Proven nasal and pulmonary aspergillosis in patient with severe fever with thrombocytopenia syndrome

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Key words: severe fever with thrombocytopenia syndrome; Banyangvirus; aspergillosis
A 72-year-old woman presented to the emergency department with altered mental status (10 of glass coma scale). She had no medical history. On visit day, laboratory tests revealed the following: white blood cell count, 8300/μl (4000–10,000); platelet count, 43,000/μl (150,000–450,000); creatinine, 2.0 mg/dL (0.5–0.9); ferritin >1675.5 ng/mL, (4.6–204.0); and C-reactive protein, 12.6 mg/dL (0.0–0.3). Sequential organ failure assessment score was 10 and she was admitted to the intensive care unit. On the second hospital days, severe fever with thrombocytopenia syndrome (SFTS) virus was detected by real-time reverse transcription-polymerase chain reaction. Chest computed tomography, bronchoscopy, and serum aspergillosis antigen test were performed according to our early diagnosis protocol of SFTS-associated pulmonary aspergillosis (SAPA). On computed tomography revealed multifocal consolidative lesion with some cavitation in both lower lungs (Figure 1). When the bronchoscope was inserted through the left nose, necrotic tissue surrounded by a clot was observed on the nasal septum. (Figure 2A) Bronchoscopy revealed pseudomembranous lesions with some ulceration on the left main and upper lobe bronchus. (Figure 2B). Due to high probability of SAPA, intravenous voriconazole was initiated. In subsequent tests, the serum Aspergillus antigen level was 4.2 (negative <0.5) and the aspergillus species was isolated from bronchoalveolar lavage fluid. On the seventh hospital days, the tissue specimens from left nose and left bronchus confirmed invasive aspergillosis. (Figure 2C and 2D). After the treatment with oral voriconazole for two months, her clinical course was fully improved.

Invasive fungal disease may accompany early clinical course of SFTS 1, 2, which is associated with a poor prognosis 3, 4. An invasive nasal and pulmonary aspergillosis was diagnosed in this patient, which has not been reported previously in worldwide. There are cases of Aspergillus tracheobronchitis without lung lesions 5, so bronchoscopy should be considered. A protocolized approach for early diagnosis of SAPA is important.
Figure legends

Figure 1. Chest computed tomography revealed multifocal patchy (white arrowhead) and peribronchial consolidation in both lungs. Small cavitary change was observed in the right lower lobe consolidation (white arrow).

Figure 2. (A) An ulcerative mass surrounded by blood clot was observed in the left nostril, accompanied by septal perforation. (B) Bronchoscopy revealed cream-colored thick pseudomenbrane with mucosal ulceration on the left main and upper lobe bronchus. Microscopical findings of the specimen obtained from nasal septum (C) and left upper lobe bronchus (D) show the numerous fungal hyphae, morphologically consistent with aspergillosis invading the necrotic mucosa and submucosal area (C: Gomori methenamine silver stain x 400, D: hematoxylin and eosin stain, x 400)

Authors’ Contributions

Conceptualization: Yoo JR. Formal analysis: Hyun CL, Chang SW. Writing - original draft
preparation: Seong GM. Writing - review and editing: Yoo JR. Approval of final manuscript: all authors.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

Acknowledgements

This study was approved by the Jeju National University Hospital Institutional Review Board (2020-10-00).

Funding

This work was supported by the 2022 education, research and student guidance grant funded by Jeju National University

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