his both lungs on chest X ray photograph with a progression of respiratory distress after finishing of chemotherapy for his advanced lung cancer in the right lower lobe. Whereas a steroid pulse therapy was carried out, his status was not recovered. He was dead in pulmonary failure. The consequent autopsy study revealed a widespread invasive pulmonary aspergillosis in both lungs. To confirm the diagnosis, *in situ* hybridization employing three different probes; 18S rRNA gene (panfungal probe), alkaline protease gene (*ALP*; *Aspergillus* spp.-specific), and long terminal repeat of *Afut1* (retrotransposon; *A fumigatus*-specific), was carried out on paraffin sections from the lesions of both lungs. Filamentous fungi appeared in the right lesion were positive with both *ALP* and *Afut1*, but that from the left indicating characteristics of *A. niger* confirmed by consequent detailed histological examination exhibited a negative signal with *Afut1*. Accordingly, the patient was diagnosed as invasive aspergillosis caused by combined infection of *A. fumigatus* and *A. niger*.