中文題目：一位免疫正常的糖尿病患者感染致命的侵襲性肺麴菌

英文題目：Invasive pulmonary aspergillosis in the immunocompetent patient with uncontrolled diabetes mellitus

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Abstract

Invasive pulmonary aspergillosis is a rapidly progressive, often fatal infection that occurs in severely immunosuppressed patients, including those who are profoundly neutropenic, recipients of bone marrow or solid organ transplants and patients with advanced AIDS or phagocytic disorders[1.2]. Immunocompetent individuals rarely develop this infection and do so only in the presence of pulmonary and systemic abnormalities such as fibrotic lung disease, suppurative infection or using corticosteroids.

We present a case of pulmonary aspergillosis in uncontrolled diabetic patient. He presented with cough, dyspnea and chest pain. Pulmonary aspergillosis was confirmed by the histopathologic report of tissue from bronchoscopic biopsy and the culture in bronchoalveolar lavage. This report highlights that pulmonary aspergillosis can occur in individuals with diabetes mellitus even in the absence of other risk factors such as corticosteroid use, undergoing chemotherapy or other associated immunosuppressive factors [3]. It is; therefore, valuable to recognize that in patients with diabetes mellitus pulmonary aspergillosis should be considered as an important differential diagnosis for respiratory problems.

Case presentation

This 47-year-old male farmer with history of uncontrolled diabetes mellitus presented to our emergent department because of cough and right chest pain for one month.

He denied the systemic disease before and just had the newly diagnosis with type 2 diabetes mellitus (HbA1c:11.8%) in a half year earlier. However, he did not take any antidiabetics agent. His smoking history is 1.5 pack per day over 20 years. And the alcohol consumption was 150ml sorghum liquor per day. This time, he suffered from general malaise, poor appetite, productive cough, right chest wall pain and mild dyspnea about one month ago. He initially visited to the local hospital (Chu Shang Show Chwan) for help. But the clinical condition deteriorated. He was then transferred to our hospital. On clinical examination, the chest radiography showed right middle lobe and left upper lobe alveolar infiltration with consolidation and pleural effusion over right lower lung field ***(Figure 1)***. Reviewed the chest computed tomography (CT) of Chu Shang Show Chwan hospital revealed alveolar consolidation over RML with cavity lesion ***(Figure 2)***. At the beginning, he was treated as severe bacterial pneumonia including atypical and subacute infection. However, the respiratory failure with septic shock was noted. He received the endotracheal

tube intubation and was transferred to ICU for intensive care.

In the ICU admission days, he received the diagnostic bronchoscope for pathogen identification and histologic evidence. The bronchoscope disclosed necrotizing tissue along lobar bronchus of right middle lobe; and the specimen obtained over the orifice of lateral bronchus(RB6) ***(Figure 3)***. The aspergillus (galactomannan) antigen was positive(10.17, reference range <0.5) in the bronchoalveolar lavage. The pathological specimen showed septated fungal hyphae with acute angle branching and fungal spores in GMS stain ***(Figure 4)***. Besides, the sputum fungus culture yield ***Aspergillus flavus***. The patient's immunoglobulins were normal. His HIV serology was negative. The lymphocyte subsets were within normal limits and there was no atypical proliferation.

Thus, he received the liposomal amphotericin B for pulmonary aspergillus infection. Nevertheless, the clinical condition progressed as acute respiratory distress syndrome. He was expired eventually even with aggressive intensive organ support.

Discussion

Reviewed the other reference and recent research[1,2], there was the well-established risk factors for aspergillosis include HIV, cancer, recent corticosteroid therapy, chemotherapy, or thoracic surgery. Non-well-established risk factors may include a history of diabetes. The incidence of diabetes was greater than seen in immunocompromised patients and may be considered an additional risk factor for the development of aspergillosis infection[4]. Moreover, in the immunocompetent host, invasive pulmonary aspergillosis can progress to pneumonia and death within several weeks. Thus, we may earlier recognize and always keep in mind that the aspergillus infection even in the immunocompetent individual with uncontrolled diabetes mellitus.

Figures

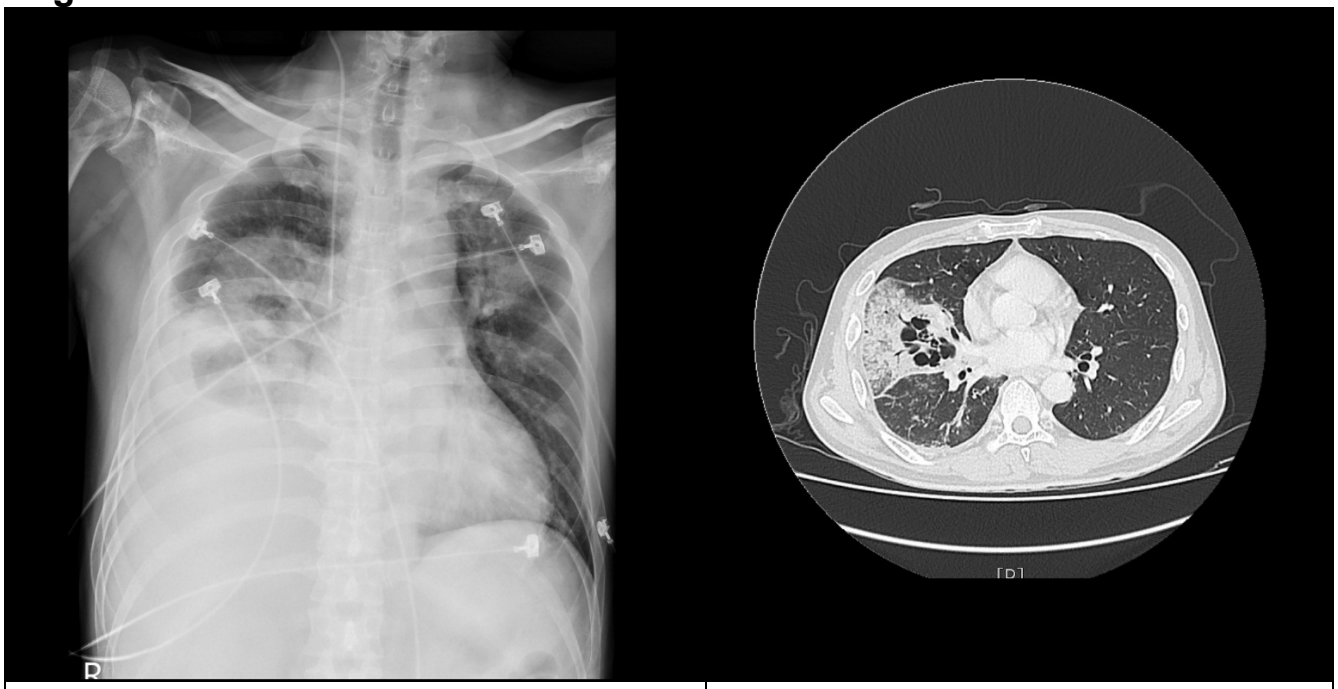

Figure 1: The chest radiography showed right middle lobe and left upper lobe alveolar infiltration; and consolidation with pleural effusion over right lower lung field

Figure 2: The chest computed tomography revealed alveolar consolidation over RML with cavitation

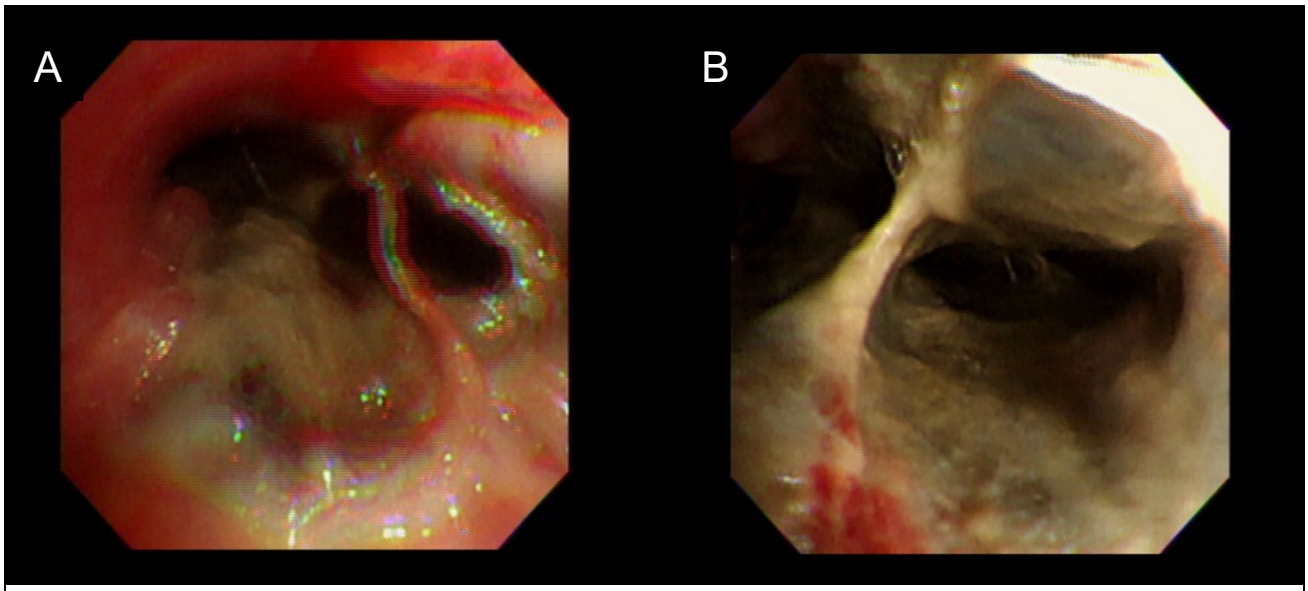

Figure 3: The pictures (A) and (B) showed the bronchoscope image, necrotizing tissue along right middle lobe and the orifice of lateral bronchus

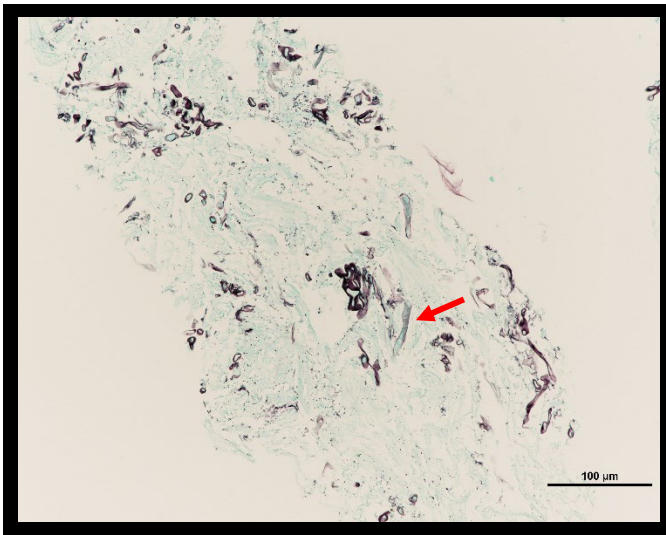

Figure 4: Septated fungal hyphae with acute angle branching and fungal spores in GMS stain (red arrow)

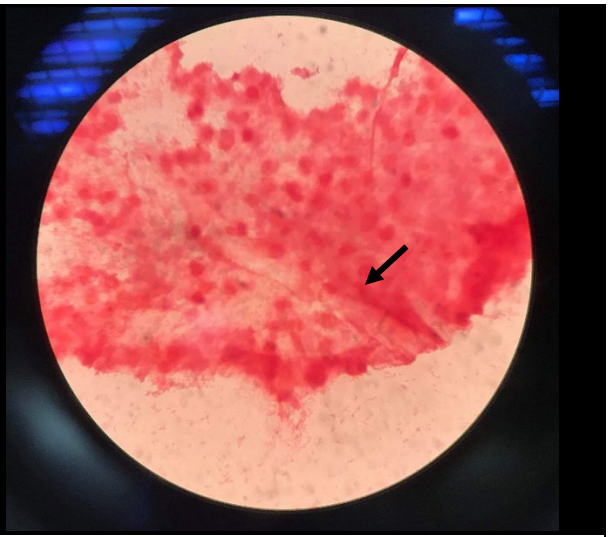

Figure 5: The Gram' stain showed septated fungal hyphae (black arrow)

References

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