รายงานผู้ป่วย

Cryptococcus pneumonia

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We reported case of cryptococcosis in a normal host who suffered from left upper lobe pneumonia. ***Cryptococcus neoformans*** *was proved by histopathology. The patient had been treated by antifungal drug(Amphotericin B) and was not improved. The patient then underwent resection of the left upper lung. After the post-operative treatment she was improved and without serious complication.*

The purpose of this report is to make awareness of the clinician and radiologist in diagnosis of bacterial pneumonia which is often difficult to be distincted between fungal pneumonia and bronchogenic carcinoma.

Key word: *Cryptococcus pneumonia.*

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สมชาติ กุลสัมพันธ์ทิพย์, เกียรติ อาจหาญศิริ. โรคปอดบวมที่เกิดจากเชื้อราคริปโตคอค-โคซิส. จุฬาลงกรณ์เวชสาร 2540 มี.ค;41(3): 211-6

รายงานผู้ป่วยโรคคริปโตคอคโคซิส 1 ราย โดยที่ผู้ป่วยรายนี้มีภูมิคุ้มกันปกติไม่มีโรคอย่างอื่นร่วมด้วย ลักษณะที่พบคือ ปอดบวมทั้งกลีบของเนื้อปอดด้านซ้ายบนเชื้อที่ตรวจพบคือ คริปโตคอคคัสนีโอฟอร์มาน จากการตรวจโดยพยาธิวิทยา ผู้ป่วยได้รับการรักษาด้วยยาต้านเชื้อราแล้วอาการไม่ดีขึ้น จึงได้นำผู้ป่วยไปผ่าตัดเอากลีบของเนื้อปอดที่เป็นโรคออก หลังการรักษาผู้ป่วยมีอาการดีขึ้นไม่พบภาวะแทรกซ้อน วัตถุประสงค์ในการรายงานผู้ป่วยรายนี้ เพื่อให้แพทย์ที่ดูแลรักษาผู้ป่วยได้คิดถึงโรคปอดบวมที่เกิดจากเชื้อราด้วย ซึ่งลักษณะคล้ายโรคปอดบวมที่เกิดจากเชื้อแบคทีเรีย และดูค่อนข้างรุนแรงคล้ายโรคมะเร็งของปอด

Case Report

A 27 year-old women had experienced chest pain, chronic cough, malaise, and low-grade fever for two months. She had been treated at Chulalongkorn Hospital for the presumptive diagnosis of pneumonia. Her chest radiographic examination showed haziness in the left upper lobe and lingular segmentation of the left lung. Minimal mediastinal shift to the right was noted.(Fig.1 A,B). The clinical

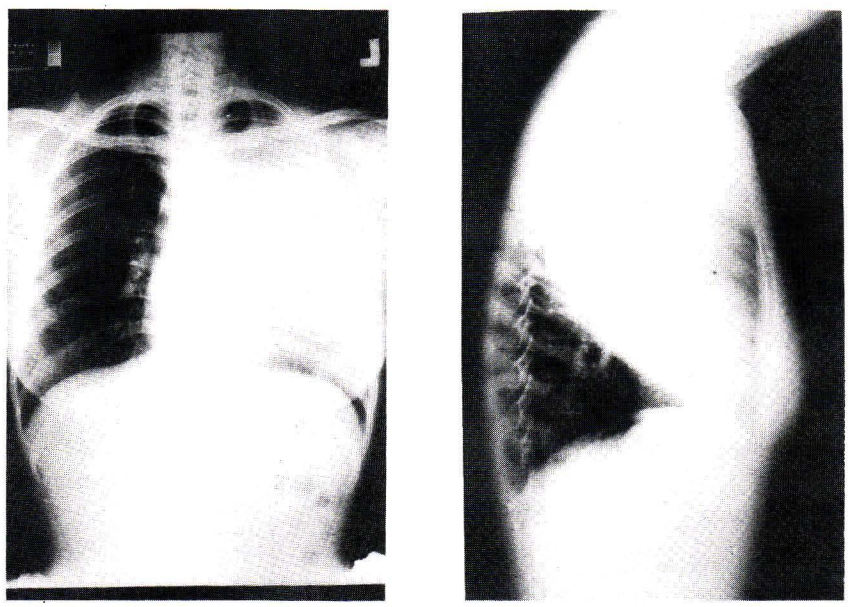

Figure 1. (A,B) PA and lateral chest films shows haziness in left upper lobe and lingular segment. Minimal mediastinal shift to the right is noted.

appearance of the patient was not improved after she had been treated with antibiotic drugs for 14 days. We noted decreased expansion and breath sounds of the left lung. Laboratory findings revealed an elevated WBC (18,000/ mm^3), decreased hematocrit (28 vol %), and negative for AFB sputum examination. However India ink stained smears found encapsulated yeast cells.

The patient underwent bronchoscopy which revealed that there was a narrowing of left main bronchus. A biopsy was performed and *Cryptococcus neoformans* was discovered. Amphotericin B was given for 4 weeks (1600 mg). The patient slightly improved and a CT-scan of the chest was performed. The CT findings revealed a large necrotic mass in the upper lobe and lingular segmentation of the left lung extending into the chest wall (Fig.2). The patient underwent a surgical resection of the left upper lung. He found an upper left lobe mass of about 660 gm weight. A cross-section

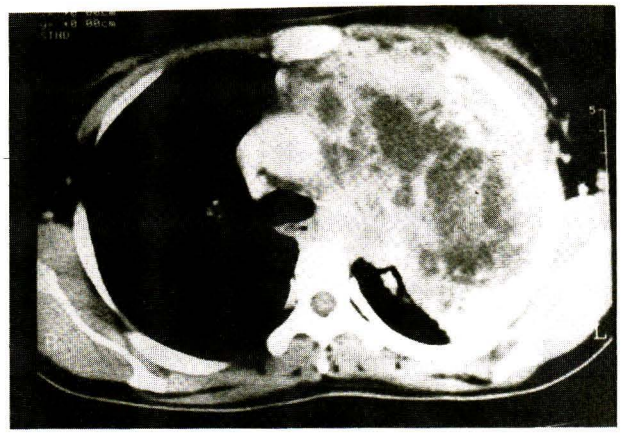

Figure 2. The CT-scan of the chest revealed a large necrotic mass in the left upper lobe and lingular segment with extending into the chest wall.

of the mass was mucoid grey white and microscopy revealed numerous encapsulated round organisms in alveoli, cryptococcosis was suggested. (no picture to demonstrates).

The patient status improved remarkably. She was discharged from the hospital 10 days post-operation. The CXR showed good expansion of the left lower lung (Fig.3).

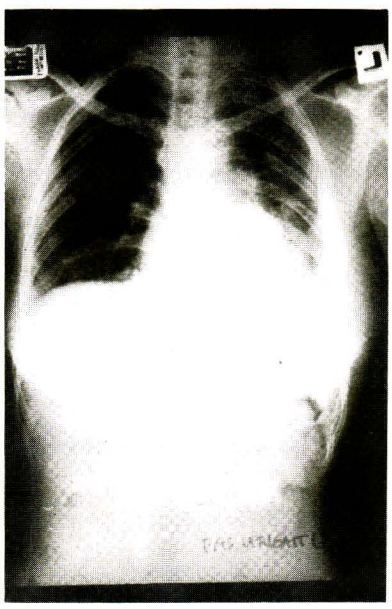

Figure 3. PA chest film post resection of left upper lung shows good expansion of left lower lung.

Discussion

Cryptococcus neoformanshas a world-wide distribution and is particularly abundant in soil contaminated by pigeon droppings. The organism appears as a thin-walled, non-mycelial, budding yeast 2-20 um in diameter that is characterized by a thick polysaccharide capsule best seen on India ink stains.[1,2] It can be cultured by standard techniques, but its growth is inhibited by cycloheximide, a substance used to inhibit growth of saprophytic yeasts in the culture media.

Cryptococcosis usually occurs in adults and is more common in men than in women. There is no racial predilection. Human to human transmission of the disease has never been documented.[3]

Cryptococcosis may occur in patients with normal immunity, however, most patients who develop cryptococcosisare immunocompromised.[4] Predisposing factors include acquired immunodeficiency syndrome (AIDS), hematologic malignancies, organ transplantation, corticosteroid therapy, sarcoidosis, and other conditions that impair cell-mediated immunity.

In case of cryptococcosis in a normal host, four main patterns of pulmonary involvement may be seen. 1) Cryptococcal fungus collection, typically are located in sub-

pleura. Cryptococcal fungus collections accounted for 19% of cases of pulmonary cryptococcosis. 2) Cryptococcal pneumonia, unilateral or bilateral, segmental or lobar alveolar consolidation is the most frequent radiologic finding. 3) Pulmonary nodules, are the most common manifestation of cryptococcosis in normal hosts and account for roughly one third to one half of all cases. 4) Disseminated disease. This is rare.

In case of cryptococcosis in a immunocompromised host, the spectrum of clinical and radiological findings are often similar to that found in normal hosts. However, rapidly progressive and fulminant pulmonary disease may occur. In addition, there is a much greater tendency to develop cavitation, hilar and mediastinal lymphadenopathy, pleural effusion, and disseminated disease. Cryptococcosis is the most common fungal infection in patients with AIDS.[5]

Generally, pulmonary nodule is the most common manifestation of cryptococcosis in the normal hosts. In contrast, the cryptococcal pneumonia is rare in normal hosts.

In this case the patient was a normal host and laboratory exammination on admission was normal such as negative for anti HIV, normal FBS (100 mg%), T4/T8 ratio = 1.53 (1.35#0.48). No history of autoimmune disease was documented and blood culture for cryptococcus was negative. No evidence of disseminated disease in this case was found.

Radiologic and computed tomography findings in this case shows necrotic mass at left upper lobe and extending into the chest wall. It is more invasive than other bacterial pneumonia and its distinction from carcinoma is often difficult. With this phenomena, it is more common to be presented in an immunocompromised patients such as the patient with AIDS, lymphoma, leukemia, and diabetes mellitus than to be found in a normal host.

In summary, the diagnosis for cryptococcosis by sputum cultures and bronchial washing is unreliable, although a positive sputum culture or bronchial washing specmens in an immuno-compromised patients should be viewed as highly suspicious for the disease.[3]

Definitive diagnosis of pulmonary disease usually requires identification of organism in tissue biopsy or surgical specimens. If serum cryptococcal antigen titers are positive, disseminated disease should be suspected. These patient should undergo lumbar puncture to search for CNS involvement. Cultures of blood, bonemarrow, urine and prostatic secretions may also help in diagnosing disseminated disease.[3]

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